AGENDA

DATE: Monday, November 16, 2015

TIME: 5:30 PM

PLACE: Public Works Center (Second Floor Conference Room), 15 South Smith Street

WPCA Regular Meeting:

1. Call to Order

2. Approve the minutes from WPCA Meeting held on October 19, 2015 (copy included)

3. Approve sewer use fee adjustment for 3 East Wall St (letters included)

4. Authorize the Chairman or Vice Chairman of the Water Pollution Control Authority to execute an Agreement with C. H. Nickerson & Co., Inc. in the amount of $3,306,493 for the Norwalk WPCF Main Influent Pump Replacement Project (Project: WPCA 2015-1). (bid documents attached)

   Account No. 09164062-5777-C0563

5. Authorize the Director of Public Works to issue orders on contract to C. H. Nickerson & Co., Inc. for the Norwalk WPCF Main Influent Pump Replacement Project (Project: WPCA 2015-1) for an amount not to exceed $330,649.

   Account No. 09164062-5777-C0563

6. Authorize the Chairman or Vice Chairman of the Water Pollution Control Authority to execute an amendment to the January 13, 2015 Agreement with Arcadis U.S., Inc. in the amount of $328,802 to provide construction administration and resident engineering services (Part B) for the Main Influent Pump and Related Equipment Replacement Project in accordance with a Scope of Work dated January 8, 2015 (copy included, representative from Arcadis to attend).

   Account No. 09164062-5777-C0563

7. Authorize the Director of Public Works to issue orders on the July 15, 2014 contract with Heilkamp, Inc. in the amount of $280,728.18 for the Beacon Street Interceptor Service Area Project (Project: WPCA2014-1) (construction costs included).

   Account No. 09134062-5777-C0361
8. Authorize the WPCA Chairman to be the Signatory Authority and authorize OMI, Inc. staff member(s) as the Bypass Reporter(s) to submit online Bypass Reports to the Connecticut DEEP.

   a. OMI Monthly Operating Report – October 2015 (copy included)

10. Reports:
    a. FY15/16 Revenues/Expenditures MUNIS Report (copy included)
    b. Draft FY16/17 Capital Budget (copy included)
    c. Discussion on the EPA Inspection – Nov 12th and 13th
    d. Sewer Use Bill Appeals/Adjustments Update
       1) Appeal status
    e. Information Copies:
       1) 2016 WPCA Meeting Schedule (copy included)

11. Adjournment

   **Next WPCA Meeting:**  Monday, December 21, 2015
   5:30 PM
   Second Floor Conference Room, Public Works Center
   15 South Smith Street
CITY OF NORWALK
WATER POLLUTION CONTROL AUTHORITY
October 19, 2015

Attendance: Darren Oustafine, Chairman
            Lewis Clark, Vice Chairman
            Dave McCarthy
            John Flynn
            Frederika Bikakis-Hajian

Staff: Bruce Chimento, DPW Director
       Lisa Burns, DPW Principal Engineer
       Ralph Kolb, DPW Senior Environmental Engineer

Others: John Ahern, CH2M Hill, OMI, Inc.
        Paola Molloy, CH2M Hill, OMI, Inc.
        Scott Orenstein, Goldberg Segalla
        Robert Koch, The Norwalk Hour
        Diane Lauricella

1. CALL TO ORDER

Chairman Oustafine called the meeting to order at 5:30PM

5. CONTRACT OPERATING REPORT

a. OMI Monthly Operating Report- September 2015 (copy included)

Mr. Ahern reported on the maintenance and said that the dechlor tank has been
 cleaned, and that a water meter was installed on the Wastewater Treatment Plant water
 line to track reuse water in vector trucks. He said that there were no monthly permit
 violations, but that there was a performance guarantee exceedance due to chlorination
 breakpoint. Ms. Burns said that at some point every year the WPCA looks to see if there
 were any performance guarantees and the Board will determine if any monetary
 damages will be assessed against CH2M Hill. Mr. Ahern reported on the collections
 system and the collection systems progress meeting and said that fences have been
 installed at Fort Point Street and Howard Avenue, and that AJ Penna has repaired the
 force main at Gull Road. He said that the production rate for CCTV for the month of
 September is 2.17 miles, and that next month’s TV inspection efforts continue to focus
 on documenting known critical areas and sewer lines crossing streets on the 5 year
 paving list. He said that nitrogen was in band “D”.

Mr. Kolb said last Friday the EPA had contacted the WPCA and they will be
 performing an inspection on November 12th and 13th on the collections system, and
they will be interviewing staff and the contractor operator. Ms. Burns said that the inspection is scheduled from 8:00AM through 5:00PM each day and that she is hoping to have a debriefing at the end of the inspection.

Mr. Kolb said he had held interviews this past week for the Wastewater Systems Technician position, and that he has reached out to the Personnel Department with his recommendation.

6. REPORTS

a. FY 15/16 Revenues/Expenditures MUNIS Report (copy included)
Ms. Kolb reported and said that last month there was a question from the Board regarding two accounts on the budget report, and that staff had reached out to Mr. Gilden and Mr. Barron requesting to have them attend tonight’s meeting. He said that they could not attend but that Mr. Gilden had provided an e-mail with an explanation. Mr. McCarthy requested that they attend next month’s meeting to provide further explanation to the questions.

Ms. Blakakis-Hajian arrived at 5:55PM

b. WPCA Staffing Authorization (memorandum included)
Mr. Orenstein said that it is his recommendation that the WPCA Board and the Director of Public Works work together to come up with appropriate staffing levels. Mr. Chimento said that staff has been having discussions at length regarding staffing, and discussed the changes in operation that have taken place and that he does not see that there is not a need for any concern, but if the Board feels there needs to be additional staffing it can be discussed. After further discussion it was decided that the WPCA will look at staffing in the next couple of months and if everyone is comfortable with it to move forward, and if not to re-look at it. It was also decided that Ms. Burns will work with Mr. Orenstein regarding making possible changes to the Municipal Code for discussion at the December meeting.

c. Discussion on the WWTP Capacity (memorandum included)
Mr. Kolb said that there has been some discussion from the public regarding capacity at the Wastewater Treatment Plant with the new developments in the city that are occurring currently and in the near future. He said that the Wastewater Treatment Plant is an 18 MGD per day advanced wastewater system facility, and with the most recent upgrade in 2012 has increased to 95 MGD per day. He said in looking at three years worth of flow data the current one year average flow is 12.7, and the three year average is also 12.7. He said that there is language included in the NPDES permit that the State has to identify when the WPCA must evaluate Wastewater Treatment Plant for expansion due to future flows and there are no capacity issues at this time. Mr. McCarthy asked if there is a trend since it seems that the one and three year average flows are the same. Mr. Kolb said “yes” and they are going down and that is primarily due to the capital improvement projects in the collection system.
d. Discussion on WPCA Projects:
   1) Main Lift Pump Replacement Project
      i. Flygt Pump Price Proposal
         Mr. Kolb said that the bid opening is scheduled for Wednesday, November 21, 2015, and that the Flygt pump price proposal is just under $1.5 million dollars.
   2) Beacon Street Interceptor Service Area Sewer System Rehabilitation Project
      No discussion.
   3) Sammis Street Pump Station and Ann Street Flood Damage Upgrade
      Mr. Kolb said that Delray was onsite last week installing the release and check valves, along with the associated piping and working on the punch list items. Mr. Flynn asked if the pump station is operational. Mr. Kolb said “yes” and that it has been operating and that all the major work has been completed and that the contractor is working on finishing the punch list items.

e. Sewer Use Bill Appeals/Adjustments Update
   1) Appeal Status
      Mr. Kolb said that the adjustments to date are $25,279.

3. APPROVE THE MINUTES FROM WPCA MEETING HELD ON SEPTEMBER 21, 2015 (COPY INCLUDED)

** MR. MCCARTHY MOVED TO APPROVE THE MINUTES
** MOTION PASSED UNANIMOUSLY

4. AUTHORIZE THE CHAIRMAN OR VICE CHAIRMAN OF THE WATER POLLUTION CONTROL AUTHORITY TO EXECUTE AN AMENDMENT OF THE JUNE 11, 2013 AGREEMENT WITH ARCADIS U.S., INC. IN THE AMOUNT OF $68,000 TO PROVIDE CONSTRUCTION ADMINISTRATION SERVICES FOR THE BEACON STREET INTERCEPTOR SERVICE AREA PROJECT IN ACCORDANCE WITH A LETTER PROPOSAL DATED OCTOBER 15, 2015 (COPY INCLUDED)

ACCOUNT NO. 09134062-5777-C0361

Mr. Kolb said that this item is for services that exceeded the negotiated engineering services as well as for additional work that needs to be done.

** MR. FLYNN MOVED TO APPROVE THE ITEM
** MOTION PASSED UNANIMOUSLY

2. EXECUTIVE SESSION TO DISCUSS TERMINATION OF APPLIED TECHNICAL SERVICES

** MR. MCCARTHY MOVED TO ENTER INTO EXECUTIVE SESSION
** MOTION PASSED UNANIMOUSLY

Executive session began at 6:35PM
Executive session ended at 7:00PM
No action was taken

7. ADJOURNMENT

** MR. MCCARTHY MOVED TO ADJOURN
** MOTION PASSED UNANIMOUSLY

The meeting adjourned at 7:00 PM

Respectfully Submitted,

Dilene Byrd
July 1, 2015

Water Pollution Control Authority for the City of Norwalk
15 South Smith Street
Norwalk, CT 06855

RE: Wall Street Manor

Dear Kyle,

I received a Sewer Use Tax bill for July 31, 2015 that increased to $4,391.00 from last year’s bill. This put me on alert? After my research this is what I found;

Per our phone conversation the other day I have enclosed documents that will prove that Wall Street Manor had an irrigation system installed back in October of 2013 by Dobson Turf Irrigation. We believe that from the beginning there was a leak in the system that caused a huge increase in the water consumption from 10/2013-7/23/2014. We also believe that none of this water went down into a sanitary sewer drain. After the leak was repaired by Dobson the water consumption went back to normal, as you can see from all the First District Water Dept., bills along with documents that are enclosed for you to view.

I have also enclosed the Water Pollution Appeal Form.

Can you please tell me what the next step is? Should we pay this tax bill during this Appeal process?

As I explained to you we are just a small company starting out in Norwalk and this increase of $4,391.00 is very difficult for our company to absorb at this time.

Thank You,

Maria Pelosi
Office Manager
June 30th, 2015

To: Hathaway Property Management

3 East Wall Street

Norwalk, CT 06851

Attn: Maria

In the spring of 2014, after the irrigation system was opened, there was a leak in one of the lines outside and that water was going into the ground outside. We were called to repair that line which we did.

Sincerely,

Mark Lambert

Manager

Dobson Irrigation
**BID RESULTS**

**Project:** WPCA2015-1 Norwalk WPCF Main Influent Pump Replacement Project  
**Date:** Wednesday, October 21, 2015 at 2:00 pm

<table>
<thead>
<tr>
<th>BIDDER</th>
<th>BID AMOUNT</th>
<th>BID BOND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kovacs Construction Corp.</td>
<td>$3,830,665.00</td>
<td>15% Travelers Casualty and Surety Co. of America</td>
</tr>
<tr>
<td>Ferguson</td>
<td>$3,392,000.00</td>
<td>15% Travelers Casualty and Surety Company of America</td>
</tr>
<tr>
<td>L. Holzner Electric Co.</td>
<td>$3,466,000.00</td>
<td>15% Fidelity &amp; Deposit Company of Maryland</td>
</tr>
<tr>
<td>C.H. Nickerson &amp; Co. Inc.</td>
<td>$3,306,493.00</td>
<td>15% Continental Casualty</td>
</tr>
<tr>
<td>Delray Contracting Inc.</td>
<td>$3,531,166.00</td>
<td>15% Western Surety Company</td>
</tr>
</tbody>
</table>
Subject: Contract 2015-1
Norwalk WPCF Main Influent Pump Replacement Project
Bid Evaluation

Dear Mr. Kolb:

As you are aware, the bid opening for the above referenced project was held on October 21, 2015 at City Hall. Five bids were received as summarized below. The apparent low bidder is C.H. Nickerson & Co., Inc. of Torrington, CT.

<table>
<thead>
<tr>
<th>Bidders Name</th>
<th>Total Base Bid Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. H. Nickerson &amp; Co., Inc.</td>
<td>$3,306, 493.00</td>
</tr>
<tr>
<td>Ferguson</td>
<td>$3,392,000.00</td>
</tr>
<tr>
<td>L. Holzner Electric Co.</td>
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<td>Delray Contracting</td>
<td>$3,531,166.00</td>
</tr>
<tr>
<td>Kovacs Construction Corp.</td>
<td>$3,830,665.00</td>
</tr>
</tbody>
</table>

Arcadis has completed a bid evaluation for the Norwalk WPCF Main Influent Pump Replacement Project, Contract 2015-1. This assessment consisted of reviewing the bid results provided by the City of Norwalk WPCA (WPCA) and a limited review of the bid documents for C.H. Nickerson, Inc. (CHN). This evaluation focuses on the bid pricing and bidder’s qualifications. This
memorandum summarizes the results of our bid evaluation and represents our recommendations for the WPCA’s best interest.

Our review included the Itemized Proposal and Bidder's Qualifications Statement. Based on the information provided, we found that CHN has provided substantially complete information.

ITEMIZED PROPOSAL

The Engineer’s Construction Cost Estimate (ECCE) for Contract 2015-1 was $4,374,350.00, and included a 5% construction contingency. A range was provided to prospective bidders during the bid period of $3.7 - $4.6M.

CHN's total base bid price is $3,306,493.00, which is 24% lower than the ECCE.

A Bid Alternate was included for Disposal of Existing Pumps and VFDs. CHN assigned no cost ($0) to this Bid Alternate Item.

Two Allowances were established on the Bid Form. An Allowance was included to reflect a pre-negotiated price for provision of pumps and Variable Frequency Drives (VFDs). The value of this Allowance is $1,498,500.00. The second allowance was established for cleaning of the wet well, with a value of $20,000.

BIDDER QUALIFICATIONS STATEMENT

As part of the bid evaluation, Arcadis conducted a survey of projects referenced. CHN has provided substantially complete information with regards to bidder’s qualifications.

Reference Survey

A reference survey was conducted for CHN which consisted of interviewing the listed Owner and Engineer for two (2) previously completed and one (1) ongoing project. A total of six (6) interviews were conducted. A summary of the survey responses can be found in Attachment 1 and completed reference surveys are provided in Attachment 2.

Overall, references have provided positive feedback. All references reported the quality of the final product to be exceptional and that the Owners were very pleased. No concerns were raised regarding staffing or supervision in the field and all references confirmed adequate safety programs were adhered to. In multiple interviews with both the Owner and Engineer, each with respect to separate projects, the reference noted CHN’s outstanding workmanship during
construction. In all interviews conducted, the references noted that CHN’s responsiveness to Owner and Engineer requests was adequate, and that they anticipated and responded to issues in the field well, avoiding many potentially time consuming delays.

SUMMARY AND RECOMMENDATIONS

In summary, based on the submitted bid, and the overall positive feedback from references for similar work, ARCADIS recommends that Contract 2015-1 – Main Influent Pump Replacement Project be awarded to C. H. Nickerson & Co., Inc.

Sincerely,

Arcadis U.S., Inc.

[Signature]

Vanessa McPherson, P.E.
Senior Project Engineer

Copies:
L. Burns, City of Norwalk
C. Cavaliere, City of Norwalk
G. Bazydola, Arcadis

Enclosures:

Attachments
1 Summary of Survey Responses
2 Completed Reference Surveys
Subject: Norwalk Water Pollution Control Facility Request for Proposal – Main Influent Pump and Related Equipment Replacement Project

Dear Mr. Kolb:

As requested, ARCADIS is pleased to submit our proposal to assist the WPCA with the Main Influent Pump and Related Equipment Replacement at the Norwalk Water Pollution Control Facility (WPCF).

We understand the critical nature of the Main Influent Pumps, and the impact that the persistent maintenance and resulting downtime has on the WPCA’s operations. ARCADIS commits to treating this evaluation and design with the urgency it warrants, and will be diligent in addressing the situation in a timely manner.

Our scope of services is described in detail in the attached proposal, with overall costs for performing the work identified. We intend to review the hydraulics and pump selection performed by CDM-Smith, and utilize that information to prepare detailed design documents for the Main Influent Pump and Related Equipment replacement. In addition, we have provided an outline of staff proposed for assignment to this project and their qualifications.

We look forward to assisting the WPCA with implementing this important project. Should you wish to review or discuss any aspect of the attached documentation, do not hesitate to contact me.

Sincerely,

ARCADIS U.S., Inc.

Gregory S. Bazydola, PE
Vice President

Copies:
File

Imagine the result

ARCADIS U.S., Inc.
213 Court Street
Suite 700
Middletown
Connecticut 06457
Tel 860 503 1500
Fax 860 503 1520
www.arcadis-us.com

Water Division

Date: January 8, 2015

Contact: Greg Bazydola, PE
Phone: 860.503.1450
Email: greg.bazydola@arcadis-us.com

Our ref: 66000867.0042
Main Influent Pump Replacement Project Team

Quality Assurance and Quality Control
Design Quality Leader
Tim McDonald, PE
Pump System Technical Advisor
Charlie Hurst, PE, BCEE

Project Management
Project Manager
Greg Bazydola, PE
Assistant Project Manager
Vanessa McPherson, PE

Client Service
Catherine Mallon Traynor

Design Disciplines / Technical Support Leaders
Structural
Justin Minadeo, PE

Electrical
Patrick Daigle, PE

Instrumentation and Control
Ryan Kowalski, PE

HVAC
Vincent Vitale, PE

Commissioning
Lailani Metzler

Construction Support
Robert Nowell
Project Team Qualifications

**Greg Bazydola, PE**  
Project Manager

Greg's experience has focused on the design and construction of municipal wastewater facilities, including pumping stations. His work has involved all phases of design and construction from conceptual level through engineering analysis, detailed layout, resident engineering, and ultimate startup.

**Vanessa McPherson, PE**  
Assistant Project Manager

Vanessa has extensive experience with various aspects of wastewater transmission and treatment design. Her background includes process planning, design, preparation and coordination of design documents, bidding, and construction administration. She has worked on multiple pump station projects in Connecticut.

**Tim McDonald, PE**  
Design Quality Leader

Tim has over 15 years of experience in detailed design of pump stations and wastewater treatment plants. Tim has followed his designs through construction and startup and is well versed in the procedures associated with design and construction. He has worked extensively in Connecticut.

**Charlie Hurst, PE, BCEE**  
Technical Advisor

Charlie is a senior engineer with extensive experience in pump system design and the application of pumps in wastewater facilities. His experience includes all facets of pumping systems including hydraulics, pump selection, layout, controls, piping, and other critical pumping system appurtenances.
Project Team Qualifications

Catherine Mallon Traynor
Client Service

Cathy has served as the Principal in Charge for Norwalk WPCA on behalf of ARCADIS, and recognizes the importance of implementing policies, procedures and project controls to effectively plan and oversee projects.

Lailani Metzler
Commissioning Leader

Lani has a diverse background in wastewater facility operations and management, including O&M best practice assessments, field inspection of process operations and equipment condition, facility startup, operator training, and implementation of facility computerized maintenance management systems.

Robert Nowell
Construction Support

Bob is a project designer with extensive experience in the design and layout of all phases of planning and design of municipal wastewater treatment facilities and water and sewage pumping stations. In this capacity, he has been involved from conceptual through detailed design to field assistance during construction.
Project Team Qualifications

Justin Minadeo, PE
Structural Design Leader

Justin has experience performing numerous structural condition assessments of existing facilities and providing engineering services during construction. His project responsibilities include developing design criteria, performing structural analysis/design calculations and writing specifications.

Ryan Kowalski, PE
Instrumentation and Controls Design Leader

Ryan is responsible for design and construction supervision of SCADA, instrumentation and automation systems for wastewater treatment systems. His focus is on process control automation evaluation and design, telemetry/network design, configuration, evaluation of instrument systems, and system startup/commissioning.

Patrick Daigle, PE
Electrical Design Leader

Pat specializes in electrical engineering. His work has involved various aspects of electrical design of large and small municipal wastewater treatment processes, including the design of power distribution, generators, lighting, grounding, control schematics and wiring interconnections.

Vincent Vitale, PE, LEED AP
HVAC Design Leader

Vinny specializes in the management, design and construction of heating, ventilating, and air conditioning systems for municipal, commercial and industrial applications. He is particularly well versed in building control modifications, as well as HVAC system cost saving measures.
TECHNICAL SCOPE OF DESIGN PHASE AND CONSTRUCTION PHASE
ENGINEERING SERVICES

NORWALK WATER POLLUTION CONTROL AUTHORITY
MAIN INFLUENT PUMP REPLACEMENT

Part A – Design Phase

A.1 Description and Scope

The general intent of the project is to prepare a bid package for the replacement of the Main Influent Pumps and all related equipment. The basic scope is as outlined below.

ARCADIS was provided the November 14, 2014 CDM-Smith (draft) memorandum entitled “Norwalk CT Water Pollution Control Facility Main Influent Lift Pump Options” with Attachment A only. The memorandum outlined the issues with the existing pumping equipment and recommendation to replace the existing pumps and VFDs with new pumps and new VFDs provided by ITT Flygt. This task item includes the drawing and specifications (base design) required to implement the design solution.

ARCADIS will review the pump selection included in the CDM-Smith memorandum dated November 14, 2014 and verify the design point of the pump (proposed rated flow and TDH). In order for ARCADIS to take ownership of the pump selection, a full hydraulic review will be completed. This will include system hydraulics, system operation evaluation, pump operation range, and final pump selection. Our budget also includes one day for a surveyor to confirm critical pump station elevations shown on the record drawings. The WPCA shall provide the preliminary design information (available hydraulics, system curves, pump selections, design memorandums, layout drawings) prepared by CDM-Smith relative to the Main Influent Pump and related equipment for reference by ARCADIS. ARCADIS will provide an alternative selection for consideration by the Norwalk WPCA if the CDM-Smith selection is not acceptable to ARCADIS. This will be completed prior to initiating the 30% Basis of Design Phase.

The scope will include development of detailed design drawings for the implementation of the selected pumps and related equipment, including all provisions for staging and maintenance of plant operations (MOPO) during construction for pump and related equipment replacement. It is anticipated that only one pump will be out of service at any one time and therefore a design of a bypass pumping system is not required.

The existing pump pads will be demolished and new pads constructed. In addition, modifications to the discharge piping layout may require structural modifications to concrete pipe supports. Pads for VFDs in the electrical room may also require modification to accommodate proposed equipment.

Modifications to the pump VFDs will be required, and the electrical room air conditioning
ventilation capacity will be reviewed to ensure adequacy for the increase in heat rejection that may result. ARCADIS shall review the existing Electrical Room HVAC system and recommend improvements if required to prevent over-heating of the space. The scope will include increasing the capacity of the HVAC equipment if necessary.

Given the constrained nature of the existing dry well and electrical room, ARCADIS proposes utilizing 3D CADD for the detailed design of the pump and related equipment replacement to verify installation of equipment while minimizing potential conflicts with existing equipment in the field. The 3D model that will be generated will be used for design review meetings, staging/sequencing, and to produce the 2D Contract Drawings. CAD versions of the preliminary layout drawings as well as facility record drawings prepared by CDM-Smith will be made available to ARCADIS for use.

Activities

- Review preliminary layout drawings prepared by CDM-Smith.
- Verify the proposed rated flow and TDH of the proposed ITT Flygt pumps against existing operating information (flow and TDH)
- Process Mechanical (pumps and piping), HVAC, Structural, Instrumentation & Control and Electrical design required for the scope of work identified above
- 30% Basis of Design Memorandum and Review Workshop
- 90% Design and Review Workshop

A.2 Design Deliverables

ARCADIS shall be responsible for final preparation of the complete bid package for the Main Influent Pump and related equipment Replacement. It is assumed that the pumps, VFDs, and control monitoring units will be a package system furnished by ITT Flygt or similar and will be a sole source procurement from a single supplier. ARCADIS will work closely with the pump supplier during the design phase in order to include specific design details within the bid package to reduce coordination and shop drawing development by the contractor. ARCADIS shall be responsible for preparation of final design plans, specifications, bid quantities, and cost estimates for all work presented herein. The work will be designed as one prime Contract.

There are several phases of final design for the Main Influent Pump and related equipment Replacement, each with a set of deliverables related to technical work as described below.

A.2.1 Notice to Proceed to 30% Basis of Design Memorandum

The purpose of this stage of design is to provide a memorandum that demonstrates ARCADIS’ general intent and understanding of the project scope and to present the design criteria and ARCADIS’ approach to completing the project. The memorandum shall include 30% design drawings of sufficient detail to demonstrate that all major project scope items have been accounted for. Drawings at this stage will include layouts for major process mechanical piping and equipment; and electrical drawings including
one-line diagrams depicting critical new work and system modifications. The memorandum shall also include specifications for the major pieces of equipment, discussions regarding pump flow rate and head; HVAC equipment evaluation and resizing (if necessary); instrumentation and control, structural pad and electrical modifications.

A constructability review will be performed by ARCADIS staff with specific experience in this area. A summary of results and considerations will be included in the 30% Basis of Design Memorandum.

An Opinion of Probable Construction Cost will be prepared and submitted. The cost estimate will be prepared to a Class 3 level of accuracy (+30% to -40%) as defined by the Association for the Advancement of Cost Engineering (AACE).

ARCADIS shall provide the following copies of progress design documents to the WPCA at this design milestone:

- Drawings – 5 copies (half size)
- Specifications/Basis or Design Memorandum – 5 copies bound
- 3 compact disks (CDs) with drawings and specifications

ARCADIS shall meet with the WPCA to review the 30% Basis of Design and discuss comments received regarding the submittal. ARCADIS shall document the events of the meeting and provide a detailed listing of all comments and the proposed resolution as a deliverable and documentation of this review meeting. ARCADIS shall plan to attend a minimum of one (1) four hour meeting for this task.

A.2.2 90% Design

The purpose of this stage of design is to set forth, in detail, the requirements for construction and implementation of the entire construction project in the Construction Contract Documents, and provide a revised estimate of project cost.

All comments from previous Design reviews will have been addressed. Contract drawings (all sheets including notes, plans, sections, and details) shall be at “Final” status pending review and comments.

ARCADIS shall submit an opinion of probable construction cost based on the 90% Design. The cost estimate will be prepared to a Class 2 level of accuracy (+10% to -15%) as defined by the AACE.

ARCADIS shall provide the following copies of progress design documents to the WPCA at this design milestone:

- Drawings – 5 copies (half size)
- Specifications/Basis or Design Memorandum – 5 copies bound
- 3 compact disks (CDs) with drawings and specifications
ARCADIS shall meet with the WPCA to review the 90% Design and discuss comments received regarding the submittal. ARCADIS shall document the events of the meeting and provide a detailed listing of all comments and the proposed resolution as a deliverable and documentation of this review meeting. ARCADIS shall plan to attend a minimum of one (1) four hour meeting for this task.

A.2.3 100% Design (Bid Ready)
The purpose of this stage of design is to make any necessary revisions to the 90% Construction Contract Documents based on review by the WPCA, and prepare 100% Design (Bid Ready) documents. Completed bid forms will be included in the specifications.

All comments from 90% Design reviews shall have been addressed. The 100% Design (Bid Ready) contract drawings and specifications shall have the licensed Professional Engineer stamp affixed.

ARCADIS shall work with the pump manufacturer to secure a pre-negotiated price for the pumps and related equipment. The cost information will be included in the 100% Design (Bid Ready) documents for use by prospective bidders.

ARCADIS shall provide the following copies to the WPCA for the final bidding documents:

- Drawings – 5 copies (half size)
- Specifications – 5 bound copies
- 3 compact disks (CDs) with drawings and specifications

A.3 Bidding Services
ARCADIS shall provide services during the bidding of the construction documents. Services shall include attendance at one pre-bid meeting for the project, responding to contractor requests for clarification during the bidding services and review and analysis of the bid submittals. ARCADIS shall prepare Addenda as required to address all issues and questions. Bid reviews by ARCADIS will result in a memorandum prepared by ARCADIS with recommendations to the WPCA for awarding to the lowest responsible bidder.

ARCADIS shall also prepare “conformed” drawings and specifications. Conformed documents shall incorporate all addenda items into the drawings and/or specifications, and shall be signed and stamped by ARCADIS. Drawing changes shall be marked by a revision triangle indicating in what numbered addenda the change was originally made.

ARCADIS shall provide the following copies to the WPCA for the conformed for construction documents:
- Drawings – 5 copies (3 half size, 2 full size)
- Specifications – 5 copies bound
- 3 compact disks with drawings and specifications

A.4 Time of Completion
All design work shall be completed, stamped and signed with 100% Documents (Bid Ready) submitted to the WPCA within the number of days indicated below.

<table>
<thead>
<tr>
<th></th>
<th>Calendar Days from NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTP</td>
<td>0</td>
</tr>
<tr>
<td>Kickoff Meeting</td>
<td>7</td>
</tr>
<tr>
<td>30% Basis of Design Report Submittal</td>
<td>45</td>
</tr>
<tr>
<td>30% Submittal Review Meeting</td>
<td>50</td>
</tr>
<tr>
<td>90% Submittal</td>
<td>90</td>
</tr>
<tr>
<td>90% Review Meeting</td>
<td>95</td>
</tr>
<tr>
<td>Final Bid Deliverable Submittal</td>
<td>120</td>
</tr>
</tbody>
</table>

* Schedule does not include the time required for optional design services if authorized.

Part B – Construction Administration

B.1 General Scope of Work
The engineering services during construction, commissioning, and close-out services will generally consist of the following: review submittals; review and respond to requests for information (RFIs) and requests for clarification; interpret contract documents; conduct periodic site visits; attend and facilitate construction project meetings; review progress of construction; develop requests for proposals, change orders, and Work Change Directives; review and evaluate change order proposals; prepare change orders, maintain logs for submittals, RFIs, change order proposals and change orders; provide technical support; monitor contractor’s general conformance with the Contract Documents; provide field support during start-up; provide field support to the WPCA and contractor during process/plant shutdowns; develop Operation and Maintenance (O&M)
Manual(s) and Standard Operating Procedures (SOPs); provide and/or coordinate operator SOP training; participate in technical inspections of the project, substantial completion inspection and final walk-through; review punch list; prepare record drawings; and participate in close-out meeting with contractor and the WPCA and their representatives.

The scope of the engineering services during construction, commissioning and close-out services is further described below:

B.2 Engineering Services During Construction

ARCADIS shall provide general engineering services during construction for the duration of the construction phase of the project. ARCADIS shall attend all project meetings (pre-construction, progress), coordinate attendance, and prepare for agenda items and meeting minutes as required, unless otherwise noted.

The duration of ARCADIS’ engineering services during construction will coincide with the duration of the contract for construction.

B.2.1 Project Management

Task includes monthly reports, invoicing, team and subcontractor coordination, contract communications, scheduling, and oversight. The duration for overall project management shall be the anticipated duration of construction is 18 months.

ARCADIS shall provide consultation and advice during construction and provide technical engineering support during construction activities. Update and modify the Contract Documents to meet changed project conditions as necessary to supplement and/or provide clarity to the Contract Documents during the construction phase of the project (to address RFIs, Change Orders, and other issues requiring modified Contract Documents). This does not include revisions required for Record Drawings as required in subsequent sections of this Scope.

B.2.2 Attend Pre-Construction Conference

A meeting will be held between the Contractor, WPCA, and ARCADIS prior to the start of construction to coordinate the start of construction, review any issues that may have arisen, and discuss the expectations of the parties involved. ARCADIS shall coordinate the preparation of meeting documents, such as the agenda with the WPCA, distribute information prior to the meeting, and record meeting minutes. ARCADIS shall assume one (1) attendee at this meeting.

B.2.3 Construction Progress Meetings

ARCADIS shall assume eighteen (18) one hour progress meetings, held periodically as deemed necessary by the WPCA and Contractor. ARCADIS shall assume two (2) attendees at this meeting.

In addition to attendance at the progress meetings, ARCADIS shall facilitate the meetings, prepare a package for each meeting containing agenda, a summary of open
submittals, RFIs, and PCO/Change Order to be reviewed at each meeting, and a 3-week look ahead schedule (to be provided by Contractor), and other documentation that may be required for meetings that are not specified. Meeting minutes will be prepared by ARCADIS and provided to the WPCA.

B.2.4 Issue Resolution Meetings
ARCADIS shall assume that construction related issues will arise that may require formal meetings between the Contractor, ARCADIS, and the WPCA to reach an agreeable resolution. ARCADIS shall assume three (3) one hour meetings with two (2) attendees.

B.2.5 Periodic Field Visits
ARCADIS shall assume that periodic visits to site will be required to observe progress and assure compliance with the contract documents and design intent. ARCADIS shall assume a total of twelve (12) half day visits, each attended by one (1) representative.

ARCADIS shall make visits to the site at intervals appropriate to the various stages of construction as deemed necessary to monitor the Contractor’s work for compliance with the Contract Documents as outlined above. The visit may coincide with the progress meeting if the progress meeting is held on site. Such visits and observations are not intended to be exhaustive or to extend to every aspect of the work in progress, or to involve detailed inspections of the work beyond the responsibilities specifically assigned to ARCADIS in this scope of services and the Contract Documents, but rather are to be limited to spot checking, selective sampling and similar methods of general observation of the work based on ARCADIS’ exercise of professional judgment as assisted by the WPCA. Based on information obtained during such visits and such observations, and from the WPCA, ARCADIS shall determine in general if such work is proceeding in accordance with the Contract Documents and shall keep the WPCA informed of the progress of the work.

During the site visits, ARCADIS shall notify the WPCA if ARCADIS believes that work should be rejected because such work will not produce a completed Project that conforms generally to the Contract Documents or that it will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents.

ARCADIS shall coordinate with the Resident and review the Resident’s logs, notes and punch-lists as part of the site visits. ARCADIS shall assume a minimum of two (2) half day punch lists reviews.

B.2.6 Review of Submittals and Shop Drawings
ARCADIS shall review all shop drawing submittals prepared by the Contractor along with associated illustrations, samples, and other submittals required by the Contract Documents. ARCADIS shall assume 40 submittals require review.

ARCADIS shall review and respond to all submittals, shop drawings, samples within
fourteen (14) calendar days. ARCADIS shall coordinate and track submittals, including preparing and maintaining a submittal log, and ARCADIS will distribute the shop drawings and submittals. Copies of each submittal including subsequent revisions shall be provided to the WPCA.

**B.2.7 Respond to Requests for Information (RFI)**
ARCADIS shall respond to Requests for Information submitted by the contractor. ARCADIS shall assume 30 RFIs require response.

ARCADIS shall coordinate and track RFI's, including preparing and maintaining a RFI log. Copies of each RFI including responses and subsequent revisions shall be provided to the WPCA.

**B.2.8 Contractor Change Orders**
ARCADIS shall review contractor’s Change Orders and provide a recommendation to the WPCA as appropriate. ARCADIS shall assist the WPCA in the preparation of the final Change Order document, review and evaluate change orders proposed by the contractor and provide a response. ARCADIS shall assume 3 proposed change order reviews.

**B.2.9 Develop Requests for Proposal (RFP)**
ARCADIS shall assume that additional changes in the project scope will occur during construction that will require ARCADIS to develop a request with supporting information for the contractor to review and submit a proposal for. ARCADIS shall assume that 2 RFPs require development.

**B.2.10 Review Vendor Supplied Material**
ARCADIS shall review vendor supplied equipment operations and maintenance manuals, installation reports, and test and certification reports for conformance with the Contract Documents. ARCADIS shall assume the 5 reports require review.

**B.2.11 Applications for Payment**
The review and recommendation of approval of payment requisitions issued by the Contractor will generally be covered by the WPCA and Resident assigned to the project. However, ARCADIS shall provide assistance when requested for clarification or interpretations of the Contract Documents are necessary. In addition, ARCADIS shall review the Schedule of Values which serves as the basis for the Payment Applications when submitted by the Contractor.

**B.2.12 Support for the Development of Maintenance of Plant Operations (MOPOs) Plans**
ARCADIS shall support the Contractor in the development of detailed MOPOs that are required to complete this project. The contractor’s plans shall build from what has been provided in the contract documents and this support is meant to improve the process and ensure a successful tie-in or shutdown.
B.3 Startup Services

ARCADIS shall provide commissioning services during project startup as outlined below and take the lead role in planning, scheduling, and coordinating commissioning activities.

B.3.1 Commissioning Team Meetings

ARCADIS shall attend meetings with the WPCA, contractors, and any necessary vendors or equipment representatives to coordinate system and equipment startups. ARCADIS shall assume attending two (2) one hour meetings with two representatives of ARCADIS. ARCADIS shall facilitate the meetings, and ensure receipt and approval of all required documentation prior to commissioning (O&M manuals, trainer resumes, proposed lesson plans, etc.)

B.3.2 Field Support During Start-up

ARCADIS shall provide on-site personnel during equipment startups to provide assistance to the contractor and equipment vendors as needed and to confirm that equipment is performing as designed and expected. ARCADIS shall assume a minimum of four (4) one day site visits and ten (10) work days by one (1) ARCADIS for this task.

ARCADIS shall provide technical engineering support and on-site personnel for specific functional and performance testing that may be required by the Contract Documents to confirm that specified process systems are performing as designed and specified. This shall include providing assistance to the WPCA in coordination of required testing with the contractor, WPCA, and other agencies (as may be required). The work associated with this item shall include all the development of start-up plans, testing forms/documentation, scheduling, observing testing, compiling results, and other activities required by the Contract Documents. This work shall be provided as a separate sub-task for Field Support during Start-up.

B.4 Close Out

ARCADIS shall provide close out services for the project. This will include receiving, reviewing and transmitting to the WPCA with written comments maintenance and operating instructions, schedules, guarantees, certificates of inspection, tests and approvals, and marked-up record documents (including Shop Drawings, Samples and other approved data, and marked-up record Drawings) which are to be assembled by the Contractor in accordance with the Contract Documents to obtain final payment. ARCADIS shall prepare record drawings based on the marked-up documents provided by the Contractor. These services shall include the following:

B.4.1 Record Drawings

ARCADIS shall prepare record drawings that reflect as-built conditions based on information provided by the WPCA, the construction contractor, and ARCADIS' own on-site inspections. ARCADIS shall reconcile and log that all construction document changes (i.e., shop drawings, RFIs, Field Change Orders, etc.) have been incorporated into the record drawings. ARCADIS shall assume one week of full time effort by one (1)
ARCADIS employee for this task.

B.4.2 Substantial Completion
Following notice from the Contractor that the Contractor considers the entire work ready for its intended use, ARCADIS and the WPCA, accompanied by the Contractor, shall conduct an inspection to determine if the work is substantially complete. ARCADIS shall deliver a one-page certificate of Substantial Completion to the WPCA and Contractor after the resolution of any objections of the WPCA and ARCADIS and after it is mutually agreed upon by the WPCA and ARCADIS that the certificate of Substantial Completion shall be issued.

Before ARCADIS issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction (Punch list).

ARCADIS shall assume six days of full time effort by one (1) ARCADIS employee for this task.

B.4.3 Final Site Inspection
ARCADIS shall perform a final site inspection and walk-through of all the project areas with the WPCA, CM, Resident and Contractor to determine final completion status. ARCADIS shall prepare a final report and submit it to the WPCA for review and acceptance. ARCADIS shall assume one day of full time effort by one (1) ARCADIS employee for this task.

B.4.4 Close Out Meeting
ARCADIS shall attend a one hour close out meeting with the WPCA and construction contractor to officially close-out the project and to discuss warranty procedures. ARCADIS shall assume one (1) one hour meeting with one (1) ARCADIS attendee.

B.5 Resident Engineering Services
ARCADIS shall provide a Resident who is qualified to perform the required duties. The WPCA shall review and accept the representative ARCADIS proposes for this assignment. The Resident shall have current OSHA certification as required by the project and WPCA and shall obtain all required safety training required by the WPCA. The Resident shall be billed on an hourly rate basis, with a not to exceed cost established based on the anticipated construction duration. The purpose of the Resident will be to provide the WPCA a greater degree of confidence that the completed Work will conform generally to the Contract Documents and that the integrity of the design concept as reflected in the Contract Documents has been implemented and preserved by Contractor.

The Resident is ARCADIS' agent at the site, will act as directed by and under the supervision of ARCADIS and WPCA, and will confer with ARCADIS and WPCA regarding Resident's actions. Resident's dealings in matters pertaining to the on-site Work shall in general be with ARCADIS and Contractor, but keeping the WPCA advised.
as indicated below and as appropriate. Resident's dealings with subcontractors shall only be through or with the full knowledge and approval of Contractor, including their superintendent. Resident shall generally communicate with WPCA with the knowledge of and under the direction of ARCADIS.

**Part C – Optional Services**

**C.1 Optional Design Phase Services**

**C.1.1 Detailed Pump Station Hydraulic Modeling**

ARCADIS shall engage the services of a sub-consultant specializing in hydraulic modeling and analysis to review the wet well configuration and pumping system. The first step will be a desktop study that will provide feedback on the layout and operation of the pumping system. The proposed desktop study would include a review of the pump station history and performance, a site visit to observe pump performance and an analysis of the design drawings for the existing configuration. The existing design would be compared with the Hydraulic Institute (HI) standards for the design of pump stations to determine if any aspects of the forebay are non-standard. A desktop study is helpful in determining if there are any aspects of the design that impact the hydraulic performance and may be contributing to pump performance issues. However, non-compliance with HI guidelines does not necessarily indicate a problem. The HI standards allow for non-standard designs if they are investigated with a physical model to verify performance. A budget of $11,000 has been established for the desktop study.

Following the desktop study, the results will be reviewed with the WPCA and a decision will be made whether a physical model will be constructed. Physical models allow identification and analysis of problems associated with vortex formation or excessive swirl. The goal of the physical model will be to examine current wet well configuration to identify any issues which may impact pump operation. The model will also be utilized to examine changes proposed. A final report shall be submitted documenting all of the results and recommendations.

**C.1.2 Update to Collection System Model**

ARCADIS developed a hydraulic model of the Norwalk WPCF collection system in 2007 after completion of flow metering in 2005-2006. The Norwalk WPCA has indicated that they have completed improvements/repairs within the collection system, most notably the repair of a collapsed section of the 48 inch West Interceptor, and would like to update the hydraulic model to reflect these improvements. ARCADIS has included an allowance item to update key areas of the collection system model to reflect recently completed repairs.
C.2 Application Engineering Support Services (AESS)

If authorized by the WPCA, ARCADIS will contract with NIC Systems to complete the integration of the new pumps and VFDs into the existing PLC located in the Electrical Room. We do not anticipate any PLC logic modifications at this time, the pump station overall operation will remain unchanged. NIC Systems shall complete the following tasks:

1. Design Review: Review new VFD drawings for integration into existing SCADA System
2. Drawing Modifications: Revise control system electrical schematics and existing revise loop drawings.
3. PLC Program and SCADA Software Revisions: Work is limited to updating alarms, modifying trends, minor modifications to the graphic screens, report modifications and the installation of the SCADA revisions onsite.
4. Coordination Meetings: Attend two onsite meetings.
5. Loop Checks: Review installation with contractor
6. Installation Testing and Start-up: Be onsite for each pump start-up and confirm SCADA revisions.
7. Final Documentation: Provide updates to O&M and training on the revisions to the system.
Norwalk WPCA

Main Influent Pump and Related Equipment Replacement Project

Fee Tables
Norwalk Water Pollution Control Authority  
Main Influent Pump Replacement Project  

Summary of Engineering Fees

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>Type</th>
<th>ARCADIS</th>
<th>SUB</th>
<th>Total Budget</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Part A (A.1 thru A. 4)</td>
<td>Design Phase &amp; Bidding Services</td>
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<td>$ 8,800</td>
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<td>Construction Administration Services</td>
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<td>Includes $11K for Desktop Study</td>
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<td>Part C (C.1.2)</td>
<td>Update to Collection System Model</td>
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<td>Senior Engineer I</td>
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<td>Staff Engineer</td>
<td>Document Technician</td>
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<td>8.2.1 Project Management</td>
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<td>8</td>
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<td>48</td>
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<td>8.2.2 &amp; 3 Pre-Construction &amp; Progress Meetings</td>
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<td>48</td>
<td>18</td>
<td>158</td>
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<td>8.2.4 Issue Resolution Meetings</td>
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<td>16</td>
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<td>40</td>
<td>18</td>
<td>55</td>
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<td>8.2.5 Periodic field visits to observe progress</td>
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<td>40</td>
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<td>24</td>
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<td>8.2.6 Shop Drawing Review</td>
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<td>8.2.7 RFS</td>
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<td>8.2.8 Change Orders</td>
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<td>15</td>
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<td>48</td>
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<td>8.2.9 RFPs</td>
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<td>24</td>
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<td>32</td>
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<tr>
<td>8.2.10 Review of Vendor Supplied Material</td>
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<td></td>
<td></td>
<td>24</td>
<td>32</td>
<td>48</td>
</tr>
</tbody>
</table>

| Commissioning Services              | 16                  | 64                | 26               | 40                | 40            | 180                 | 0               | 180        | $34,090     |
| 8.3.1 Commissioning Meetings        | 4                   | 2                 |                  | 180               | 180           | 8                   | 4               | 8          | $1,038      |
| 8.3.2 Field support during start-up | 16                  | 60                | 24               | 40                | 40            | 180                 | 0               | 180        | $33,052     |

| Close Out                           | 0                   | 0                 | 30               | 40                | 40            | 180                 | 180             | 180        | $6,798      |
| 8.4.1 Prepare record drawings       | 8                   | 16                |                  | 24                | 16            | 4                   |                 | 32         | $3,432      |
| 8.4.2 Substantial Completion        | 16                  |                   | 16               | 4                 | 4             | 24                  | 2               | 24         | $2,448      |
| 8.4.3 Final Site Inspection         | 4                   |                   | 4                | 18                | 32            | 32                  | 2               | 32         | $612        |
| 8.4.4 Close Out Meeting             | 2                   |                   | 2                | 0                 | 2             | 0                   |                 | 2          | $306        |

| Resident Engineering Services       | 0                   | 1024              | 0                | 0                 | 0             | 0                   | 0               | 0          | $187,392    |
| 8.5 Resident Engineering Services   | 0                   | 1024              | 0                | 0                 | 0             | 0                   | 0               | 0          | $187,392    |

| TOTAL HOURS | 64 | 1,096 | 354 | 88 | 232 | 40 | 18 | 1,892 |
| TOTAL COST  | $14,720 | $200,568 | $54,162 | $20,240 | $32,016 | $4,720 | $2,376 | $328,802 |
City of Norwalk  
Water Pollution Control Authority

Beacon Street Interceptor Service Area Sewer System Rehabilitation  
Construction Change Order for Additional Sewer System Rehabilitation

The following is a description of additional sewer system rehabilitation needs, which are recommended for addition to the on-going Beacon Street Interceptor Service Area Sewer System Rehabilitation construction contract. Estimated construction costs are also indicated.

Completed additional sewer system rehabilitation work:

Catalpa Street Easement Emergency Lining
- Mobilization and bypass costs related to emergency cured-in-place pipe lining of 625 LF of sanitary sewer pipe
- Rehabilitate sanitary sewer pipe prior to Nathan Hale Field redevelopment work, in which prolonged use of heavy equipment would be occurring above the sanitary sewer pipe
- Total = $9,689

Saddle Road Area Smoke Testing
- Smoke testing of 21,147 LF of sanitary sewer pipe
- Investigation of stormwater overflow area to identify inflow sources
- Total = $10,150.56

Point Repair – William Street Easement
- One open-cut excavation point repair
- Excavate and replace portion of sanitary sewer pipe that could not be rehabilitated via trenchless repairs
- Total = $8,590.75

Point Repairs – Various Locations
- Six open-cut excavation point repairs
- Excavate and replace portion of sanitary sewer pipe that could not be rehabilitated via trenchless repairs
- Total = $39,368.50

Frances Street Storm Drain Repair
- Repaired separated stormwater pipe joint utilizing injection grouting and hydraulic cement
- Total = $4,550.00

Macintosh Road Sanitary Sewer Back-ups
- Investigation, mitigation, and clean-up of sanitary sewer back-ups at three houses on Macintosh Road
- Sanitary sewer back-ups could have occurred as a result of construction work, but were ultimately determined to not have been related to the contractor’s work
- Total = $8,459.00

Revised Rehabilitation
- Structural issues identified during pre-rehabilitation investigations required revisions to original design
- Total = $36,494.37

Additional sewer system rehabilitation work that needs to be completed:

Bypass Extension
- Extended sanitary sewer bypass set-up by 2,300 LF for cured-in-place pipe lining
- Bypass pipe route modification required by DPW to mitigate residential and vehicular impacts
- Total = $20,000.00
Permanent Pavement Restoration
- Permanent paving by City of Norwalk’s sub-contractor of eight road openings related to open-cut excavation point repairs and sanitary sewer bypass trenching.
- Total = $47,000.00

William Street Siphon
- Dewater siphon, install manhole at siphon low point, one point repair, 650 LF of cured-in-place pipe lining, reinstate service connections, and seal service connections
- Rehabilitate sanitary sewer siphon due structural, infiltration, and access issues
- Total = $88,000.00

Roodner Court
- 115 LF of cured-in-place pipe lining
- Rehabilitate sanitary sewer pipe that is structurally compromised and located under a construction site material stockpile
- Total = $4,000.00

Lockwood Lane
- Clean and televise pipe segment, grind protruding service connection, 1,200 LF of cured-in-place pipe lining, reinstate service connections, and seal service connections.
- Rehabilitate sanitary sewer pipe to mitigate confirmed indirect illicit discharges into the stormwater system
- Total = $68,500.00

Clara Drive
- Clean and televise pipe segment, grind protruding service connection, 175 LF of cured-in-place pipe lining, reinstate service connections, disconnect private lateral from abandoned sanitary sewer and reconnect to active line, cementitious monoline sanitary sewer manholes and stormwater catch basins, seal manhole chimneys, and abandon old sanitary sewer line and manholes.
- Rehabilitate pipe, manholes, and catch basins to mitigate confirmed direct and indirect illicit discharges into the stormwater system
- Total = $39,000.00

Birch Street and Walnut Avenue
- Cementitious monolining of one sanitary sewer and one stormwater manhole
- Rehabilitate manholes to mitigate confirmed indirect illicit discharges into the stormwater system
- Total = $4,000.00

Uniformed Police Officers
- Maintenance and protection of traffic via uniformed police officers during construction activities related to change order work
- Total = $26,500.00

Water
- Water to perform work related to rehabilitation of sanitary sewer and stormwater system related to change order work
- Total = $500.00

Mobilization/Demobilization
- Cost for the general and sub-contractors to remob- and demobilize for change order work
- Total = $10,000.00
The completed revised rehabilitation and change order work is as follows:

<table>
<thead>
<tr>
<th>Location &amp; Description of Work</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalpa Street Easement Emergency Lining</td>
<td>$9,689.00</td>
</tr>
<tr>
<td>Saddle Road Area Smoke Testing</td>
<td>$10,150.56</td>
</tr>
<tr>
<td>Point Repair – William Street Easement</td>
<td>$8,590.75</td>
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<tr>
<td>Point Repairs – Various Locations</td>
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<tr>
<td>Frances Street Storm Drain Repair</td>
<td>$4,550.00</td>
</tr>
<tr>
<td>Macintosh Road Sanitary Sewer Back-ups</td>
<td>$8,459.00</td>
</tr>
<tr>
<td>Revised Rehabilitation</td>
<td>$36,494.37</td>
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<td><strong>Total</strong></td>
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<tr>
<td>Original Contract Price</td>
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<tr>
<td>Previous Board Approved Change Order Amount (10% of contract price)</td>
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<tr>
<td>Previous Board Approved Change Order Amount Remaining</td>
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The cost to complete the remaining change order work and overall revised contract price is as follows:

<table>
<thead>
<tr>
<th>Location &amp; Description of Work</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bypass Extension</td>
<td>$20,000.00</td>
</tr>
<tr>
<td>Permanent Pavement Restoration</td>
<td>$47,000.00</td>
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<tr>
<td>William Street Siphon</td>
<td>$88,000.00</td>
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<tr>
<td>Roodner Court</td>
<td>$4,000.00</td>
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<tr>
<td>Lockwood Lane</td>
<td>$68,500.00</td>
</tr>
<tr>
<td>Clara Drive</td>
<td>$39,000.00</td>
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<tr>
<td>Birch Street and Walnut Avenue</td>
<td>$4,000.00</td>
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<tr>
<td>Uniformed Police Officers</td>
<td>$26,500.00</td>
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<tr>
<td>Water</td>
<td>$500.00</td>
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<tr>
<td>Mobilization/Demobilization</td>
<td>$10,000.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$307,500.00</strong></td>
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</table>

- Projected Change Order Total to Complete Contract: $307,500.00
- Projected Change Order Total to Complete Contract (w/ 10% contingency on remaining work): $338,250.00
- Projected Change Order Total to Complete Contract (less Remaining Previous Board Approved Change Order Amount): $280,728.18
- Requested Change Order Amount: $280,728.18
- Original Contract Price: $1,748,239.10
- Projected Contract Price with Change Orders (incl. Previous Board Approved Change Order Amount & Requested Change Order Amount with 10% contingency on remaining work): $2,203,791.28
1 Plant Activities

A Maintenance

MRR Repairs/Upgrades

- Replaced BFP incline belt drive motor.
- Cleared discharge pipe on grit pump #2.
- Replaced controller on primary sludge pump #2.
- Replaced belt on GBT #2.
- Cleaned and PMed aeration tank #5.
- Replaced coupling on GBT pump #2.
- Concrete cutting in aeration tank #5 completed.
- Replaced ATS in Secondary bldg.
- Cleaned plant water strainers.
- Replaced starter and alternator on portable generator.
- AJ Penna replaced 10' of 10" pipe at 8 Roosevelt St. due to an off set joint.

<table>
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<tr>
<th>Work orders</th>
<th>This Month</th>
<th>Last Month</th>
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<tbody>
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<td>219</td>
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<tr>
<td>Ending WO backlog</td>
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<td>996</td>
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B Violations

- Excursion - Reason
  - None

- Performance Guarantee
  - None

C Training

- Safety
  - Continues with Safety Training and Smith Driving, forward and Reverse. Associates continued with HAND"S on line training. Updated and conducted training on Work Control Plan, AHA's and pre-task planning.

- Other
  - Pump Station Safety evaluations completed.

2 Collection Systems

A Pump Stations

MRR Repairs/Upgrades

- Replaced comminutors at Old Trolley Way pump station.
- Connected portable emergency generator at Westport Ave. P.S.

B Collection System

- Spill / Overflow Reports
  - None
3 Personnel

A Number of Associates / Wastewater Operator Certifications

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<td>Operations</td>
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<td>Administration</td>
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<tr>
<td>Turnover</td>
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</table>

B Changes

None

4 Safety

OSHA Recordable Incidents

None

Lost Time Incidents

None

5 Total Nitrogen Performance

Avg. Influent Wastewater Temp. (°C) 21
Avg. BOD Loading (lbs./day) 17,696
Actual TN Performance (lbs./day) 650
Lookup Value (lbs./day) 791
Actual minus Lookup (lbs./day) -141
TN Performance Band EOR
Uncontrollable Circumstances None

Operational Review Findings

None

SOP Status

Inventory at targets.

6 Miscellaneous

Regulatory Inspections

None

Storm Flow Events

October 29th Heavy rain 2.5" On storm flow from 1:15 to 3 am.
1. Plant Operations
   A. Major Parameters

   - Monthly average BOD (mg/l)
   - Monthly average TSS (mg/l)
   - Monthly average Fecal (#/100 ml)
   - Monthly average TN (lbs/day)
   - 12-month Rolling average TN (lbs/day)
   - Monthly average Flow MGD
1) Collection System Data Management and Inspection
   (a) Cityworks data entry for September 2015 are reflected in attached tables
      (i) Production rate for CCTV for the month of August is 2.17 miles. Next month’s TV
          inspection efforts continue to focus on documenting known critical areas and sewer lines
          crossing streets on the 5-year paving list.
          1. Monthly rolling averages
             a. TV – 1.00 miles a month
             b. Cleaning – 5.81 miles a month
      (ii) Focused CCTV and Cleaning being performed on clay pipes in the system. The city is
           divided into 4 quadrants and current CCTV and cleaning effort focused on the Northwest
           quadrant. The crews perform the work in a sequence from upstream to downstream, with
           a priority on inspecting pipes that have not been CCTVed in the last three years. The SW
           quadrant will be the next focus, since the system is older and likely in more need of
           repair.
           1. Older clay pipes that haven’t been TV’d in over 3 years (NW Quadrant and currently
              Marvin Beach area)
           2. Sewer problem areas
           3. CCTV lines that intersect the paving list – 2 paving list received from the City:2015
              paving; 5-year paving list. Three areas remaining to be CCTV-ed on the 2015 paving
              list.
      (b) Hot spot list –
          (i) Final review of list has been completed and this layer is in GIS as of Nov 2014.
      (ii) Monthly work on hot spots are tracked/document separately for clarity.
      (c) Deformed pipe list
          (i) 61 out of 61 deformed pipe segments have been inspected and these pipes have been
               reviewed and rated based on LOF, COF and total risk.
      (d) Pipe condition downstream of PS forcemains
          (i) TV work completed for 18 PS and these pipes have been reviewed and rated based on
              LOF.
          (ii) Bouton Street PS done. 2 PS remaining – Fort Point and Perry Ave PS. CCTV to be
               performed when flows are low and will need police traffic protection.
      (e) Protruding laterals
          (i) Cutter has been used to remove protruding laterals as they are found
          (ii) 1 protruding laterals cut in the month of October.
      (f) Manhole raising
          (i) No manholes were identified to be raised in October.

2) Major Repair & Replacement Projects:
   (a) New Manholes - Bouton Street,
      (i) Bouton Street: DPW issued permit. Working with WPCA to determine manhole location.
   (b) Connecticut Avenue
      (i) Previous point repair fix required. The 8 inch repair coupling deformed due to concrete
          vault on top. The concrete vault contains utilities for Frontier communications, & CL&P.
      (ii) Penna has the required State permits to do the repair.
      (iii) Plan is to redirect the line, to move away from the vault for CL&P and Frontier
            communications. New manhole to be place. Waiting for City approval.
   (c) Pine Hill Ave Extension: Collapsed pipe found at 01-46 to 01-19. Waiting on quote from Penna.
   (d) Spring Hill Ave: Sink hole at Spring Hill Ave and Springview Ave. Offset joint. Waiting for quote from
       Penna.
   (e) Work Completed in October
      (i) Roosevelt St.: Point repair completed prior to paving.
   (f) Timothy St: We had a call-out for this street (sinkhole) and crews determined the sewer line needs
       repair. Waiting on evaluation from CH2M to get a quote.
2) WPCA Capital Improvement Projects (CIPs):

   (a) Beacon St Project
       (i) Minor lining work to be Amended
   (b) Bouton St and Ely Ave
       (i) This area will continue to be monitored for a potential new pump station
       (ii) OMI will continue to monitor on a monthly basis for any changes
   (c) Ann Street
       (i) Consider tying and alarm and elevation trend to SCADA through Aron Associates

3) Current Evaluations:

   (a) East Avenue (West Port Ave to Merrill)-- Wet weather issues-- OMI CCTV data Merrill @ East Ave -- state drainage tied to sanitary?
       (i) Maps prepared for the area. Specific manholes are being monitored for surcharge and flooding issues.
       (ii) Focused CCTV/manhole inspection along state road.
       (iii) CCTV in progress. Preliminary review show catch basin connection.
   (b) Locate all Pump Station Force mains. CH2M has contact contractors. WPCA delivered as-built information to CH2M. BSI provided an estimate in the six digits. Requested quote from Underground Surveying, and this is beyond their abilities.
   (c) 261 Ely Ave/Roodner Court - CCTV and identify why we had multiple spills from this location. The City’s line goes through an easement that includes a construction company that has a mound of soil on top of MH. Contractor removed the mound of soil and line CCTV-ed. Recommend lining pipe. Lining currently being scheduled.
   (d) 24 Isaac St. - Bypass reported on April 13th. CCTV performed. Cracks in the line and bad repair from previous fixes. CCTV tape being reviewed by CH2M HILL recommend replacement of 10-454 to 10-453 and 10-453 to 10-453.1. Point repair on 10-453.1 to 10-452 at 57 ft. where there is a large void. Currently on hold due to developer work.
   (e) Crescent Street -- CH2M is working with the City to locate and raise the manhole. This will help to clean and CCTV the segment (23-50 to 23-52). Without raising this manhole, the pipe segment is too long to clean. City has not been able to locate the manhole since it is believed to be over 3 feet deep. Penna located line 12 feet deep, directly under the Gas Main. Penna going to locate another buried manhole about 50’ + downstream off to the side of the road.
   (f) Clara Drive – CCTV of several segments completed. Lining of the south segment to be scheduled. Dye testing of north segment to verify lateral connections scheduled for this week. Only house #24 is connected to the north segment. WPCA working on disconnection of lateral.
   (g) Lockwood lane - Found some contamination in the storm line and this was traced back to Lockwood lane.
       (i) Point repair completed
       (ii) Lining of the pipe being scheduled
   (h) Riverside Ave. - Performed dye testing to evaluate the odor issues. Crews performed multiple test and no evidence of dye in river. Defects found in previous pipe repair. Penna to repair the hole in the manhole and crews to redo dye testing.
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## FOR 2016

### 22 WATER POLLUTION CONTROL

**040 PUBLIC WORKS**

#### 224062 WATER POLLUTION CONTROL

<table>
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<th>Item</th>
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<th>Transfers/Adjustments</th>
<th>Revised Budget</th>
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**TOTAL WATER POLLUTION CONTROL** | -15,424,589 | 0 | -15,424,589 | -15,155,472.56 | .00 | -269,116.44 | 98.3%    |

**TOTAL PUBLIC WORKS** | -15,424,589 | 0 | -15,424,589 | -15,155,472.56 | .00 | -269,116.44 | 98.3%    |

**TOTAL WATER POLLUTION CONTROL** | -15,424,589 | 0 | -15,424,589 | -15,155,472.56 | .00 | -269,116.44 | 98.3%    |

**TOTAL REVENUES** | -15,424,589 | 0 | -15,424,589 | -15,155,472.56 | .00 | -269,116.44 | 98.3%    |

**GRAND TOTAL** | -15,424,589 | 0 | -15,424,589 | -15,155,472.56 | .00 | -269,116.44 | 98.3%    |

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<td>3,556,115.59</td>
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<td>.00</td>
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<tr>
<td>224062 5298 OTHER CONTRACTUAL SERV</td>
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<td>514,459</td>
<td>82,782.05</td>
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<td>224062 5418 INSURANCE</td>
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<td>224062 5521 DEBT SERVICE PRINCIPAL</td>
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<td>5,615,515</td>
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<td>1,600,473.50</td>
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</table>

** TOTAL WATER POLLUTION CONTROL **
16,274,589 0 16,274,589 6,358,110.90 3,565,976.19 6,350,501.91 61.0%

** TOTAL PUBLIC WORKS **
16,274,589 0 16,274,589 6,358,110.90 3,565,976.19 6,350,501.91 61.0%

** TOTAL WATER POLLUTION CONTROL **
16,274,589 0 16,274,589 6,358,110.90 3,565,976.19 6,350,501.91 61.0%

** TOTAL EXPENSES **
16,274,589 0 16,274,589 6,358,110.90 3,565,976.19 6,350,501.91 61.0%

** GRAND TOTAL **
16,274,589 0 16,274,589 6,358,110.90 3,565,976.19 6,350,501.91 61.0%

** END OF REPORT - Generated by Dilene Byrd **
## City of Norwalk
### WATER POLLUTION CONTROL AUTHORITY
#### DRAFT FY 2016-17 Capital Budget Summary

### CAPITAL BUDGET

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Pump Station Upgrade/Replacement</td>
<td>$</td>
<td>$ 250,000</td>
<td>$ 250,000</td>
<td>$ 250,000</td>
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<td>WWTP Main Lift Pump Replacement</td>
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<td>Keeler Brook Pump Station Upgrade</td>
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<td>Ely Avenue &amp; Bouton Street Hydraulic Repair</td>
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<td>Collection System Rehabilitation</td>
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<td>Supplemental Treatment Upgrade</td>
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<td>WWTP Siphon Sluice Gates Rehabilitation</td>
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<td>Solids Handling Facility</td>
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| Total                                        | $ 6,000,000         | $ 4,500,000           | $ 5,250,000           | $ 4,000,000           | $ 1,250,000           | $ 1,250,000           |
### Meeting Schedule – Calendar Year 2016

**Public Works Center (Second Floor Conference Room), 15 South Smith Street**

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>January 11 (3rd Monday is Martin Luther King’s Day)</td>
</tr>
<tr>
<td>Monday</td>
<td>February 8 (3rd Monday is President’s Day)</td>
</tr>
<tr>
<td>Monday</td>
<td>March 21</td>
</tr>
<tr>
<td>Monday</td>
<td>April 18</td>
</tr>
<tr>
<td>Monday</td>
<td>May 16</td>
</tr>
<tr>
<td>Monday</td>
<td>June 20</td>
</tr>
<tr>
<td>Monday</td>
<td>July 18</td>
</tr>
<tr>
<td>Monday</td>
<td>August 15</td>
</tr>
<tr>
<td>Monday</td>
<td>September 19</td>
</tr>
<tr>
<td>Monday</td>
<td>October 17</td>
</tr>
<tr>
<td>Monday</td>
<td>November 21</td>
</tr>
<tr>
<td>Monday</td>
<td>December 19</td>
</tr>
</tbody>
</table>

\[l.o.c.l\]