AGENDA

DATE: Monday, September 19, 2016

TIME: 5:30 PM

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

WPCA Regular Meeting:

1. Call to Order

2. Executive Session to discuss ongoing litigation with Flowserve about main lift pumps' failure and sewage overflow findings by Connecticut Fund For the Environment

3. Approve the minutes from WPCA Meeting held on July 18, 2016 (copy included)

4. Approve the Director of Public Work's recommendation for a nitrogen credit sharing of 25 percent for 10 months to OMI, Inc. in the amount of $73,297. (copy included)

Account No. 224062-5258

5. Contract Operations Report:
   a. OMI Monthly Operating Report – July and August 2016 (copy included)
      1) August 21st/22nd Storm Event
   b. NACWA Silver Peak Performance Award (copy included)
   c. Update on Final Settling Tanks Short Term Modifications
   d. Discussion on Aeration Tank Blowers

6. Reports:
   a. FY15/16 & FY16/17 Revenues/Expenditures MUNIS Reports (copies included)
   b. WPCA Response to EPA's 308 Request (copy included)
   c. Discussion on WPCA Projects:
      1) Main Lift Pump Replacement Project Update
      2) Collection System Improvements – Basis of Design (copy included)
      3) Solids Handling, Aeration Improvements, and Odor Control Evaluation (copy included)
      4) Pump Station Projects – Generator Evaluation (copy included)
   d. Walk Bridge Program Update
   e. Public Works, Fire, and Police Open House – October 1st
   f. Sewer Use Bill Appeals/Adjustments Update
      1) Appeal status
   g. Information Copies:
      1) Notice of Sale of Equivalent Nitrogen Credits (copy included)
      2) Contract Operations Status – Annual Inspection Report (letter included)

7. Adjournment

Next WPCA Meeting: Monday, October 17, 2016
5:30 PM
Second Floor Conference Room, Public Works Center
15 South Smith Street
CITY OF NORWALK
WATER POLLUTION CONTROL AUTHORITY
July 18, 2016

Attendance:  Darren Oustafine, Chairman
              Lewis Clark, Vice Chairman
              Mayor Rilling
              Dave McCarthy
              John Igneni
              John Flynn
              Greg Burnett
              Bruce Kimmel

Staff:       Bruce Chimento, Public Works Director
              Ralph Kolb, DPW Senior Environmental Engineer

Others:     John Ahern, CH2MHiIl, OMI, Inc.
            Paola Molloy, CH2MHiIl, OMI, Inc.
            Tim Pamer
            Mike Oravaz

1. CALL TO ORDER

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

2. ELECTION OF OFFICERS AND SECRETARY

** MR. MCCARTHY MOVED NOMINATE THE CURRENT THE SLATE OF OFFICERS AND SECRETARY

** MOTION PASSED UNANIMOUSLY

3. APPROVE THE MINUTES FROM WPCA MEETING HELD ON JUNE 20, 2016 (COPY INCLUDED)

** MR. IGNERI MOVED TO APPROVE THE MINUTES

** MOTION PASSED

** TWO ABSTENTIONS- MAYOR RILLING AND MR. KIMMEL
4. CONTRACT OPERATIONS REPORT:

a. OMI Monthly Operating Report- June 2016 (copy included)

Mr. Ahern reported on the plant activities and said that on June 1, 2016, DPW had broken a sewer line causing a 1000 gallon spill, and that on June 8, 2016, there was a 20 gallon spill on 11 Deepwood Lane, and that the line was flushed and cleared. He reported on personnel and said that a temporary collections worker has been hired. He reported on collections system status report and said that the production rate for CCTV is 0.3 miles and that the monthly rolling average for televising is 1.14 miles a month, and for cleaning is 4.72 miles a month. He reported on the major repair and replacement projects and that nitrogen fell into band "D". Mr. Clark asked how the existing main lift pumps are operating. Mr. Ahern said that there are currently no issues, and that five of the pumps are operating and that one pump is out. He said that the contractor is in the process of pouring the concrete bases for the new pump. Mr. Kolb said that all the new pumps will be installed in approximately five to six weeks.

b. Odor Complaints- Wall Street-Knight Street area (copy included)

Mr. Kolb said that smoke testing was done and found that the side of the wall of the catch basin is allowing some odors to escape and that he will be scheduling the Public Works construction crew to perform a repair to try and retain the odor. Mr. Chimento said that there are other projects in the Landmark Square area in the near future that will separate some of the combined systems. Mr. Flynn asked when a main line is cleaned what happens to the sludge. Mr. Ahern said it is brought back to the Wastewater Treatment Plant for disposal.

5. REPORTS

a. FY 15/16 Revenues/Expenditures MUNIS Report (copy included)

Mr. Kolb reported and said that everything is tracking as expected with the exception of septage, and that $375,000 was anticipated for revenues and that the revenues are approximately $314,000.

b. Discussion of Final Settling Tanks (copy included)

Mr. Kolb said that he received an e-mail from Mr. Pramer stating his concerns regarding the Wastewater Treatment Plant. Mr. Kolb said that on July 5, 2016, that there was approximately one inch of rain and during that time frame there were some issues with the final settling tanks. Mr. Ahern discussed the issues and reported on the immediate and long term repairs that will occur. He said that ARCADIS will be evaluating the final settling tanks and that the repairs that are currently being done will be sufficient. Mr. Kolb said that the final settling tanks are approximately 20 years old, and that the concrete tanks are solid but the steel components are the issue, and that there is a fabricator on site that will be assisting with the temporary repairs. Mr. Oravaz said that he does not know why the beds were shut down for .75 inches of rain and that normally the Wastewater Treatment Plant would have been able to handle that flow if not for the mechanical problem. He said that the beds were closed for ten days and that income was lost. Mr. Cusstafine said that during a substantial rain event the beds would have been shut down anyway and asked when that is. Mr. Kolb said that the beds are shut down base on rainfall totals with some bed closures at 0.5 inches and all bed closures at 1.5 inches of rain. Mr. Kimmel asked if the beds were shut down as a result of an issue at the Wastewater Treatment Plant. Mr. Kolb said he does not know because Aquaculture shuts
the beds down and he is not notified of the closures. Mayor Rilling asked if the WPCA staff is notified if the closure of the beds is a direct result of the Wastewater Treatment plant. Mr. Chimento said “no”. Mayor Rilling requested that the WPCA be notified anytime the beds are shut down. Mr. McCarthy said there needs to be a plan in place for the long term repair and will need to understand both the budgetary and impact perspective on how it gets repaired. Mr. Kolb said that is why ARCADIS will be doing a thorough assessment of each tank and will establish estimated costs which will be submitted as part of next years capital budget request. Mayor Rilling asked if there will be a complaint filed against the WPCA from DEEP. Mr. Kolb said that there have been communications between OMI and DEEP. Mr. Ahern said that they are satisfied with the course of action that was taken and with the future plan for the repair. Mayor Rilling asked if the plan will result in some relief to the oyster industry. Mr. Ahern said “yes” absolutely.

Mr. Pramer said that he is very concerned about the Wastewater Treatment Plant because Norwalk is developing at a very rapid rate, and that he does not feel that sufficient monies are being invested back into the infrastructure to compensate for this rapid expansion. Mayor Rilling said that based on all the information that he has received, and the questions that he has asked the Wastewater Treatment Plant is capable of handling significantly more flow than what is currently being handled, so the development projects that are going on currently will have no impact on the Wastewater Treatment Plant. Mr. Ahern said that the Wastewater Treatment Plant is designed for 18 MGD and it currently averages 13 MGD and can go up to 30 MGD with full treatment. He said that anything over 30 MGD to 95 MGD the Wastewater Treatment Plant would go on stormflow. He said that after 30 MGD flow is bypassed from the full process and is sent to drum screens for additional screening, chlorinated and then out to the river which is DEEP approved. Mr. Ahern recommended that Mr. Pramer and Mr. Oravaz contact him to schedule a tour of the Wastewater Treatment Plant. Mayor Rilling asked if anyone from the oyster industry or Harbor Management has ever been on a tour. Mr. Ahern said not since he has been on board. Mr. Kolb said prior to Mr. Ahern coming on board that the local Health Department and Aquaculture took a tour of the facility, and recently Harbor Watch was invited to take a tour. Mayor Rilling said that he thinks the education process is very important and wants to be sure to minimize any impact on the harbor and sound.


Mr. Kolb said that last month the annual inspection report was presented and that Mr. Flynn had reached out to him with some comments regarding ARCADIS and that he spoke to him prior to the meeting. He said that if anyone else has any comments on the report to email them to him.

d. EPA Inspection Report

Mr. Kolb said that on June 30, 2016, representatives from EPA, Harbor Watch, DPW and WPCA staff went out and sampled coven stormwater outfalls for various parameters to determine if there is any sewage getting into the stormwater system. He said he is still waiting to receive the results.

e. Walk Bridge Program Update

Mr. Kolb said that last month there was an item tabled on the WPCA agenda for entering into contracts with Lochner, and it has been decided that it would be better to go through the City of Norwalk rather than the WPCA. He said that it will address any infrastructure needs. Mr. Oustafine asked if the project is 100%
reimbursable. Mr. Kolb said “yes” and that there is already an agreement in place with the City and the State of Connecticut for reimbursement.

f. Discussion on WPCA Projects:

1) Main Lift Pump Replacement Project

Mr. Kolb said that in the next few weeks the first main lift pump will be started and operable, and that it will take approximately six weeks to install each of the pumps.

g. Sewer Use Bill Appeals/Adjustments to date

1) Appeal Status

Mr. Kolb said that the appeals to date are $5,639

h. Information Copies:

1) CTDEEP Routine Site Inspection Report (copy included)

Mr. Kolb said that the DEEP had conducted a routine site inspection earlier this year, and that there were a few items that they asked for additional information on and that it was provided to them. He said that the report was good.

6. EXECUTIVE SESSION TO DISCUSS ONGOING LITIGATION AND FLOWSERVE ABOUT MAIN LIFT PUMPS’ FAILURE.

There was no executive session held.

7. ADJOURNMENT

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

The meeting adjourned at 6:35 PM

Respectfully Submitted,

Dilene Byrd
April 21, 2016

Mr. Ralph Kolb, P.E.
Sr. Environmental Engineer
Norwalk Water Pollution Control Authority
15 South Smith St
Norwalk, CT 06855

Subject: 2015 Norwalk Nitrogen Credit Performance Report

Dear Mr. Kolb,

In accordance with Amendment 2 of the Agreement, CH2M has prepared an annual summary report for 2015 Norwalk Nitrogen Credit Performance comparing actual performance and predicted performance using the Total Nitrogen Lookup Table.

Table 1 on page 5 shows significant operational data to support the overall performance. Following is a monthly breakdown detailing the plant's nitrogen removal performance.

**JANUARY 2015**
- **Performance Result:** Band D
- **Uncontrollable Circumstances:** None
- **Operational Review Findings:** All equipment online
- **SOP Status:** All SOPs were followed
- **Summary of Findings:**
  Nitrogen removal performance exceeded the predicted lookup value under conditions where the average monthly flow was 13.3 MGD and the influent temperature was 13°C. Good operational control contributed to the increased removal.

**FEBRUARY 2015**
- **Performance Result:** Band D
- **Uncontrollable Circumstances:** None
- **Operational Review Findings:** All equipment online
- **SOP Status:** All SOPs were followed
- **Summary of Findings:**
  Nitrogen removal performance exceeded the predicted lookup value under conditions where the average monthly flow was 11.0 MGD and the influent temperature was 12°C. Good operational control contributed to the increased removal.
MARCH 2015

- Performance Result: Band D
- Uncontrollable Circumstances: None
- Operational Review Findings: All equipment online
- SOP Status: All SOPs were followed
- Summary of Findings:
  Nitrogen removal performance exceeded the predicted lookup value where the average monthly flow was 16.7 MGD and the influent temperature was 11°C. Good operational control contributed to the increased removal.

APRIL 2015

- Performance Result: Band D
- Uncontrollable Circumstances: None
- Operational Review Findings: All equipment online
- SOP Status: All SOPs were followed
- Summary of Findings:
  Nitrogen removal performance exceeded the predicted lookup value where the average monthly flow was 14.2 MGD and the influent temperature was 13°C. Good operational control contributed to the increased removal.

MAY 2015

- Performance Result: Band D
- Uncontrollable Circumstances: None
- Operational Review Findings: All equipment online
- SOP Status: All SOPs were followed
- Summary of Findings:
  Nitrogen removal performance exceeded the predicted lookup value where the average monthly flow was 12.3 MGD and the influent temperature was 18°C. Good operational control and warmer weather contributed to the increased removal.

JUNE 2015

- Performance Result: Band D
- Uncontrollable Circumstances: None
- Operational Review Findings: All equipment online
- SOP Status: All SOPs were followed
- Summary of Findings:
  Nitrogen removal performance exceeded the predicted lookup value where the average monthly was 12.8 MGD and the influent temperature was 20°C. Good operational control and warmer weather contributed to the increased removal.

JULY 2015

- Performance Result: Band D
- Uncontrollable Circumstances: None
- Operational Review Findings: All equipment online
- SOP Status: All SOPs were followed
- Summary of Findings:
  Nitrogen removal performance exceeded the predicted lookup value where the average monthly was 12.0 MGD and the influent temperature was 22°C. Good operational control and warmer weather contributed to the increased removal.
AUGUST 2015
• Performance Result: Band EOR
• Uncontrollable Circumstances: None
• Operational Review Findings: All equipment online
• SOP Status: All SOPs were followed
• Summary of Findings:
  • Nitrogen removal performance fell into the Expected Operating Range during warmer weather.

SEPTEMBER 2015
• Performance Result: Band D
• Uncontrollable Circumstances: None
• Operational Review Findings: All equipment online
• SOP Status: All SOPs were followed
• Summary of Findings:
  • Nitrogen removal performance exceeded the predicted lookup value where the average monthly was 11.0 MGD and the influent temperature was 24°C. Good operational control and warmer weather contributed to the increased removal.

OCTOBER 2015
• Performance Result: Band EOR
• Uncontrollable Circumstances: None
• Operational Review Findings: All equipment online
• SOP Status: All SOPs were followed
• Summary of Findings:
  • Nitrogen removal performance fell into the Expected Operating Range.

NOVEMBER 2015
• Performance Result: Band D
• Uncontrollable Circumstances: None
• Operational Review Findings: All equipment online
• SOP Status: All SOPs were followed
• Summary of Findings:
  • Nitrogen removal performance exceeded the predicted lookup value where the average monthly was 11.3 MGD and the influent temperature was 19°C. Good operational control contributed to the increased removal.

DECEMBER 2015
• Performance Result: Band D
• Uncontrollable Circumstances: None
• Operational Review Findings: All equipment online
• SOP Status: All SOPs were followed
• Summary of Findings:
  Nitrogen removal performance exceeded the predicted lookup value where the average monthly flow was 12.7 MGD and the influent temperature was 17°C. Good operational control contributed to the increased removal.

In summary, during 2015, CH2M managed to keep the process in Band D for ten months out of the year and two months in the Expected Operating Range.
In accordance with Amendment 2, CH2M is requesting nitrogen credit revenue sharing at 25% for the 10 months in which the total nitrogen performance fell into management Band D equal to $73,297. The Norwalk WPCA received $351,824 from CTDEEP for 2015.

Sincerely,

[Signature]

John Ahern
CH2M Project Manager

CC: Lisa Burns – Operations Manager, City of Norwalk
    Kevin Dahl – Regional Business Manager
1 Plant Activities

A Maintenance

MRR Repairs/Upgrades
Tested motors for blowers 1 and 4. Both motors are no good. Replaced rubber and skimming arm supports in FST#2. Removed broken skimmer arm in FST4. Repaired air line in Aeration tank 5. Performed a PM of Aeration tank #5. Replaced plant water valve and added new hose connection in Supplemental Bldg. Installed new safety gates on FST’s and De-chlor tank. Replaced storm pumps and float system. Installed temp sight tube, level indicator on Hypo tank. Replaced second incline screw for BFP. Cleaned FST #1. Repaired scum trough on FST #1. Cleared blockage in hypo line. Modified septage receiving area to provide better access for cleaning. ABB replaced effluent flow meter and RAS pump #5 meter.

Work orders | MC # of WOs completed
Ending WO backlog
This Month 1164 406
Last Month 1084 383

B Violations

Permit Monthly

Excursion - Reason

Performance Guarantee
Aeration tank 5 was being filled at the time of the FC collection Sediment was stirred up in the CCT resulting in an excursion 210 Daily Max is 100, Permit daily max 400

C Training

Safety
Continued with HANDS on line training
Updated and conducted training on Work Control Plan, AHA’s and pre-task planning

Other
Fork lift Training July for Operators

2 Collection Systems

A Pump Stations

MRR Repairs/Upgrades
Rebuilt #2 motor at Karen Drive Pump Station.
Cleaned wet well at Shady Beach Pump Station
Started up new grinder at Bethel Street Pump Station

B Collection System

Spill / Overflow Reports
7-5, 42,500 gal spill at plant Troughs 1 and 4 collapsed. 20,000 into river, cleaned up 22,500 gal. 7-26, 718 gal. spill Ely Ave. Roots in the li line. Collections crew cut the roots.

C Collections Repairs
No Major repairs to report this month
### Personnel

#### A Number of Associates / Wastewater Operator Certifications

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<tr>
<th>Total Personnel</th>
<th>24</th>
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<tr>
<td>Operations</td>
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#### B Changes

APM Paola Molloy received Grade 1 License from Ct. DEEP

#### 4 Safety

- OSHA Recordable Incidents: None
- Lost Time Incidents: None

### 5 Total Nitrogen Performance

| Avg. Influent Wastewater Temp. (°C) | 23 |
| Avg. BOD Loading (lbs./day)         | 16,838 |
| Actual TN Performance (lbs./day)    | 506 |
| Lookup Value (lbs./day)             | 746 |
| Actual minus Lookup (lbs./day)      | -240 |
| TN Performance Band                 | D |
| Uncontrollable Circumstances        | None |
| Operational Review Findings         | None |
| SOP Status                          | None |
| Summary of Findings                 | Inventory at targets. |

#### Description of Ranges/Bands

- **Expected Operating Range**
  - **Band A**: aTN between 1 to 175 lbs./day less than LV
  - **Band B**: aTN between LV and up to 117 lbs./day in excess of LV
  - **Band C**: aTN between 118 and 234 lbs./day in excess of LV
  - **Band D**: aTN greater than 234 lbs./day in excess of LV
  - aTN 176 lbs./day less than LV

### 6 Miscellaneous

- **Regulatory Inspections**: None
- **Storm Flow Events**: None
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 Plant Activities

A Maintenance

MRR Repairs/Upgrades

<table>
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<th>Work orders</th>
<th>MC # of NOS completed</th>
<th>Ending WO backlog</th>
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<td>This Month</td>
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<td>157</td>
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B Violations

Permit Monthly
8-5 CL2 Excursion hourly 6.21. Hourly max 0.5 overdosed while maintenance was working on pump. 8-5 CL2 Excursion Daily ave. 0.51. Daily limit CL2 0.07

Performance Guarantee
Monthly average FC Excursion 20 Performance guarantee FC10
Warm temps and break point chlorination all month

C Training

Safety
CH2m internal Safety Audit
Updated with HANDS on line training
Updated and conducted training on Work Control Plan, AHA's and pre-task planning

Other
Excavation training conducted for collections staff.

2 Collection Systems

A Pump Stations

MRR Repairs/Upgrades
Replaced sump pump at Devils Garden. Replaced sump pump check valve and unclogged pumps at Shady Beach. Replaced generator exhaust louver motor and rewired controller at Five Mile

B Collection System

Spill / Overflow Reports
8-5 Camp St 7500 gal spill AJ Penna repaired line
8-16 Ferris Ave, 225 gal spill Penna replaced section of 8" pipe
8-22 Ann St Syphon. MLP #6 and #4 failed. Undetermined amount
8-28 42 Bouton St. 3848 gal spill. Cleared grease blockage
8-29 1 Gregory Blvd. 25 gal spill. Private grinder pump

C Collection Repairs

Camp St. 26' of clay pipe was replaced with PVC. and 20' was replaced with PVC and one lateral was reconnected
Ferris Ave had 28' of 8" clay pipe replaced with PVC
All work was done by AJ Penna
3 Personnel

A Number of Associates / Wastewater Operator Certifications

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</table>

B Changes

Maintenance Manager Dale Schmude received his Grade 1 license from CT DEEP.

4 Safety

OSHA Recordable Incidents

Lost Time Incidents

None

5 Total Nitrogen Performance

Avg. Influent Wastewater Temp. (°C) 24
Avg. BOD Loading (lbs./day) 18,894
Actual TN Performance (lbs./day) 472
Lookup Value (lbs./day) 767
Actual minus Lookup (lbs./day) -295
TN Performance Band D
Uncontrollable Circumstances None
Operational Review Findings None
SOP Status

Summary of Findings

Inventory at targets.

6 Miscellaneous

Regulatory Inspections None

Storm Flow Events None
1. Plant Operations
   A. Major Parameters

   ![Monthly average BOD (mg/l)]
   ![Monthly average TSS (mg/l)]
   ![Monthly average Fecal (H/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 August 2016 are reflected in attached tables
       (i) Production rate for CCTV for the month of August is 0.4 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 – 1.10 miles a month
              b. Cleaning – 4.24 miles a month
       (ii) Focus on CCTV and Cleaning priorities
           1. Older clay pipes that haven’t been TV’d in over 3 years
           2. Sewer problem areas
           3. CCTV lines that intersect the paving list – Received the 5-year paving list from the City. CCTV in progress for 2016 paving list. See attached maps for paving list details.
   (b) Hot spot list
       (i) Some hotspots that have not shown signs of debris build up will be added to a watch list and potentially phased out
   (c) Pipe condition downstream of PS forcemains
       (i) 1 PS remaining – Perry Ave PS. Need low flow and traffic control to perform.
   (d) Protruding laterals
       (i) No protruding laterals cut in the month of August.
   (e) Manhole raising
       (i) No manholes were identified to be raised in August.

2) Major Repair & Replacement Projects:
   (a) 25 Camp St: Sewerage was entering the storm line. Replaced 26 feet of 20-inch clay pipe to fix the bad repair done previously.
   (b) 84 Ferries Ave: Sewerage was entering the storm line. Replaced 28 feet of 8-inch clay pipe to fix the broken pipe.

3) WPCA Capital Improvement Projects (CIPs):
   (a) Task Order 1: Basis of Design
       (i) Task is 50% complete
       (ii) Next work item is to complete borings near Marvin Beach PS

4) Current Evaluations:
   (a) New items this month:
       (i) No new items
   (j) Carry over from previous month:
       (i) East Avenue (West Port Ave to Merrill) – Wet weather issues – OMI CCTV data Merrill & East Ave – state drainage tied to sanitary. CCTV of side roads is complete. CCTV results show catch basin connection.
       (ii) Crescent Street – CCTV to be conducted to verify potential extraneous flow shown in metering
       (iii) Potential cross connection – storm into sanitary in a 54 inch near imax theater, south of siphon chamber on Washington Street. Still being investigated.
       (iv) Glover Ave: CCTV Seir hill Rd area to be conducted to determine if there are illicit connections into the sewer system
The National Association of Clean Water Agencies is pleased to present this award to

City of Norwalk Water Pollution Control Authority, CT
Norwalk Water Pollution Control Facility

in recognition of its complete and consistent permit compliance during the calendar year. 2015

Adam Krantz, NACWA Chief Executive Officer
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<thead>
<tr>
<th>WATER POLLUTION CONTROL</th>
<th>040 PUBLIC WORKS</th>
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<tr>
<td>ORIGINAL APPROP</td>
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<td>224062 4051 SEWER CHARGE INTEREST</td>
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<td>224062 4121 NITROGEN CREDIT TRADE</td>
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<td>224062 4513 SEWER USE CHARGES</td>
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<td>224062 4516 SEPTIC DISPOSAL FEE</td>
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<td>224062 4901 INVESTMENT INCOME</td>
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</table>

TOTAL WATER POLLUTION CONTROL | -15,424,589 | 0 | -15,424,589 | -16,521,261.78 | .00 | 1,096,672.78 | 107.1% |
TOTAL PUBLIC WORKS | -15,424,589 | 0 | -15,424,589 | -16,521,261.78 | .00 | 1,096,672.78 | 107.1% |
TOTAL WATER POLLUTION CONTROL | -15,424,589 | 0 | -15,424,589 | -16,521,261.78 | .00 | 1,096,672.78 | 107.1% |
TOTAL REVENUES | -15,424,589 | 0 | -15,424,589 | -16,521,261.78 | .00 | 1,096,672.78 | 107.1% |
GRAND TOTAL | -15,424,589 | 0 | -15,424,589 | -16,521,261.78 | .00 | 1,096,672.78 | 107.1% |
### 22 WATER POLLUTION CONTROL

#### 040 PUBLIC WORKS

<table>
<thead>
<tr>
<th>224062 WATER POLLUTION CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>224062 S110 WAGES &amp; SALARY-REGULAR</td>
</tr>
<tr>
<td>224062 S120 WAGES &amp; SALARY-OVERTIM</td>
</tr>
<tr>
<td>224062 S140 WAGES &amp; SALARY-PART TI</td>
</tr>
<tr>
<td>224062 S150 LONGEVITY</td>
</tr>
<tr>
<td>224062 S235 MEMBERSHIPS &amp; DUES</td>
</tr>
<tr>
<td>224062 S241 ELECTRIC</td>
</tr>
<tr>
<td>224062 S245 TELEPHONE</td>
</tr>
<tr>
<td>224062 S252 LEGAL SERVICES</td>
</tr>
<tr>
<td>224062 S258 OMI AGREEMENT</td>
</tr>
<tr>
<td>224062 S280 BUSINESS EXPENSE</td>
</tr>
<tr>
<td>224062 S295 SEMINAR&amp;CONFERENCE FEE</td>
</tr>
<tr>
<td>224062 S298 OTHER CONTRACTJL SERV</td>
</tr>
<tr>
<td>224062 S332 MOTOR VEHICLE PARTS</td>
</tr>
<tr>
<td>224062 S418 INSURANCE</td>
</tr>
<tr>
<td>224062 S428 EMPLOYEE BENEFITS</td>
</tr>
<tr>
<td>224062 S429 EMPLOYEE BENEFIT NON W</td>
</tr>
<tr>
<td>224062 S463 NITROGEN CREDITS</td>
</tr>
<tr>
<td>224062 S521 DEBT SERVICE PRINCIPAL</td>
</tr>
<tr>
<td>224062 S522 DEBT SERVICE INTEREST</td>
</tr>
<tr>
<td>224062 S551 REIMBURSE G/F FOR PAYR</td>
</tr>
<tr>
<td>224062 S571 IT HARDWARE</td>
</tr>
<tr>
<td>224062 S789 REPAIR REPLACEMENT RES</td>
</tr>
</tbody>
</table>

** TOTAL WATER POLLUTION CONTROL ** 16,274,589 | 0 | 16,274,589 | 15,087,252.71 | .00 | 1,187,336.29 | 92.7%  
** TOTAL PUBLIC WORKS ** 16,274,589 | 0 | 16,274,589 | 15,087,252.71 | .00 | 1,187,336.29 | 92.7%  
** TOTAL WATER POLLUTION CONTROL ** 16,274,589 | 0 | 16,274,589 | 15,087,252.71 | .00 | 1,187,336.29 | 92.7%  
** TOTAL EXPENSES ** 16,274,589 | 0 | 16,274,589 | 15,087,252.71 | .00 | 1,187,336.29 | 92.7%  
** GRAND TOTAL ** 16,274,589 | 0 | 16,274,589 | 15,087,252.71 | .00 | 1,187,336.29 | 92.7%  

** END OF REPORT - Generated by Dilene Byrd **
### 22 WATER POLLUTION CONTROL

#### 040 PUBLIC WORKS

<table>
<thead>
<tr>
<th>ITEM DESCRIPTION</th>
<th>ORIGINAL APPROP</th>
<th>TRANSFERS/ADJUSTMENTS</th>
<th>REVISED BUDGET</th>
<th>YTD EXPENDED</th>
<th>ENC/REQ</th>
<th>AVAILABLE BUDGET</th>
<th>PCT USED</th>
</tr>
</thead>
<tbody>
<tr>
<td>224062 4051 SEWER CHARGE INTEREST</td>
<td>-65,000</td>
<td>0</td>
<td>-65,000</td>
<td>-22,893.86</td>
<td>.00</td>
<td>-42,106.14</td>
<td>35.2%</td>
</tr>
<tr>
<td>224062 4221 NITROGEN CREDIT TRADING</td>
<td>-351,824</td>
<td>0</td>
<td>-351,824</td>
<td>-351,824.00</td>
<td>.00</td>
<td>-351,824.00</td>
<td>100.0%</td>
</tr>
<tr>
<td>224062 4451 SEWER PERMITS</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>.00</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>224062 4453 SEPTIC LICENSE</td>
<td>-1,500</td>
<td>0</td>
<td>-1,500</td>
<td>.00</td>
<td>.00</td>
<td>-1,500.00</td>
<td>100.0%</td>
</tr>
<tr>
<td>224062 4513 SEWER USE CHARGES</td>
<td>-14,316,300</td>
<td>0</td>
<td>-14,316,300</td>
<td>-15,327,686.00</td>
<td>.00</td>
<td>-15,327,686.00</td>
<td>105.0%</td>
</tr>
<tr>
<td>224062 4516 SEPTIC DISPOSAL FEE</td>
<td>-325,000</td>
<td>0</td>
<td>-325,000</td>
<td>-38,750.00</td>
<td>.00</td>
<td>-286,250.00</td>
<td>11.9%</td>
</tr>
<tr>
<td>224062 4521 SEWER USE CHARGES-WILT WASTE</td>
<td>-490,000</td>
<td>0</td>
<td>-490,000</td>
<td>.00</td>
<td>.00</td>
<td>-490,000.00</td>
<td>0%</td>
</tr>
<tr>
<td>224062 4522 SEWER USE CHARGES-OUT</td>
<td>-55,000</td>
<td>0</td>
<td>-55,000</td>
<td>-54,063.00</td>
<td>.00</td>
<td>-54,063.00</td>
<td>98.3%</td>
</tr>
<tr>
<td>224062 452C INDUSTRIAL PRETREATMENT</td>
<td>-220,000</td>
<td>0</td>
<td>-220,000</td>
<td>-214,050.00</td>
<td>.00</td>
<td>-5,950.00</td>
<td>97.3%</td>
</tr>
<tr>
<td>224062 452D SEWER CONNECTION FEES</td>
<td>-100,000</td>
<td>0</td>
<td>-100,000</td>
<td>-3,260.00</td>
<td>.00</td>
<td>-96,740.00</td>
<td>3.3%</td>
</tr>
<tr>
<td>224062 452E INDUSTRIAL PRETREATMENT CHARGES</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-756.83</td>
<td>.00</td>
<td>-756.83</td>
<td>100.0%</td>
</tr>
<tr>
<td>224062 489F EXPENDITURE REIMBURSEMENT</td>
<td>-430,741</td>
<td>0</td>
<td>-430,741</td>
<td>.00</td>
<td>.00</td>
<td>-430,741.00</td>
<td>0%</td>
</tr>
<tr>
<td>224062 4901 INVESTMENT INCOME</td>
<td>-100,000</td>
<td>0</td>
<td>-100,000</td>
<td>-13,741.00</td>
<td>.00</td>
<td>-86,259.00</td>
<td>13.7%</td>
</tr>
</tbody>
</table>

**TOTAL WATER POLLUTION CONTROL** | -16,655,365 | 0 | -16,655,365 | -16,027,874.69 | .00 | -627,490.31 | 96.2% |

**TOTAL PUBLIC WORKS** | -16,655,365 | 0 | -16,655,365 | -16,027,874.69 | .00 | -627,490.31 | 96.2% |

**TOTAL WATER POLLUTION CONTROL** | -16,655,365 | 0 | -16,655,365 | -16,027,874.69 | .00 | -627,490.31 | 96.2% |

**TOTAL REVENUES** | -16,655,365 | 0 | -16,655,365 | -16,027,874.69 | .00 | -627,490.31 | 96.2% |

**GRAND TOTAL** | -16,655,365 | 0 | -16,655,365 | -16,027,874.69 | .00 | -627,490.31 | 96.2% |

**END OF REPORT - Generated by Dilene Byrd**
### FOR 2017 99

<table>
<thead>
<tr>
<th>ORIGINAL APPROP</th>
<th>TRANFRS/ ADJSTMTS</th>
<th>REVISED BUDGET</th>
<th>YTD EXPENDED</th>
<th>ENC/REQ</th>
<th>AVAILABLE BUDGET</th>
<th>PCT USED</th>
</tr>
</thead>
</table>

#### 22 WATER POLLUTION CONTROL

**040 PUBLIC WORKS**

| 224062 5130 WAGES & SALARY-REGULAR | 361,372 | 0 | 361,372 | 68,049.51 | .00 | 293,222.49 | 18.8% |
| 224062 5120 WAGES & SALARY-OVERTIM | 10,000 | 0 | 10,000 | 65.21 | .00 | 9,934.79 | 7% |
| 224062 5140 WAGES & SALARY-PART-TI | 0 | 0 | 0 | 4,252.82 | .00 | -4,252.82 | 100.0% |
| 224062 5130 LONGEVITY | 975 | 0 | 975 | .00 | .00 | 975.00 | .0% |
| 224062 5235 MEMBERSHIPS & DUES | 10,000 | 0 | 10,000 | .00 | .00 | 10,000.00 | 0% |
| 224062 5241 ELECTRIC | 1,412,700 | 0 | 1,412,700 | 109,239.62 | .00 | 1,303,460.38 | 7.7% |
| 224062 5245 TELEPHONE | 24,000 | 0 | 24,000 | 387.73 | .00 | 23,612.27 | 1.6% |
| 224062 5252 LEGAL SERVICES | 200,000 | 0 | 200,000 | 2,285.00 | .00 | 197,715.00 | 1.1% |
| 224062 5258 OMI AGREEMENT | 5,597,910 | 0 | 5,597,910 | 449,818.79 | 4,448,089.32 | 700,001.89 | 87.5% |
| 224062 5276 PURCHASE OF UNIFORMS/C | 0 | 0 | 0 | 82.48 | .00 | -82.48 | 100.0% |
| 224062 5286 BUSINESS EXPENSE | 20,000 | 0 | 20,000 | 1,459.95 | .00 | 18,540.05 | 7.3% |
| 224062 5295 SEMINAR&CONFERENCE FEE | 6,000 | 0 | 6,000 | 1,080.40 | .00 | 4,919.60 | 16.0% |
| 224062 5298 OTHER CONTRACTUAL SERV | 200,000 | 0 | 200,000 | 2,091.00 | 7,909.00 | 190,000.00 | 5.0% |
| 224062 5418 INSURANCE | 223,622 | 0 | 223,622 | .00 | .00 | 223,622.00 | 0% |
| 224062 5428 EMPLOYEE BENEFITS | 192,611 | 0 | 192,611 | 27,685.00 | .00 | 164,926.00 | 14.4% |
| 224062 5521 DEBT SERVICE PRINCIPAL | 4,542,428 | 0 | 4,542,428 | 4,355,318.81 | .00 | 187,109.19 | 95.9% |
| 224062 5522 DEBT SERVICE INTEREST | 841,133 | 0 | 841,133 | 2,387.02 | .00 | 838,745.98 | 3% |
| 224062 5651 REIMBURSE C/F FOR PAYR | 576,171 | 0 | 576,171 | .00 | .00 | 576,171.00 | 0% |
| 224062 5741 IT HARDWARE | 20,000 | 0 | 20,000 | 2,250.00 | .00 | 17,750.00 | 11.3% |
| 224062 5777 WPCA CAPITAL CONSTRUCT | 0 | 0 | 0 | -140,353.63 | .00 | 140,353.63 | 100.0% |
| 224062 5789 REPAIR REPLACEMENT RES | 3,266,443 | 0 | 3,266,443 | .00 | .00 | 3,266,443.00 | 0% |

**TOTAL WATER POLLUTION CONTROL**

| 17,505,365 | 0 | 17,505,365 | 4,886,099.71 | 4,455,998.32 | 8,163,266.97 | 53.4% |

**TOTAL PUBLIC WORKS**

| 17,505,365 | 0 | 17,505,365 | 4,886,099.71 | 4,455,998.32 | 8,163,266.97 | 53.4% |

**TOTAL WATER POLLUTION CONTROL**

| 17,505,365 | 0 | 17,505,365 | 4,886,099.71 | 4,455,998.32 | 8,163,266.97 | 53.4% |

**TOTAL EXPENSES**

| 17,505,365 | 0 | 17,505,365 | 4,886,099.71 | 4,455,998.32 | 8,163,266.97 | 53.4% |

**GRAND TOTAL**

| 17,505,365 | 0 | 17,505,365 | 4,886,099.71 | 4,455,998.32 | 8,163,266.97 | 53.4% |

-- END OF REPORT - Generated by Dileene Byrd --
August 5, 2016

VIA FEDERAL EXPRESS AND ELECTRONIC MAIL

Mr. John Melcher, P.E.
Mail Code: OES04-1
US EPA, Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

RE: Section 308 Response (EPA Docket No. CWA-308-R01-FY16-59)

Dear Mr. Melcher:

Enclosed please find the response of the Water Pollution Control Authority of the City of Norwalk, Connecticut (the “WPCA”) to the May 3, 2016, information request pursuant to the Clean Water Act § 308(a); 33 U.S.C. § 1318(a). Due to its voluminous nature, the attachments referenced within the response are available in the enclosed compact disc. Paper copies will be provided if requested. The WPCA provides the enclosed responses in compliance with the federal Clean Water Act but the responses are not, in any way, an admission of any violation of our National Pollution Discharge Elimination System permit, the Clean Water Act itself, or any other applicable environmental statutes or regulations.

Norwalk WPCA will continue to cooperate with the Environmental Protection Agency in achieving our common goal: protection of the waters of the United States. Norwalk is committed to maximizing its operations to provide the most effective collection and treatment for its users and to protect and enhance the water quality of the Norwalk River and the Long Island Sound.

Sincerely,

Ralph K. Kolb, P.E.
Sr. Environmental Engineer

Copy: Ann Straut, CT DEEP
John Ahern, CH2M OMI
Bruce Chimento, City of Norwalk w/out attachments
WPCA Board of Directors w/out attachments
Attachment D

Statement of Certification

Complete and Include With Your Response

I declare under penalty of perjury that I am authorized to respond on behalf of the City of Norwalk. I certify that the foregoing responses and information submitted were prepared by me, or under my direction or supervision and that I have personal knowledge of all matters set forth in the responses and the accompanying information. I certify that the responses are true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

By __________________________
(Signature)

Ralph K. Kolb
(Printed)

Sr. Environmental Engineer
(Title)

8/5/2016
(Date)
EPA 308 Request Responses

Question/Request #1: Submit copies of all Bypass Report Forms and Bypass Notification Logs submitted to CT DEEP between October 1, 2010, and the date of receipt of this Request.

Response: A list of all bypasses submitted to Connecticut DEEP (“CT DEEP”) along with the bypass report forms and notification logs are included in Attachment 1. It should be noted that the federal Clean Water Act (“CWA”) defines a “bypass” as an “intentional diversion of waste streams from any portion of a treatment facility” (40 CFR 122.41(m)(1)). Although CT DEEP titles its forms, “By-Pass Report Form” and the term “bypass” has been used within this response, and in subsequent responses, use of the term does not constitute an admission by Norwalk of intentional diversion of waste streams as defined by the Clean Water Act or other similar statutes.

Question/Request #2: During the Environmental Protection Agency’s (“EPA”) inspection on November 12-14, 2015 (“EPA Inspection”), the City of Norwalk (the “City”) provided a list of service calls received at its call center between January 6, 2010, and September 8, 2015 (refer to Attachment A, Appendix 12). At least 14 entries from this list (described as “SEWER-BACKUP,” “SSO_BYPASS,” “LATERAL BACK UP,” or “OMI-MISC”) do not appear in the bypass information previously provided by CT DEEP to EPA. For each item in Table I, below, submit a brief description of the event, state whether the event is a Collection System Bypass (as defined in Section 22a-430-3 of the Regulations of the Connecticut State Agencies ["RSCA"]), and the date (if any) on which the event was reported to CT DEEP.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Address</th>
<th>Date Initiated</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEWER-BACKUP</td>
<td>35 Pine Point Rd.</td>
<td>03/29/2015</td>
<td>Bypass</td>
</tr>
<tr>
<td>SEWER-BACKUP</td>
<td>35 Pine Point Rd.</td>
<td>03/27/2015</td>
<td>Bypass</td>
</tr>
<tr>
<td>SEWER-BACK UP</td>
<td>1 Macintosh Rd.</td>
<td>03/17/2015</td>
<td>Bypass</td>
</tr>
<tr>
<td>SEWER-BACK UP</td>
<td>261 Ely Ave.</td>
<td>03/17/2015</td>
<td>Bypass</td>
</tr>
<tr>
<td>SEWER-BACKUP</td>
<td>14 Westport Ave.</td>
<td>03/15/2015</td>
<td>Bypass</td>
</tr>
<tr>
<td>SEWER-BACKUP</td>
<td>228 Fillow St.</td>
<td>02/19/2015</td>
<td>Bypass</td>
</tr>
<tr>
<td>SEWER-BACKUP</td>
<td>2 Oak St.</td>
<td>07/23/2014</td>
<td>Bypass</td>
</tr>
<tr>
<td>SEWER-BACKUP</td>
<td>26 Loundsbury Ave.</td>
<td>05/21/2014</td>
<td>Bypass</td>
</tr>
<tr>
<td>SEWER-BACK UP</td>
<td>261 Ely Ave.</td>
<td>12/26/2013</td>
<td>Bypass</td>
</tr>
<tr>
<td>SSO_BYPASS</td>
<td>38 Bouton St.</td>
<td>08/12/2013</td>
<td>Bypass</td>
</tr>
<tr>
<td>SSO_BYPASS</td>
<td>16 Washington St.</td>
<td>06/04/2012</td>
<td>Bypass</td>
</tr>
<tr>
<td>SEWER-BACK UP</td>
<td>345 Main Ave.</td>
<td>02/08/2012</td>
<td>Bypass</td>
</tr>
<tr>
<td>LATERAL BACK UP</td>
<td>188 South Main St.</td>
<td>05/25/2011</td>
<td>Bypass</td>
</tr>
<tr>
<td>SSO_BYPASS</td>
<td>3 Ryan Ave.</td>
<td>04/19/2011</td>
<td>Bypass</td>
</tr>
</tbody>
</table>

1 Attachments are numbered to correspond to individual questions. For example, Attachment 8 corresponds to Question 8 and there is no Attachment 7.

2 Norwalk has repeatedly requested that CT DEEP change its terminology and refrain from using the term “bypass” to describe events other than those that actually constitute a bypass as defined by the CWA. Norwalk has raised this issue in its submissions for renewal of its NPDES permit and on other occasions since 2005.
Response: A description of the event, its respective resolution, and the date on which it was reported to the CT DEEP are included in Attachment 2. Four of the 14 events were not reported to the CT DEEP because, upon investigation, the collection team’s documentation of the event found no evidence of a spill. Descriptions of these events are also included in Attachment 2.

**Question/Request #3:** Submit a spreadsheet presenting influent and wet-weather flows for each event during which the City has discharged from Outfall 002-1 of its Water Pollution Control Facility (“WPCF”) between January 1, 2013, and the date of receipt of this Request. Include the following information in this spreadsheet:

- Time at which the City began discharging from Outfall 002-1;
- Time at which the City ceased discharging from Outfall 002-1;
- Influent flow at 10-minute intervals; and
- Flow to Outfall 002-1 at 10-minute intervals (concurrent with influent flow).

Response: A spreadsheet that includes influent and wet-weather flows for each event during which the City discharged from Outfall 002-1 of its Water Pollution Control Facility (“WPCF”) between January 1, 2013, and the date of receipt of this Request are included in Attachment 3.

**Question/Request #4:** Submit a description of the adjustments made to controls (including the storm weir gate) directing flow to WPCF Outfall 002-1 since the EPA Inspection.

Response: After the visit from EPA in November 2015, the storm overflow weir gate was raised 15 inches. This was done to ensure that at least 30 MGD go through full treatment during storm events. The weir gate was adjusted during a rainstorm on February 3, 2016 and as a result, there was no discharge from outfall 002-1, as shown below. The weir gate continues to be carefully monitored and as of August 4, 2016, has not required adjustment.

<table>
<thead>
<tr>
<th>Time</th>
<th>Plant Influent (MGD)</th>
<th>Outfall 001-1 (MGD)</th>
<th>Outfall 002-1 (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17:16</td>
<td>28.56</td>
<td>30.27</td>
<td>0.0</td>
</tr>
<tr>
<td>17:31</td>
<td>28.87</td>
<td>31.32</td>
<td>0.0</td>
</tr>
<tr>
<td>17:45</td>
<td>29.57</td>
<td>31.61</td>
<td>0.0</td>
</tr>
<tr>
<td>18:00</td>
<td>29.95</td>
<td>31.65</td>
<td>0.0</td>
</tr>
<tr>
<td>18:14</td>
<td>30.81</td>
<td>32.04</td>
<td>0.0</td>
</tr>
<tr>
<td>18:29</td>
<td>29.89</td>
<td>31.89</td>
<td>0.0</td>
</tr>
<tr>
<td>18:43</td>
<td>30.03</td>
<td>32.03</td>
<td>0.0</td>
</tr>
<tr>
<td>19:01</td>
<td>29.90</td>
<td>31.71</td>
<td>0.0</td>
</tr>
<tr>
<td>19:15</td>
<td>29.99</td>
<td>31.74</td>
<td>0.0</td>
</tr>
<tr>
<td>19:30</td>
<td>29.83</td>
<td>31.92</td>
<td>0.0</td>
</tr>
<tr>
<td>19:44</td>
<td>29.87</td>
<td>31.78</td>
<td>0.0</td>
</tr>
<tr>
<td>19:59</td>
<td>29.71</td>
<td>31.65</td>
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</tr>
<tr>
<td>20:16</td>
<td>29.60</td>
<td>31.68</td>
<td>0.0</td>
</tr>
<tr>
<td>Time</td>
<td>Temp</td>
<td>Flow</td>
<td>Chlorine</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td>------</td>
<td>----------</td>
</tr>
<tr>
<td>20:31</td>
<td>29.01</td>
<td>31.35</td>
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<tr>
<td>20:45</td>
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<td>0.0</td>
</tr>
<tr>
<td>21:14</td>
<td>26.70</td>
<td>29.06</td>
<td>0.0</td>
</tr>
<tr>
<td>21:29</td>
<td>25.29</td>
<td>27.49</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Question/Request #5:** Section 4(F) of the City's National Pollutant Discharge Elimination System ("NPDES") permit, as reissued on March 24, 2014 ("POTW Permit"), states the following:

*No discharge shall cause acute or chronic toxicity in the receiving water body beyond any zone of influence specifically allocated to that discharge in this permit.*

Information submitted to CT DEEP in the City’s Monthly Operating Reports indicates that residual chlorine in the City's discharges may result in acute toxicity in receiving waters when the City is discharging from WPCF Outfall 002-1.

Submit an analysis of the extent to which the City's discharges from WPCF Outfall 002-1 comply with Section 4(F) of the City's POTW permit. At a minimum, the City's analysis shall include a calculation of the concentration, allowing for the zone of influence, of Total Residual Chlorine for each event between January 1, 2011, and the date of receipt of this Request during which the City discharged from WPCF Outfall 002-1.

For this analysis, the City shall use the Aquatic Life Criteria in saltwaters provided in Section 22a-426-9(a)(3) of the Regulations of the Connecticut State Agencies ("RSCA") as a standard for toxicity.

**Response:** The City requests clarification or additional information to complete the requested toxicity analysis, which includes a calculation of the concentration of Total Residual Chlorine for each event beginning January 1, 2011 for discharges from WPCF Outfall 002-1, allowing for the zone of influence ("ZOI"). Please clarify the ZOI that should be applied. The only ZOI listed in the NPDES permit is in Table A for Outfall 001-1 of 250.8 cfs. There is no ZOI listed in Table A-1 for Outfall 002-1. If the ZOI from Table A is to be used in the requested analysis, please clarify the applicability of this ZOI and confirm that it takes into account increased wet weather river flows. Note that Outfall 002-1 is only permitted to discharge during overflow events of excess combined sewer wastewater generated from wet weather events. If the ZOI from Table A is not to be used, please provide the appropriate ZOI for the analysis. If necessary, the City can provide contact information for its technical consultant to help resolve this clarification with a technical representative from EPA.

**Question/Request #6:** Section 9(A)(5)(c) of the POTW Permit states the following:

*Combined discharges from 001-1 and 002-1 shall not cause violations of State Water Quality Standards.*
Information submitted to CT DEEP in the City’s Monthly Operating Reports indicates that fecal coliform and enterococci bacteria in the City’s discharges may result in exceedances of State Water Quality Standards when the City is discharging from WPCF Outfall 002-1.

Submit an analysis of the extent to which the City’s discharges from WPCF Outfall 002-1 comply with Section 9(A)(5)(c) of the City’s POTW permit. At a minimum, the City’s analysis shall include a calculation of the concentration, mathematically combining the discharges from WPCF Outfalls 001-1 and 002-1, of fecal coliform bacteria and Enterococci bacteria for each event between January 1, 2011, and the date of receipt of this Request during which the City discharged from WPCF Outfall 002-1.

For this analysis, the City shall use the Indicator Bacteria in saltwaters provided in Section 22a-426-9(a)(2) of the RSCA as a standard.

**Response:** The City requests clarification for the procedure of mathematically combining the discharges from WPCF Outfalls 001-1 and 002-01, of fecal coliform bacteria and Enterococci bacteria for each event starting January 1, 2011 which the City discharged from WPCF Outfall 002-1. Specifically, averaging coliform and bacteria results from the same day is standard when the results are from the same sample point. In this case, the results are from two separate sample points. Please clarify and explain the method for mathematically combining the results for the bacterium specified. If necessary, the City can provide contact information for its technical consultant to help resolve this clarification with personnel from EPA.

**Question/Request #5:** The City’s Facilities Plan (dated October 7, 2009, and prepared by CDM, Inc.), states that the existing microscreens no longer provide adequate and reliable treatment of wet weather flow and are in need of repair. The 2009 Facilities Plan further states that two microscreens had been permanently taken out of service. During the EPA Inspection, EPA observed that two microscreens remained out of service and that another microscreen had a large (approximately one-foot diameter) hole in the screens. Arcadis’ Performance Evaluation Report for the period of May 1, 2014, through April 30, 2015 (“Arcadis 2015 Report”), states that capital improvements were planned for the Supplemental Treatment Facility for FY2015-16. The Capital Budget Summary provided by the City during the EPA Inspection (included here as Attachment A, Appendix 13) states that, in FY 2014-15 and FY 2016-17, a total of $2,500,000 was allocated to Supplemental Treatment Upgrades.

**Response:** Immediately following EPA’s inspection in November of 2015, Norwalk had the hole in the microscreen repaired. The existing screens continue to operate to provide additional screening on the wet weather flows for those events, which occur infrequently during the year. In January of 2016, the City’s Water Pollution Control Authority (“WPCA”) entered into an agreement with Arcadis U.S. Inc. (“Arcadis”) for On-Call Engineering Services related to planning, design and construction administration of capital improvements related to the wastewater treatment plant. The WPCA has requested a wet weather treatment improvement scope from Arcadis to evaluate alternatives and technologies that meet the state and federal definition of “microscreening.” In addition, the WPCA has asked Arcadis to review potential or anticipated NPDES permit modifications or changes to discharge requirements based upon a Total Maximum Daily Load (“TMDL”) Plus program that may be implemented by CT DEEP. This information would be used to develop alternatives and a conceptual design report.
**Question/Request #8:** Section 9(A)(9) of the POTW Permit states the following:

*The permittee shall reduce excessive infiltration/inflow to the sewer system.*

Submit an assessment of the amount of infiltration/inflow (“I/I”) present in the City’s Collection System using the criteria provided in EPA’s guidance document, “I/I Analysis and Project Certification,” attached as Attachment E.

**Response:** One of the City’s primary goals for its WPCF is to improve the quality of discharges into adjacent receiving waters. To best achieve this goal, the City, with approval from CT DEEP most recently in 2009, agreed that it would continue to operate a combined sewer system and construct additional capacity at the facility to treat wet weather and extraneous flows. Advancing this strategy, the City’s preliminary treatment facility went online in March 2012. The facility is capable of treating peak flows of up to 95 MGD (while the typical dry weather flow is 13 MGD). This strategy furthers our goal of improving the quality of discharges from the WPCF into the receiving waters.

In addition, the City continues to remove sources of inflow and infiltration (“I/I”) within its system when they are found. On-going sewer inspections make note of high infiltration in pipes and manholes. These areas are then added to the capital list and prioritized for improvements. The City also targets direct stormwater connections in an effort to separate sewer and stormwater where feasible.

In 2011, the field crews identified a localized capacity issue within the Beacon Street Interceptor Service Area. The WPCA contracted with Arcadis to conduct an Infiltration/Inflow investigation, review and evaluate the information, develop a design to rehabilitate the area, and provide bidding phase services, construction administrative and resident engineer services, and as-built record drawings. All project rehabilitation was completed in early 2016 and closeout documents are currently being prepared for final closeout later this year. Additional information and documents on the Beacon Street Project is provided under Question #10.3

To respond to this request, an analysis of I/I was conducted using data from the City-wide collection system serving approximately 80% of the population of Norwalk. Attachment 8 contains the following data:

- Rainfall data along with Norwalk’s WWTP daily totalized flow data plotted against each other, as shown in the chart included in Attachment 8;
- Flow data from commercial and industrial users greater than 50,000 gpd;
- The number of equivalent dwelling units;
- Number of residential, accessory and condo/apartments sewered; and
- The total sewer population.

This analysis uses the months of April through June 2015, which correspond to the period of seasonal high groundwater.

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3 Prior to 2011, the City completed a number of projects that have significantly reduced I/I into the Collection System. Additional information on these projects can be provided on request.
Infiltration:
The plant daily flow time series was analyzed during seasonal high groundwater months where it had not
rained. The USGS Gage in nearby locations (Newtown and Greenwich) showed that April through June
were high groundwater months. The contributions from major industrial and commercial sources (i.e.,
flows larger than 50,000 gpd) were subtracted from the total dry weather inflows to isolate the domestic
and infiltration portions. Finally, the flows were normalized by population to determine the dry weather
flows per capita day in gallons (i.e., gpcd). The results for three different periods of high groundwater
and no rain are presented in the table included in Attachment 8.

Inflow:
The plant flows were analyzed on days where rainfall occurred during the same seasonal high
groundwater months. The industrial and commercial flows were again removed, followed by
normalization to population. The results for two specific rain events in April and May 2015 as well as the
larger period from April through June 2015 where daily rainfall depths exceeded 0.5 inches are presented
in the table included in Attachment 8.

The City, along with its consultants, will continue to actively monitor and address I/I within its system.

**Question/Request #9:** Submit all available updates of the City’s Sanitary Sewer Collection System
Master Plan, dated December 2009, prepared by Malcolm Pirnie, Inc.

**Response:** In 2013, the WPCA signed a Fourth Contract Amendment with OMI to provide Collection
System program Manager Services. Under that contract, CH2M provides Collection System
Management services to Norwalk to support the goals and strategies of the Collection System Master
Plan.

CH2M’s efforts support workflow documentation and reporting processes for various operation and
maintenance tasks (“O&M”) performed in the collection system. Collection system workflows and
processes are documented in the O&M manual. An underlying goal of this effort is to utilize data
captured from O&M inspection to feed collection system rehabilitation efforts. Following collection and
analysis of the data, TV inspection and cleaning efforts are directed to priority sewers. Data from
inspections also generates recommendations for rehabilitation efforts within the collection system,
including, repairs to structural deficiencies, reducing extraneous flows, improving system reliability, and
preventing future deficiencies. A copy of the contract is included in Attachment 9.

**Question/Request #10:** Submit all available Sanitary Sewer Evaluation Studies and I/I Control Plans
prepared since December 2009.

**Response:** Included in Attachment 10 are the following sanitary sewer evaluation studies and I/I projects
and proposed work since December 2009:

- Correspondence from Arcadis Sewer Rehabilitation Planning and Design (December 11, 2011)
  - Appendix A - Smoke Testing Report (November 2011)
Notice Of Smoke Testing (October 27, 2011)
- Appendix B - Manhole Inspection Report (November 2011)
- Appendix C - Dye Water Testing Report (January 2012)
- Appendix D - Dye Water Flood Report (January 2012)
- Ely Avenue Sewer - Surcharge Abatement Study (June 30, 2015)
- CH2M’s Task Order No. 1 - Basis of Design for System Wide Collection System Improvements

**Question/Request #11**: The Collection System Projects Table provided by the City during the FPA Inspection (included here as Attachment A, Appendix 15) states that, in FY 2016-17, the “Sanitary Sewer Rehabilitation (Various Priority)” and “Marvin Beach PS FM Replacement Project” projects are planned. Submit a description of these projects and an explanation as to why these projects do not appear in the Capital Budget Summary.

**Response**: The WPCA has entered into agreement (February 9, 2016) with CH2M Engineers, Inc. (“CH2M”) for On-Call Engineering Services related to planning, design and construction administration of capital improvements related to the collection system. Project descriptions from CH2M’s Task Order No. 1 are presented below and a copy is included in Attachment 10. The projects were not specifically listed in the WPCA’s 5-yr Capital Budget, but would be covered under “Collection System Rehabilitation.” As of July 1, 2016, the WPCA will have available ~$3 million for collection system improvement projects, $1 million for engineering services with CH2M, and $1 million allocated to the Ely Avenue & Bouton Street Hydraulic Repair.

**Various Priority Sewer Improvements**: CH2M will review the inspection data, including television inspection, manhole inspections and field investigations to prioritize and develop recommendations for the required sewer improvements. CH2M will develop summaries of each area that describes the location, sewer configuration, sewer issues, and recommended repairs. Attachment A shows all of the sewers defined by one or more of these categories. These will be used to decipher the recommended quantities of each repair methodology and discuss criticality of collection system deficiencies. CH2M will also conduct site visits to critical areas to review constructability of proposed recommendations, including traffic control requirement, laydown areas, access concerns, and permitting requirements.

In addition, CH2M will review the television inspection of deformed sewers, sewers downstream of pump station foreclosures and sewer hot spots, defined as sewers requiring routine cleaning to maintain operability, to develop rehabilitation recommendations for these various sewer priorities. All of these pipes along with sewers associated with reoccurring overflow issues unrelated to capacity will be analyzed and considered for repair. New information gathered during design will be incorporated based on criticality of the issues discovered.

**Marvin Beach Foremain**: CH2M will analyze rehabilitation and replacement technologies for the Marvin Beach Foremain. Marvin Beach Pump Station is located at River Drive and Alden Avenue; the 520-foot long, 8-inch foremain extends from the pump station to 5th Street, crossing under a tidal flat then through Hawkins Avenue.
Recent forcemain breaks in 2013, 2014 and 2015 have occurred and been repaired by replacing small pipe sections.

CH2M will analyze rehabilitation and replacement technologies to repair the entire forcemain and mitigate forcemain breaks. As part of this process, CH2M will hire a boring subcontractor to conduct geotechnical investigations. Up to 3 borings will be conducted. Required lab analysis will be conducted on the borings to determine if trenchless technologies can be employed on the segment under the tidal flat. Lab testing may include rock cores, sieve analysis, hydrometer, atterberg limits, water content, organic content and corrosivity (PH, sulfate, chlorides and resistivity). CH2M will review and analyze the subsurface information and lab results to develop and document recommendations. Anticipated costs for the boring contractor and lab analysis is $10,000 including $1,500 to for potential traffic control requirements.

In soils, 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. Because of the inherent uncertainties in subsurface evaluations, changed or unanticipated underground conditions may occur that could affect total project cost and execution.

**Question/Request #12:** The Capital Budget Summary states that during FY 2015-16 and FY 2016-17, no money is provided for general Collection System Rehabilitation. In FY 2017-18, the entire Collection System Rehabilitation budget of $1 million appears to be consumed by a single project, the East Avenue Interceptor Capacity Restoration Project. Submit a description of how the City will fund other Collection System capital expenditures deemed necessary as problems are found during on-going inspections.

**Response:** Included in Attachment 12 is the FY 2016-17 Approved WPCA Capital Budget Summary. This budget is slightly different than the FY 2015-16 budget previously provided to EPA.

As discussed in Question #11, on July 1, 2016, the WPCA will have available ~$3 million for collection system improvement projects, $1 million for engineering services with CH2M, and $1 million allocated to the Ely Avenue and Bouton Street Hydraulic Repair. The WPCA staff will be requesting $1 million in FY17/18 for “Collection System Rehabilitation” and additional capital requests in future years. In total, the WPCA will have roughly $6 million earmarked for engineering and projects associated with general Collection System Rehabilitation.

The WPCA has authorized CH2M to proceed with Task Order No. 1 for the Development of a Basis of Design for Marvin Beach forcemain replacement, East Avenue Interceptor capacity improvements, and various priority sewer rehabilitation improvements. Following completion of this task, the WPCA plans to have CH2M enter into design, prepare contract drawings and specification for bidding, advertise and receive bids, and enter into construction contracts.

Sanitary sewer emergency repair work is addressed through the System Service Agreement between OMI and the WPCA. The System Service Agreement required OMI to establish an interest-bearing Major Repair or Replacement account for Collection System and Wastewater Treatment Facility and Pump
Stations. These accounts are funded annually and for Contract Year 17 a total of $449,245 will be added to the Collection/WWTP account and $78,618 into the Pump Station MRR account. OMI retains a subcontractor for the repair of any non-capital sanitary sewer using funds out of the Collection/WWTP MRR account.

**Question/Request #13:** CT DEEP's database of reported bypasses includes five unauthorized discharges in 2014 caused by mechanical or electrical equipment failure at Trolley Way Pump Station. The Arcadis 2015 Report indicates that the Trolley Way Pump Station is in fair to poor condition. The Arcadis 2015 Report indicates that under wet-weather conditions, both pumps are needed to manage the flow to the pump stations, leaving no redundancy in case of a pump failure. Submit a description of the City's plans to prevent future unauthorized discharges caused by failures at the Trolley Way Pump Station.

**Response:** In 2014, the Old Trolley Way pump station experienced multiple electrical failures. The electrical failures were due to malfunction of electrical equipment, not poor performance of the pump station itself. The electrical failures shut down the pumps, resulting in a reportable bypass. Below is a timeline of reportable bypasses and actions taken by contractors for repair and replacement of equipment:

- 3/31/2014: Electrical failure. Pumps automatically shut off
- 4/6/2014: Electrical failure. Pumps automatically shut off
- 4/14/2014: Electrical failure. Pumps automatically shut off
- April 2014: WPCA Spent $10,750 for Traver Electric to replace starters and auxiliaries.
- September 2014: WPCA Spent $58,200 for the purchase and installation of two GE7700 Series MCCs by Satin America.
- 12/9/2014: Starter for pump #1 tripped. 110-volt pump control transformer for pump #2 failed
- December 2014: Satin America (under warranty repair) replaced the motor overload block for pump #1 and control transformer for pump #2.

Following repair of the electrical equipment, the Old Trolley Way pump station has continued to operate effectively with no subsequent electrical failures.

**Question/Request #14:** The Arcadis 2015 Report identifies the following pump stations with a Risk Rating of 2, indicating that pump stations are likely to require upgrades and improvements in the near future to ensure reliable operation and/or prevent sewer overflows:

- Bouton Street;
- Fox Run;
- Keeler Brook;
- Marvin Beach;
- Trolley Way;
- Shady Beach (Shorehaven);
- West Port Avenue; and
- Woodward Avenue.
Submit a description of the City’s plans to prevent future unauthorized discharges caused by failures at the Bouton Street, Fox Run, Keeler Brook, Marvin Beach, Shady Beach, West Port Avenue, and Woodward Avenue pump stations.

**Response:** In 2015, the WPCA contracted with Arcadis to undertake a system-wide performance analysis to assist the WPCA in its future planning. While the WPCA aims to implement most if not all of the recommendations in the analysis, it should be noted that the Arcadis analysis does not impose binding obligations upon the WPCA. The analysis has helped the WPCA prevent unauthorized discharges both at a system-wide level and at individual pump stations. The response below first addresses system-wide improvements and then provides detail concerning each pump station.

In 2014, the old pump station alarm/light panel was replaced with a Supervisory Control and Data Acquisition (SCADA) telemetry system. The system was designed to monitor critical equipment (i.e., wet well levels, pump on/off, grinders on/off, generator on/off, etc.) and alarms (pump failure, generator fault, power loss, grinder fail, high wet well, dry well flood, etc.) at each pump station. The system monitoring screens/alarms is integrated into the WWTP SCADA computer in the control room.

The installation of this system has significantly improved pump station monitoring of all critical equipment and wet wells. It has also resulted in quicker response time to resolve alarms and the dispatch of appropriate personnel and equipment. To improve alarm response, the WPCA added WIN 911 to the SCADA system for the WWTP and Pump Stations. If critical alarms are not acknowledged within five minutes by the plant operator, the WIN 911 system automatically calls and sends electronic messages to a list of persons until the alarm is acknowledged. Emails are also sent as a secondary notification. Critical alarms under WIN 911 are as follows:

**Wastewater Treatment Plant Alarms:**
1. Power Loss
2. High Main Lift Pump Wet Well Level
3. High Secondary Lift Station Wet Well Level

**Pump Station Alarms:**
1. Power Loss
2. High-High Wetwell Level (float Switch)
3. High Wet Well Level (pump controller)
4. Drywell Flood

The WPCA has entered into agreement (January 27, 2016) with Wright-Pierce Inc. for On-Call Engineering Services related to planning, design and construction administration of capital improvements related to individual pumping stations. The WPCA has requested a pump station generator replacement scope from Wright-Pierce to evaluate generator replacement at six locations. Following that scope, the WPCA plans to request a pumps station evaluation of all twenty-two pump stations in order to identify future capital improvements.

The table below presents recent upgrades and future/proposed improvements:

<table>
<thead>
<tr>
<th>Pump Station</th>
<th>Bypasses within the last five years/cause of bypass</th>
<th>Upgrades/improvements performed within the last five years</th>
<th>Future/Proposed upgrades/improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bouton St</td>
<td>None</td>
<td>2014: Both pumps were pulled and rebuilt 2015: Upgraded pump station</td>
<td>2016: Wright-Pierce to evaluate generator replacement 2018: Replace suction, discharge</td>
</tr>
<tr>
<td>Location</td>
<td>Description</td>
<td>Instrumentation and control systems</td>
<td>and check valves</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Fox Run</td>
<td>2/19/2015: backflow preventer failed</td>
<td>2016: Installed water meter</td>
<td>2017: Upgrade pumps, wetwell tank, and controls</td>
</tr>
<tr>
<td>Keeler Brook</td>
<td>5/1/2014: Heavy rain. Station could not keep up with flow 12/9/2014: VFD's for pumps #3 and #4 tripped</td>
<td>2014-2015: Upgraded controls to a multitrode system. Two pumps were rebuilt, replaced check valves. Replaced comminutors</td>
<td>Future capital improvement project 2018: Replace controls</td>
</tr>
<tr>
<td>Marvin Beach</td>
<td>None</td>
<td>2015: Installed new transfer switch, purchase spare pump (shelf)</td>
<td></td>
</tr>
<tr>
<td>Shady Beach</td>
<td>None</td>
<td>Replaced all isolation valves. Replaced one motor. Rebuilt one pump</td>
<td>2016: Wright-Pierce to evaluate generator replacement</td>
</tr>
<tr>
<td>Westport Ave</td>
<td>8/28/2011: (not a bypass). Shut down station during flooding and power outage to prevent damage to the station 10/31/2012: Hurricane Sandy Generator failure</td>
<td>No major upgrades</td>
<td>2016: Wright-Pierce to evaluate generator replacement</td>
</tr>
<tr>
<td>Woodward Ave</td>
<td>None</td>
<td>2014: Replaced generator, ATS, and comminutors.</td>
<td>2020: Install 2 new pumps and suction, discharge and check valves</td>
</tr>
</tbody>
</table>

**Question/Request #15:** Submit a copy of the City's sewer use ordinance adopted pursuant to Section 4(D) of the POTW Permit.

**Response:** Attachment 15 includes the following ordinances from the City of Norwalk's Code:

- Chapter 91 “Sewers, Public”
- Chapter 92 “Septage Disposal”
- Chapter 113 “Water Pollution Control Authority”
**Question/Request #16:** Submit a copy of any other ordinances used by the City to enforce the General Permit for the Discharge of Wastewater Associated with Food Service Establishments, issued by CT DEEP.

**Response:** Please refer to Chapter 91 “Sewers, Public” in Response #15 and Attachment 15.

**Question/Request #17:** Submit a list of Class III and Class IV food service establishments, as defined by Section 19-13-B42 of the State of Connecticut Public Health Code, discharging to the City's Collection System. Include in this list, at a minimum, the following information:

- The type of Fats, Oils, and Grease (FOG) control device installed at each establishment;
- The date of last inspection by the City; and
- Identification of all establishments at which the City has issued written notification of violations between January 1, 2011, and the date of receipt of this Request.

**Response:** On January 26, 2009, the WPCA approved Industrial Pretreatment Program (“IPP”) Fees that included an annual administration fee and high strength surcharge fee for exceedances of TSS, BOD, or O&G limits. On or around June 28, 2011, 276 food establishments and/or industrial users that had not registered with the WPCA received letters informing them of their noncompliant status. On March 19, 2012, the WPCA approved a noncompliance fee of $500 (effective July 1, 2012) as part of the annual IPP Billing. This fee is billed to any user that failed to register and comply with the FOG General Permit. There are currently 68 food establishments that are designated as "Active Non-Compliant" and are billed the noncompliance fee of $500. An IPP/FOG program timeline from 2005 through 2016 is included in Attachment 17.

A list of Class III and IV food service establishments (as of July 1, 2016), as defined by Section 19-13-B42 of the State of Connecticut Public Health Code, discharging to the WPCA’s collection system and requested information is included in Attachment 17. A list of address labels receiving notice of noncompliance is also included in Attachment 17.

**Question/Request #18:** Submit a copy of the most recent version of City’s FOG Program Policy.

**Response:** A copy of the City’s most recent FOG Program Policy is included in Attachment 18. The policy is provided to food preparation establishments as part of the FOG Program.

**Question/Request #19:** Section D of the attached EPA Inspection Report includes a discussion of the City’s practices for horizontal asset record keeping and work order tracking.

Submit a description of any changes that the City has made or plans to make to its procedures for tracking field crew observations of grease or other anomalies in sewer manholes and pipes into its Cityworks software.

**Response:** The City’s changes to its procedures for tracking field crew observation of grease or other anomalies in sewer manholes and pipes is described below.
1. Manhole Inspection – A general observation pick list was added to the existing Manhole Inspection Form. This field is required to be filled out by the inspector. More than one option can be chosen, if applicable. The available options to choose from include grit, grease, debris, or none.

2. Gravity Main Cleaning Work Order – Two required fields were added to the Gravity Main Cleaning Work Order and four existing fields were made required entries. “Reason Cleared” is a free-form text field that has been newly added as well as “Cleaning Method” with the following pick list options:
   - Flushing;
   - Cutting;
   - Vactoring;
   - Flushing & Vactoring; and
   - Cutting & Vactoring,

The four existing fields that are also now required are:
1) Roots (L,M,H);
2) Grit (L,M,H);
3) Grease (L,M,H); and
4) Debris (L,M,H).

These changes were made because, unlike CCTV, there is no documentation or tapes that could be reviewed in the future to gather more information about the cleaning and what was found in the line. Crews are now required to input all of this information at the time of the cleaning. As a result, the data is documented and retained.
**Question/Request #20:** Section D of the attached EPA Inspection Report includes a discussion of the City’s practices for pump station operations and maintenance tracking record keeping.

Submit a description of any changes that the City has made or plans to make to its procedures for incorporating field crew observations of pump station problems into its Maintenance Connection software.

Submit a description of any changes that the City has made or plans to make to its procedures for tracking the timeliness of work order completion.

**Response:** The treatment plant operator, OMI, is in the process of switching to a paperless maintenance management system. The main goal is for all of the information to be entered directly into the system by the field personnel as soon as the task is completed ensuring accurate cataloguing of information. This system allows managers and field personnel to have instant access to inventory records and repair history in the field, manage work orders onsite and offsite, and communicate from different locations to update jobs statuses and verify completion.

As of August 5, 2016, nine iPads have been purchased and are scheduled to be deployed in the first week of November. Training for all field personnel is scheduled to take place within two months.

**Question/Request #21:** Section E of the attached EPA Inspection Report includes a discussion of the City’s practices for preventative maintenance cleaning and inspections of its Collection System.

Submit a description of the extent to which the City has completed its investigation of sewers that were not inspected prior to the March 2006 Performance Evaluation.

Submit a description of the extent to which the City has categorized its sewers according to the “Priority 1,” “Priority 2,” and “Priority 3” system described in Section 3.1.3 of its Collection System Operation and Maintenance Plan (“O&M Plan”), dated November 2015, and prepared by CH2M Hill, Inc.

Submit a description of the extent to which the City has completed inspections of sewers according to the “Priority 1,” “Priority 2,” and “Priority 3” system described in Section 3.1.3 of its O&M Plan.

**Response:** Prior to 2006, access issues were the primary reason for failing to inspect certain sewers. Since the development of the O&M plan in 2014, the City has developed an easement layer within its GIS system to better track pipes along easements. The City has viewed 22% of the sewers along the easements since 2010 with closed-circuit television (“CCTV”) (since the City started tracking inspections in Cityworks).

The extent to which the City has categorized its sewers according to the Priority 1, Priority 2, and priority 3 system is described below:

- **Priority 1** line segments/areas requiring annual cleaning and annual inspection. These line segments have PACP scores of 4 or 5.
• **Priority 2** line segments/areas requiring cleaning and inspection on a 5-year interval. These line segments have PACP scores of 3.

• **Priority 3** line segments/areas requiring cleaning and inspection on a 10-year interval. These line segments have PACP scores of 1 or 2.

All pipes receiving a PACP scores, including those that have been inspected by CCTV which began in November 1, 2014, are entered into Cityworks. The pipes will fall into one of the three priorities outlined above based upon its PACP score. Once a pipe is scored, it will be put onto a list for either annual, 5-year, or 10-year clearing. The list will be reviewed monthly to ensure that gravity mains with appropriate scores are being cleaned according to priority.

The City has completed 10% of the sewer system since November 1, 2014. The City has allocated $1 million each year for the next three years to evaluate and rehabilitate the pipes that have a PACP score of 4 and 5. After rehabilitation, these pipes will be re-inspected and assigned an updated PACP score.

**Question/Request #22:** Section E of the attached EPA Inspection Report includes a discussion of the City’s practices for cleaning problem areas in its Collection System (“hot-spots”).

Submit a description of the City’s hot-spot cleaning program to clarify if hot-spots are to be cleaned on a 6-week cycle (as provided for by the hot-spot cleaning list), a 13-week cycle (as stated in the O&M Plan), or some other frequency.

Submit a description of any changes the City has made or plans to make of cleaning frequency in the Bouton Street and Ely Avenue hot-spot locations to address the grease build-up observed during the EPA Inspection.

**Response:** The City had conducted a routing analysis to determine a schedule for cleaning hot-spots on a 6-week cycle. The 6-week cycle was chosen as a baseline calculated on the 6 to 8 hours necessary to clean all of the current hot spots. The previous schedule required cleaning hot spots quarterly. The new schedule sets aside days dedicated solely to cleaning hot spots to gain routing efficiencies and to free up crews for other cleaning work.

After conducting the experiment to gain efficiencies it was found that the 6-day routing schedule made the cleaning crew more efficient and provided easier tracking of the sewer problem area frequency. However, it was found that it was more reasonable to plan for the 6 unique days over a 13-week cycle, as stated in the O&M Plan. The City plans on maintaining a 13-week cleaning cycle. This has been found to be adequate to resolve problem areas.

To address the grease build-up observed during the EPA Inspection of Bouton Street and Ely Avenue, the City has put this area on a cleaning/flushing cycle for every 13 weeks. The City has also removed most of the grease from this line with a cutter since the EPA visit. It should also be noted that this area is on the capital improvement list to be evaluated and addressed in the near future.

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4 For additional detail, please see responses 10 and 12.
**Question/Request #23:** Section H of the attached EPA Inspection Report includes a discussion of the City’s practices for operating and maintaining its siphons.

Submit a list of storm events between January 1, 2013, and the date of receipt of this Request when the City performed inspections at the upstream side of the Ann Street Siphon in response to an observed high water level. Provide documentation of observations made at these inspections.

Submit a list of dates on which preventative maintenance inspections were performed at the Ann Street Siphon and the Merrill’s Lane Siphon between January 1, 2013, and the date of receipt of this Request. Provide documentation of observations made at these inspections.

**Response:** OMI monitors high water levels at the Ann Street Siphon through SCADA. The site was visited regularly between January 1, 2013, and the date of receipt of this Request and known inspection dates and observations follow below. There is no documentation of visits that did not result in an observable condition, identified below.

<table>
<thead>
<tr>
<th>Date</th>
<th>Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2009 - 2/2009</td>
<td>RedZone Robotics inspected the siphon and TVed 716 feet of various diameter sizes (42&quot; to 60&quot;). A copy of the report is presented in Attachment 23.</td>
</tr>
<tr>
<td>6/9/2015</td>
<td>OMI Opened and inspected siphon from outside. It was determined that confined space entry was necessary for future planned maintenance</td>
</tr>
<tr>
<td>6/24/2015</td>
<td>Contractor (Wright-Pierce) opened, entered and visually inspected the  siphon. The contractor inspected the electrical work performed by another contractor. No abnormalities noted</td>
</tr>
<tr>
<td>10/29/2015</td>
<td>OMI Collections team opened and created a video of the siphon. A leak of approximately 50 gpm was found by the duckbill valves during high tide</td>
</tr>
<tr>
<td>5/11/2016</td>
<td>OMI Collections and Maintenance teams opened, entered, and cleaned duckbill valves</td>
</tr>
</tbody>
</table>

OMI inspects the Ann Street Siphon on an annual basis. Inspection dates were not always recorded previously but will be moving forward. OMI has not inspected the Moody/Merrill’s Lane Siphon on an annual basis because it is not a CSO or a discharge point and thus it is not required by the permit.

**Question/Request #24:** Submit a copy of the City’s Storm Water Management Plan prepared pursuant to Section 5(b) of the 2004 MS4 Permit.

**Response:** Attachment 24 includes the City of Norwalk’s Stormwater Management Plan.

**Question/Request #25:** Submit a copy of the City’s ordinance or other regulatory mechanism that the City has adopted to prohibit non-storm water discharges into the MS4, pursuant to Section 6(a)(3)(A)(i) of the 2004 MS4 Permit.
**Response:** Attachment 25 includes the following ordinances from the City of Norwalk’s Code and various regulations/applications:

- Chapter 43 “Floods and Erosion Control Board”
- Chapter 69, Article III “Norwalk Harbor Management Commission”
- Chapter 93 “Stormwater, Illicit Discharges and Connections”
- Chapter 97 “Excavation and Filling of Land”
- DPW Permit Provisions (Terms and Conditions)
- Inland Wetlands & Watercourses Regulations – Conservation Commission
- Subdivision and Resubdivision Regulations - Planning Commission
- Subdivision Check List - Planning Commission
- Site Plan Review Application Instructions – Zoning Commission
- Special Permit Application Instructions – Zoning Commission

**Question/Request #26:** Submit the City’s MS4 outfall map(s) that comply(ies) with the requirements of Section 6(a)(3)(B)(i) and (ii) of the 2004 MS4 Permit.

**Response:** Attachment 26 includes the City’s MS4 maps.

**Question/Request #27:** Submit the following information on the Illicit Discharge Detection and Elimination (“IDDE”) investigations performed between January 1, 2011, and the date of receipt of this Request pursuant to Section 6(a)(3)(B)(iii) of the 2004 MS4 Permit:

- A detailed explanation of the process and steps involved in the City’s IDDE investigations to detect, track, and eliminate illicit discharges throughout the drainage areas discharging to these outfalls, and to confirm that no illicit discharges remain at the completion of the IDDE investigations;
- Maps that indicate the manholes, pipes, buildings, and other items investigated;
- Results of all water quality tests performed; (It is not necessary to provide copies of analytic lab reports for each water quality test - summary tables of results are preferred.)
- All manholes or other locations in each drainage area where the City found evidence of illicit discharges, and the evidence that supports these determinations;
- All manholes or other locations in each drainage area where the City determined that evidence of illicit discharges was not present, and the evidence that supplies these determinations;
- Locations of all confirmed sources of illicit discharges found, the date on which each illicit source was confirmed, and the evidence that supports these determinations;
- Whether the confirmed sources of illicit discharges have been eliminated, and if so, on what date;
- The entity that eliminated the illicit discharge(s) (i.e., the City or a private entity); and
- If the confirmed sources of illicit discharge(s) have not been eliminated, the schedule according to which the illicit discharge(s) will be eliminated.

**Response:** The City of Norwalk, WPCA, and the stormwater crews of Public Works (DPW crews) have built a strong partnership with the Harbor Watch program of Earthplace to identify, locate, and eliminate
illicit discharges. Harbor Watch, through various stormwater testing techniques (i.e., bacteria), monitors numerous storm drainage system outfalls within the City. This continual monitoring identifies stormwater discharges that have bacterial contamination and where additional monitoring upstream in the drainage system is essential to locate potential pollution sources. Harbor Watch’s excellent monitoring work has proven to be thorough, successful, and beneficial to the City, Norwalk Harbor, and the Long Island Sound.

The methodology for investigations performed by the team varies but usually consists of bacterial testing, dye testing of building fixtures, CCTV inspections of pipes, manhole inspections, and smoke testing.

Once an illicit discharge has been detected, the WPCA and DPW crews, in conjunction with the Norwalk Health Department or other governmental agencies, as appropriate, take necessary actions to identify and eliminate the discharge.

Since January 1, 2011, the following pollution sources were identified and eliminated.

2016:
- Walnut and Birch St sanitary sewer main – leaking into stormwater system - point repair and CIPP lining (repaired)
- Ellen St at Chestnut Hill Rd – large water main break into stormwater system (repaired)
- 20 Paraciso St – failed sewer lateral leaking into stormwater system (repaired)

2015:
- Lockwood Lane sanitary sewer main – leaking into stormwater system - point repair and CIPP lining (repaired)
- Clara Dr – sanitary sewer main repairs – replacement and CIPP lining (repaired)
- 23 Clara Dr – repair of leaking sewer lateral through stormwater pipe (repaired)
- 17 Theodore Ln – septic tank overflow pipe (no leach field) connected directly to CB (repaired)
- 46 Barbara Dr – failed sewer lateral leaking into stormwater system (repaired)
- 60 Barbara Dr – failed sewer lateral leaking into stormwater system (repaired)

2014:
- 12 Frances Ave – failed sewer lateral leaking into stormwater system (repaired)
- 2 Washington St – sanitary sewage connection to stormwater system – Norwalk Health Department has taken action against property owner
- 12 Wilton Avenue – failed sewer lateral leaking into stormwater system (repaired)
- 47 Wall St – failed sewer lateral leaking onto RR tracks (repaired)
- 31 Concord St – failed sewer lateral leaking into ground (repaired)
- 7 Midwood Rd – septic system connected directly into stormwater system (disconnected)
- 10 Tindell Ave – vehicle washing wastewater to stormwater system (disconnected)
- 191 main St – vehicle washing wastewater to stormwater system (disconnected)

2013:
- 11 Lower Rocks Ln - failed sewer lateral leaking onto road surface (repaired)

2012: None Identified
2011:
- 35 Elmwood St – failed sewer lateral leaking onto road surface (repaired)
- 188 South Main St – failed sewer lateral leaking onto road surface (repaired)
- Manhole on Woodward Ave - leaking into stormwater system (replaced)

**Question/Request #28:** Submit a copy of the ordinance or other regulatory mechanism that the City has adopted to reduce pollutants in stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre pursuant to Section 6(a)(4)(A)(i) of the 2004 MS4 Permit.

**Response:** Please see ordinances and other regulatory documents provided in *Attachment 25*.

**Question/Request #29:** Submit a copy of the ordinance or other regulatory mechanism that the City has adopted to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the MS4 or directly to waters of the State pursuant to Section 6(a)(5)(A) of the 2004 MS4 Permit.

**Response:** Please see ordinances and other regulatory documents provided in *Attachment 25*.

**Question/Request #30:** Submit documentation of all representative outfall monitoring that was performed by the City between January 1, 2011, and the date of receipt of this Request pursuant to Section 6(h) of the 2004 MS4 Permit.

**Response:** Please see *Attachment 30* for all sampling since January 1, 2011.

**Question/Request #31:** Submit copies of all of the City’s MS4 Annual Reports that were prepared pursuant to Section 6(i) of the 2004 MS4 Permit for the years 2011, 2012, 2013, 2014, and 2015.

**Response:** The 2015 Annual MS4 Report for the City of Norwalk is included in *Attachment 31*. Please refer to the CT DEEP letter in *Attachment 31* for the status of other annual reports.
PROFESSIONAL SERVICES TASK ORDER

Task Order Number: 01
Task Order Date: April 25, 2016

Subject to the AGREEMENT FOR ON-CALL ENGINEERING SERVICES BY AND BETWEEN WATER POLLUTION CONTROL AUTHORITY OF THE CITY OF NORWALK AND CH2M HILL ENGINEERS, INC., (hereinafter referred to as the “Agreement”), WPCA hereby directs ENGINEER to perform the professional engineering services specified in this Task Order in accordance with the Agreement.

1. Project Description:

   Project Number: 01
   Project Name: Basis of Design for System Wide Collection System Improvements
   Description: Development of a Basis of Design for Marvin Beach force main replacement, East Avenue Interceptor capacity improvements, and various priority sewer rehabilitation improvements

2. Scope of Work:

   The Scope of Work to be performed hereunder consists of the development of a basis of design for system wide collection system improvements and is more fully described in the document entitled Scope of Work attached hereto as Exhibit A.

3. Time Schedule:

   Engineer shall complete the work required by this Task Order within 90 calendar days of the date of this Task Order first written above.

4. Compensation:

   Engineer shall be paid for the proper performance of services described in this Task Order in an amount not to exceed $90,000 Dollars

5. Special Conditions:

   This Task Order is subject to the special provisions stated in Exhibit B, attached and incorporated herein as if fully set forth herein.


___

ISSUED AND AUTHORIZED BY: WPCA
By: [Signature]
Title: Sr. Environmental Engineer

ACCEPTED AND AGREED TO BY: ENGINEER
By: [Signature]
Title: Vice President, CH2M

6.0.2
PROFESSIONAL SERVICES TASK ORDER
Task Order Number: 1

Exhibit A: Scope of Work

DESCRIPTION OF WORK:
The general intent of this Task Order is to prepare a Basis of Design for the construction of various sewer improvements throughout the City. A Basis of Design is required to define the scope of collection improvements required, define the types of repairs and rehabilitation required, define permitting requirements and construction cost estimates.

CH2M will develop recommendations for the Marvin Beach forcemain replacement, East Avenue capacity improvements, and various priority areas such as deformed pipes, sewer problem areas, gravity mains downstream of pump station forcemains, historical sewer overflow locations and other priority areas defined by the WPCA.

SCOPE OF WORK:
The scope of work includes three major tasks:

- Task 1 – Project Management
- Task 2 – Basis of Design Services
  - 2.1 – Marvin Beach Forcemain Rehabilitation
  - 2.2 – East Avenue Interceptor Capacity Improvements
  - 2.3 – Various Priority Sewer Improvements
- Task 3 – Basis of Design Report

Task 1 – Project Management
The purpose of this task is to conduct the project management activities required to manage all technical, financial, and schedule aspects of this Task Order necessary to complete work on time, within budget, and of suitable quality. Activities include coordinating and facilitating team and client meetings, coordinating quality assurance, coordinating subcontractors, monitoring the progress of the work, and assembling all documents. During the course of the project CH2M will prepare for and attend up to four meetings. In addition to progress, CH2M anticipates including the following topics at key project milestones; coordination of field activities for Marvin Beach geotechnical investigations; presentation of draft recommendations.

Task 2 – Basis of Design Services
CH2M will provide design services that will result in a Basis of Design for collection system improvements. CH2M will develop a recommended basis of design and an outline of required contract documents, including specifications and drawings.

Task 2.1 – Marvin Beach Forcemain
CH2M will analyze rehabilitation and replacement technologies for the Marvin Beach Forcemain. Marvin Beach Pump Station is located at River Drive and Alden Avenue; the 520 foot long 8-inch forcemain extends from the pump station to 5th Street, crossing under a tidal flat then through Hawkins Avenue. Recent forcemain breaks in 2013, 2014 and 2015 have occurred and been repaired by replacing small pipe sections.

CH2M will analyze rehabilitation and replacement technologies to repair the entire forcemain and mitigate forcemain breaks. CH2M will hire a boring subcontractor to conduct geotechnical investigations. Up to 3 borings will be conducted. Required lab analysis will be conducted on the borings to determine to what extent trenchless technologies can be employed on the segment under the tidal flat. Lab testing may include rock cores, sieve analysis, hydrometer, atterberg
limits, water content, organic content and corrosivity (PH, sulfate, chlorides and resistivity). CH2M will review and analyze the subsurface information and lab results to develop and document recommendations. Anticipated costs for the boring contractor and lab analysis is $10,000 including $1,500 to for potential traffic control requirements.

In soils, 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. Because of 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 CH2M.

**Task 2.2 – East Avenue Interceptor Capacity Improvements**
CH2M will develop a recommended alternative to address the East Avenue Interceptor capacity deficiencies. The sewer along East Avenue by Westport Avenue services over 500 acres of sewershed in the Northeast portion of the City. As the collection system expanded, larger diameter pipes were connected to a smaller existing 15-inch pipe creating the potential for capacity constraints and severe surcharging along the 15-inch sewer main.

CH2M will use the City’s existing hydraulic model to develop a recommended configuration to alleviate surcharge and capacity issues. CH2M will conduct up to 4 model runs to develop alternatives to alleviate surcharge issues. Alternatives may include inflow and infiltration removal, relief sewer routing or modifying existing pipe configurations. If it is determined that the existing sewer model has insufficient detail in this area to conduct model runs then calculations will be conducted to determine recommendations. Any additional data collection required in the area will be identified to confirm the recommendations.

**Task 2.3 – Various Priority Sewer Improvements**
CH2M will review the television inspection of deformed sewers, sewers downstream of pump station force mains and sewer hot spots, defined as sewers requiring routine cleaning to maintain operability, to develop rehabilitation recommendations for these various sewer priorities. Attachment A shows all of the sewers defined by one or more of these categories. All of these pipes along with sewers associated with reoccurring overflow issues unrelated to capacity will be analyzed and considered for repair. New information gathered during design will be incorporated based on criticality of the issues discovered.

CH2M will review the inspection data, including television inspection, manhole inspections and field investigations to prioritize and develop recommendations for the required sewer improvements. CH2M will develop summaries of each area that describes the location, sewer configuration, sewer issues, and recommended repairs. These will be used to decipher the recommended quantities of each repair methodology and discuss criticality of collection system deficiencies. CH2M will also conduct site visits to critical areas to review constructability of proposed recommendations, including traffic control requirements, laydown areas, access concerns, and permitting requirements.

**Task 3 – Basis of Design Report**
A Basis of Design Technical Memorandum will be developed to convey investigation and design findings and which areas are most critical to repair. Utilizing the results of the data collection and additional field investigations, CH2M will develop recommendations for replacement or rehabilitation of existing sewers. The following topics will be covered in the Basis of Design Technical Memorandum:

- A risk assessment to define which sewers require rehabilitation;
  - Assessment of pipe segment level of failure
  - Assessment of pipe segment consequence of failure
- Alternatives analysis for recommended sewer repairs;
- Preliminary layouts showing the suggested sewer improvement measures, including:
  - Dig and replace repairs
  - Sewer replacements
  - Cured-in-place lining
  - Manhole rehabilitation
- Define major sewer bypass required for construction;
- Define permitting required for construction;
- Consideration of the City's 5-year paving list;
- Potential traffic and public/business concerns;
- Contract packaging recommendations;
- Opinion of probable construction cost;
- Define construction duration.

An Opinion of Probable Construction Cost will be prepared and submitted. The cost estimate will be prepared to a Class 3 level of accuracy as defined by the Association for the Advancement of Cost Engineering (AACE). This Basis of Design will define the recommended scope, permitting requirements and construction cost estimate of collection improvements required for the Marvin Beach forcemain, East Avenue Interceptor capacity improvements and mitigation of various priority areas such as deformed pipes, sewer problem areas, gravity mains downstream of pump station forcemains, historical sewer overflow locations and other priority areas defined by the City.

CH2M will meet with the WPCA to review the Basis of Design and discuss comments received. CH2M shall document the events of the meeting and provide a detailed listing of all comments and proposed resolution as a deliverable and documentation of this review meeting.

Deliverables:
- 5 Copies of Basis of Design Technical Memorandum
- Compact Disk including the Basis of Design Technical Memorandum

Fee Schedule:
CH2M has attached an estimated Level of Effort for each Task and outside services. CH2M shall provide the design services described in this Task Order on a Lump Sum basis for the amount indicated in the attached Level of Effort Breakdown.
PROFESSIONAL SERVICES TASK ORDER
Task Order Number: 1

Exhibit B: Special Conditions

There are no Special Conditions
### Level of Effort Breakdown

**Basis of Design for System Wide Collection System Improvements**

<table>
<thead>
<tr>
<th>Personnel Classification</th>
<th>Direct Labor</th>
<th>Billable Rate</th>
<th>Task 1</th>
<th>Task 2</th>
<th>Task 3</th>
<th>Total Hours</th>
<th>Total Fee</th>
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PROFESSIONAL SERVICES TASK ORDER

Task Order Number: 01
Task Order Date: Sept. 6, 2016

Subject to the AGREEMENT FOR ON-CALL ENGINEERING SERVICES BY AND BETWEEN WATER POLLUTION CONTROL AUTHORITY OF THE CITY OF NORWALK AND ARCADIS U.S., INC. (hereinafter referred to as the "Agreement"), WPCA hereby directs ENGINEER to perform the professional engineering services specified in this Task Order in accordance with the Agreement.

1. Project Description:

   Project Number: 0085599
   Project Name: Solids Handling, Odor Control, and Aeration Process Improvements at the Norwalk WPCF
   Description: Alternatives Evaluation Phase Engineering Services for the Solids Handling, Odor Control, and Aeration Systems at the Norwalk WPCF. Included is a review of potential alternative project delivery methods for construction and sludge dewatering/handling/hauling/disposal.

2. Scope of Work:

   The Scope of Work to be performed hereunder consists of developing a Solids Handling, Odor Control, and process Air System alternatives Evaluation Report and is more fully described in the document entitled TECHNICAL SCOPE OF ALTERNATIVES EVALUATION PHASE ENGINEERING SERVICES dated August 30, 2016, attached hereto as Exhibit A.

3. Time Schedule:

   Engineer shall complete the work required by this Task Order within 125 calendar days of the date of this Task Order first written above.

4. Compensation:

   Engineer shall be paid for the proper performance of services described in this Task Order in an amount not to exceed Two Hundred Eighty Seven Thousand Six Hundred Twenty Nine and 09/100 ($287,629.09) Dollars.

5. Special Conditions:

   This Task Order is subject to the special provisions stated in Exhibit B, attached hereto and incorporated herein as if fully set forth herein.

6. Amendment:

   This Task Order amends a previously executed Task Order: N/A
   Previous Task Order Number: N/A
   Previous Task Order Date: N/A

ISSUED AND AUTHORIZED BY: WPCA

By: ____________________________ By: ____________________________
   Ralph Z. Candy                Richard S. Brown

Title: Sr. Environmental Engineer Title: Vice President

ACCEPTED AND AGREED TO BY: ARCADIS U.S., INC.

6.C.3
PROFESSIONAL SERVICES TASK ORDER
Task Order Number: 01

Exhibit A: Scope of Work – TECHNICAL SCOPE OF ALTERNATIVES EVALUATION PHASE ENGINEERING SERVICES (consisting of 15 pages)

Exhibit B: Special Conditions - None
EXHIBIT A – AUGUST 2016
WATER POLLUTION CONTROL AUTHORITY OF THE CITY OF NORWALK
Water Pollution Control Facility On-Call Engineering Services
Task Order No. 1

TECHNICAL SCOPE OF ALTERNATIVES EVALUATION PHASE ENGINEERING SERVICES:
Solids Handling, Odor Control and Aeration Process Improvements at the Norwalk WPCF

The following Scope of Work and Fee Schedule for Task Order No. 1 Technical Scope of Alternatives Evaluation Phase Engineering Services for the Solids Handling, Odor Control and Aeration Improvements at the Norwalk WPCF is provided in accordance with the Agreement for On-Call Engineering Services (Agreement) by and between Water Pollution Control Authority of the City of Norwalk (WPCA) and Arcadis US, Inc. (Arcadis).

This initial evaluation phase is intended to serve as a master planning level study of alternatives for the solids handling processes, odor control at the Solids Handling Building, and the aeration system with particular focus on the process air blowers. Due to the current location of the process air blowers within the Solids Handling Building, modifications to either system are interdependent. The solids handling process analysis will include the primary sludge pumping and primary skimmings systems. The intent of this initial phase is to analyze and evaluate alternatives for each system, and determine a recommended scope of work and approach for the subsequent final design phase.

This evaluation phase will also include review of potential alternative project delivery methods for construction of the new solids handling facilities, as well as review of alternatives for sludge dewatering, hauling and disposal. The final deliverable for this initial phase of work will be a Solids Handling, Odor Control and Process Air System Alternatives Evaluation Report. Details of each task associated with this Scope of Work are outlined below.

Phase A – Existing Condition Evaluations

Task A.1 Data Request and Review

Task A.1.1. Review of Process Data and Operating Information
Arcadis will prepare and submit a request for information and documents to be used as a basis of our evaluation. Arcadis will require up to three years of detailed operating data, the bulk of which is not currently available in the historical operating data evaluated under Arcadis’ contract monitoring services to the WPCA. The information request will include relevant design reports, construction or record drawings, O&M Manuals, shop drawings, survey information, geotechnical information, energy costs, labor costs, chemical costs or other pertinent information to the project that we do not already have. Arcadis will then review the compiled data with plant operations staff, particularly the manner in which samples were collected (grab, composite, flow weighted, time based) and the exact locations of readings.
Using the available data, Arcadis will:

- Develop a mass balance for the solids handling system; and
- Evaluate the capacity of the existing process air blowers and DO control valves against process demands.

Following analysis of the data, Arcadis will identify areas for further discussion or evaluation and develop a list of data gaps that will be necessary to fill to complete this assignment.

**Task A.1.2. Review of Current Sludge Management**

Arcadis understands that Norwalk WPCA may be interested in removing the sludge dewatering, hauling, and disposal responsibility from the current contract operations agreement, either by assuming responsibility on their own, or entering into one or more separate agreements for hauling and/or disposal directly with a private entity.

Arcadis will review and summarize the contractual responsibilities of the WPCA's current contract operator, any sludge production and management performance requirements, technical specifications and pricing structure. The review will include the current sludge management practices being implemented by the WPCA's current contract operator.

**Task A.2 Kick-Off Meeting and Data Gap Discussion**

Arcadis will prepare for and conduct a Kick-Off Meeting with the WPCA to discuss the scope of services, deliverables, schedule, and communication requirements for the execution of this Task Order. Arcadis and the WPCA will also discuss any data gaps identified under Task A.1. and determine means for obtaining the data.

As part of this kickoff meeting, Arcadis will discuss Norwalk WPCA's overall goals associated with its sludge management. Arcadis will discuss solids handling system design criteria such as dewatering shift requirements, constraints and/or future flows and loads anticipated at the WPCF that would affect both aeration requirements and solids loadings.

Arcadis will prepare an agenda for the meeting and conduct a site walk-through after the meeting with current plant operations staff. Arcadis will prepare and distribute meeting minutes.

**Task A.3 Existing System Evaluation**

Under this task, Arcadis will evaluate the solids handling system from an equipment condition and process performance perspective. The evaluation will include the following:

a. Primary sludge pumps and piping configuration
b. Primary skimmings removal, scum pumping and piping configuration
c. Primary sludge gravity thickeners (GTs), and piping configurations
d. Thickened Sludge Pumps and piping configuration
e. GT Scum Pumps and piping configuration
f. Waste activated sludge (WAS) pumps and piping configuration
g. Sludge Blending/Mixing Tanks, mixers, pumps and piping configuration
h. Gravity belt thickeners (GBTs)
i. GBT inlet piping configuration, including polymer dosing/mixing location  

j. Polymer pumping and dosing equipment  

k. Belt filter press, owned by CH2M (will include process performance evaluation only)  

l. Sludge cake conveyor and loading systems  

m. Sludge disposal truck pumps  

n. All related instrumentation and control systems  

o. Electrical equipment  

p. HVAC Systems  

q. Odor Control Needs  

The evaluation of the process air system will be based on both a system operation and equipment condition perspective. To evaluate operation of the current system, Arcadis will determine the plant’s current oxygen demands under various conditions. The calculated demands will be validated against plant operating data, and then compared to the existing blower capacity and turn-down. The system operation evaluation will extend from the aeration tank diffusers back to the blowers to identify any limitations and specific areas for improvement. The equipment condition evaluation will include the blowers, piping, valves, diffusers, DO probes and corresponding instrumentation and control systems and electrical equipment.

Condition assessments will be based on visual inspection of accessible system components. Arcadis will also utilize the available inspection reports from Arcadis’ contract monitoring services. Arcadis will determine the available capacity of each unit operation based on manufacturer data, operational experience, and TR-16 requirements. Condition assessments will be used to determine the potential useful life remaining and evaluate potential improvement alternatives.

At the completion of Tasks A.1, A.2 and A.3 Arcadis will meet with the WPCA to discuss the results of the process and equipment evaluations and identify specific areas of focus for the subsequent alternatives evaluations.

**Phase B – Alternatives Evaluations**

**Task B.1 Desktop Food Waste Market Study**

Arcadis will utilize the Connecticut DEEP Organics Recycling Planning Tool to assess possible sources of food waste that may be directed to the WPCA if an anaerobic digester is constructed on site. Existing projects in the vicinity of Danbury and New Milford and the proposed Bridgeport BioEnergy project would provide competition for food wastes in accordance with Public Act No. 11-217. Based on a conservative capture rate of 25% of the available market, Arcadis will determine the Biomethane Potential (BMP) of co-digested municipal sludge and food waste and ultimately the available biogas that can be utilized to fuel a combined heat and power (CHP) system. Arcadis will prepare estimates of potential revenues and costs inclusive of tipping fees, electrical purchase avoidance, Renewable Energy Credits (RECs) and available waste heat for the WPCA. Arcadis will prepare a technical memorandum to determine if inclusion of food waste should be part of the solids handling system solutions.

**Task B.2 Sludge Management and Disposal Alternatives**

The intent of this task is to review the current sludge dewatering, hauling and disposal arrangements and identify viable sludge management and disposal and/or beneficial re-use
options for the City of Norwalk using Arcadis’ in-house direct knowledge and public information for similar agreements within the tri-state (NY/NJ/CT) region. Additionally, Arcadis will rely upon its knowledge and understanding of national trends and experience related to project delivery methods and contract operations related to sludge management and disposal to help the WPCA determine the best approach to sludge dewatering, hauling and disposal.

**Task B.2.1. Market and Cost Review**

Arcadis will conduct a desktop analysis of current in-state capacity and recent bids received in the tri-state region based upon publicly available documents to determine the potential range of options available to the Norwalk WPCA associated with assuming responsibility for sludge management. This evaluation will include a review of market prices, existing sludge disposal and beneficial re-use locations and contracts from other agencies, and the evaluation of potential new sludge disposal and beneficial re-use locations, including the Bridgeport BioEnergy project. We will identify disposal locations with the capacity to accept WPCA’s sludge production. We will contact up to 10 disposal facilities to solicit information.

In order to identify potential or new locations, we will rely on several existing sources. First, we will request a list/report from Waste Journal News (Chartwell) that provides tipping fees or gate fees for all disposal facilities within a given radius of Norwalk. This service can also provide historical numbers so that a trend analysis can be performed. Other sources of information will include our knowledge of what alternatives other agencies of similar size in the region are using for off-site beneficial use or disposal. We will also contact prospective haulers performing similar services in the region to solicit a range of potential hauling costs.

It is assumed that the cost estimates will address the cost for additional treatment of sludge provided (if applicable), transport and beneficial use/disposal of the WPCA sludge under liquid and dewatered sludge conditions. The costs for processing the sludge (operations and maintenance costs of the WPCF process) will be developed under other tasks but utilized in the cost analysis when evaluating the potential sludge management scenarios. It is assumed that sludge will be transported from the Norwalk WPCF via truck.

**Task B.2.2. Project Delivery and Contract Options Review**

Arcadis will prepare a summary of the contractual arrangements other agencies of similar size in the region have entered into where the sludge management is a separate responsible entity (either public or another contract) based on our in-house database and publicly available information. We will contact up to 8 entities to determine the delineation of service responsibilities, the characteristic requirements of sludge provided by the public entity, mode of sludge transportation, additional treatment of sludge provided (if applicable), and overview of the payment structure. It is anticipated that Arcadis will, at a minimum, contact Bridgeport WPCA, Stamford WPCA and Greater New Haven WPCA regarding current sludge management practices.

Arcadis will conduct two workshops with the WPCA to discuss options for approaches to both project delivery for the construction of a new or upgraded solids handling facility, and for dewatering, hauling and disposal operations. Alternatives for project delivery will include, amongst others, traditional design-bid-build approach, design-build-operate (DBO), design-build-operate-and finance (DBOF), and hybrids which may include initial capital investment by the WPCA. Alternatives for dewatering, hauling and disposal operations will include reviewing
the potential for the WPCA to assume full, partial, or no responsibility for these operations, or full or partial responsibility under a separate contract with either a contract operator, hauler or disposal facility or any combination thereof.

To navigate through the myriad of options available for project delivery and operations, Arcadis proposes an initial workshop with the WPCA to discuss policy decisions such as capital investment capability, staffing capability, financing capability, impacts to debt service and all associated risks and rewards to more narrowly focus further evaluation of the most viable alternatives. A second workshop will be held to navigate through the more viable alternatives, with the goal of arriving at the best option(s) for moving forward with subsequent phases of the project.

Arcadis will summarize the results of the above tasks into a Memorandum. This Memorandum will present the results of the analysis of potential options available to the Norwalk WPCA, an overview of what other entities with contracted services have done relative to its sludge management and considerations for the WPCA to make under the various alternatives. We will prepare a draft memorandum of our findings for review and comment by the WCPA.

Task B.3. Develop Solids Handling System and Blower Design Criteria

Arcadis will develop design criteria for the solids handling system, based on the evaluation of existing conditions, the analysis of Sludge Disposal Alternatives, and the outcome of the Desktop Food Waste Market Study workshop and analyses. The design criteria will include:

- Current and future primary sludge flows and loads
- Current and future WAS sludge flows and loads
- Current and future thickening and dewatering schedules (e.g., 5 days a week vs. 7 days a week, one shift vs. three shifts, etc.)
- Current and future site constraints (including impacts from Norwalk bridge replacement and river walk projects)
- Sludge hauling restrictions (i.e., preferred times of day for truck traffic)
- Potential changes in current dewatering operations, sludge hauling and disposal contracts
- Future food waste loading, if applicable

For the aeration system blowers, Arcadis will develop design criteria for the proposed process air blower improvements to establish impacts to the Solids Handling Building. The design criteria will include the following:

- Current and future oxygen demands under various conditions (i.e., varying temperature, loadings, and flow conditions)
- Blower and DO control requirements
- Aeration tank dropleg and control valves requirements
- Inlet Air temperature, relative humidity and inlet pressure basis
- Total airflow capacity and turndown requirements
- Blower discharge pressure requirements

Arcadis will prepare a design criteria technical memorandum for WPCA review and comment.
Task B.4. Process Alternatives Development

Task B.4.1. Solids Handling Alternatives

Arcadis will develop and assess conceptual design alternatives for improving the solids handling system. Alternatives will be generally categorized as follows:

- Maintain Status Quo: Existing systems improved and optimized, sludge dewatered, hauled and disposed off-site;
- Anaerobic Digestion and Hauling: Existing systems improved and optimized, anaerobic digesters with combined heat and power (CHP) systems constructed, sludge dewatered, hauled and disposed off-site;
- Aerobic Digestion and Hauling: Existing systems improved and optimized, aerobic digesters constructed, sludge dewatered, hauled and disposed off-site;

For each alternative, Arcadis will develop:

- Conceptual design criteria;
- Conceptual site layouts using commercial, available aerial photography (e.g., Google Earth);
- Conceptual process flow diagrams;
- An analysis of impacts on wet stream processes
- Simple payback evaluations based on labor, chemical, electrical and tipping fee costs or savings for each alternative.

The digester alternative assessment may be completed with or without the inclusion of food waste, depending of the outcome of the Desktop Food Waste Market Study.

Task B.4.2. Aeration and Blower Alternatives

Arcadis will develop and assess conceptual design alternatives for improving the process aeration and blower system. Alternatives will be generally categorized as following:

- Blower and DO control strategy modifications
- Aeration tank dropleg and control valves modifications
- Blower type (centrifugal turbo blowers vs. multistage centrifugal blowers similar to existing)

For each alternative, Arcadis will develop:

- Blower Quantity
- Blower Inlet air filtration requirements
- Spatial Needs for new blower room
- Electrical power and instrumentation and control requirements
- Blower room acoustic mitigation and ventilation requirements
- Simple payback evaluations based on energy and O&M costs or savings for each alternative
Task B.4.3. Odor Control Technology Alternatives

Arcadis will outline conceptual design alternatives for odor control technologies based on typical treatment systems for solids handling facilities of similar size and operation to that currently constructed at the Norwalk WPCF. The intent will be to provide a negatively pressurized solids handling building to capture and contain all odorous air from process areas, and convey it to a new odor control system. Final selection and recommendation of an appropriate odor control system cannot be completed until a new Solids Handling Building layout is developed, and treated air volumes can be determined. The outline of alternatives will include:

- Activated Carbon
- Biofiltration
- Wet Scrubbing

For each alternative, Arcadis will develop:

- Description of each treatment process
- Treatment capabilities for odorous compounds typically associated with solids handling
- System sizing limitations (i.e., maximum air volumes that can be treated)

Task B.5 Alternatives Development Workshop

Arcadis will present the findings of the developed alternatives to the WPCA for an overall discussion of available options and the advantages/disadvantages of each. The workshop will allow for confirmation and buy-in on the recommended approaches on which to base the subsequent detailed design. Arcadis will prepare an agenda, meeting materials for review and discussion, and meeting minutes from the workshop. Any WPCA comments will be reviewed and addressed prior to development of the final Solids Handling, Odor Control and Process Air System Alternatives Evaluation Report which will be developed under Task C.

Arcadis will develop an American Association of Cost Engineers (AACE) Class 4 Construction Estimate (1 to 15% level of project definition; -30% to +50% level of accuracy) for viable solids handling, odor control and process aeration alternatives.

Phase C - Alternatives Evaluation Report

Arcadis will prepare a Solids Handling, Odor Control and Process Air System Alternatives Evaluation Report. The report will document the processes undertaken to arrive at the recommended approaches and serve as a reference guide during subsequent detailed design stages. The report will contain the following information and memorandums which were developed under previous tasks:

- Task A.1.1 – Solids Mass Balance and existing process air blower capacity
- Task A.1.2 – Summary of Current Sludge Management
- Task A.2 – Kickoff Meeting Minutes
- Task A.3 – Summary of Existing System/Equipment Condition Assessments
- Task B.1 – Desktop Food Waste Market Study Technical Memorandum
- Task B.2 – Sludge Management and Disposal Alternatives Memorandum
- Task B.3 – Solids Handling System and Blower Design Criteria Technical Memorandum
Task B.4. – Summary of Alternatives for the following:
  o Solids Handling Alternatives
  o Aeration and Blower Alternatives
  o Odor Control Technology Alternatives

Task B.5. – Alternatives Development Workshop Meeting Minutes and AACE Class 5 Constructor Estimate for selected alternatives

Arcadis will provide a draft of the report for the WPCA to review and comment prior to finalization. Submission of the Final Solids Handling, Odor Control and Process Air System

**Project Schedule:**

All work shall be completed within the number of days indicated below.

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**Fee Schedule:**

Attached, please find the fee schedule for the services outlined above.

Arcadis shall provide all services on a Lump Sum by task basis for the amount indicated in the attached fee schedule. The fee schedule includes a breakdown of total hours per task, unburdened and billable rates from our approved rate schedule and includes direct costs.

The use of subconsultants is not anticipated for these services.
### Project Management/Project Administration

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### Task A.1.1 Review of Process Data and Operating Information

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### Task A.3 Existing System Evaluation

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**Task A.3 Lump Sum Total**: 182 hours, $27,899.00

### Task B.1 Desktop Food Waste Market Study

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**Task B.1 Lump Sum Total**: 122 hours, $15,080.00
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**Task B.2.1 Lump Sum Total**

| Total                                             | 38 | $6,892.00 |

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**Task B.2.2 Lump Sum Total**

| Total                                             | 143 | $25,436.00 |
### Task B.3 Develop Solids Handling System and Blower Design Criteria

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**Task B.3 Lump Sum Total:** 152 hours $23,022.00

### Task B.4.1 Solids Handling System Alternatives

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**Task B.4.1 Lump Sum Total:** 284 hours $39,983.00
## Task 8.4.2 Aeration and Blower Alternatives

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## Task 8.4.3 Odor Control Technology Alternatives

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Page 6 of 7
Norwalk Water Pollution Control Facility On-Call Services - Task Order No. 1
Solids Handling, Odor Control and Aeration Process Improvements at the Norwalk WPCF

Fee Schedule
Final - 8/30/2016

### Task B.5 Alternatives Development Workshop

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**Task B.5 Lump Sum Total**
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### Task C Alternatives Evaluation Report

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**Task C Lump Sum Total**
159
$20,819.00

**Task Subtotals**
1921.5
$287,629.00

**Total Fee**
$287,629.00
PROFESSIONAL SERVICES TASK ORDER

Task Order Number: 01
Task Order Date: July 21, 2016

Subject to the AGREEMENT FOR ON-CALL ENGINEERING SERVICES BY AND BETWEEN WATER POLLUTION CONTROL AUTHORITY OF THE CITY OF NORWALK AND WRIGHT-PIERCE (hereinafter referred to as the "Agreement"), WPCA hereby directs ENGINEER to perform the professional engineering services specified in this Task Order in accordance with the Agreement.

1. Project Description:

   Project Number: 
   Project Name: Pump Station Generator Replacement Evaluation
   Description: Conduct a preliminary evaluation of the Bouton Street, Howard Avenue, Karen Drive, Shady Beach, Srathmore Lane, and Westport Avenue Pump Stations to identify issues that should be considered when replacing the standby power generators at these stations.

2. Scope of Work:

   The Scope of Work to be performed hereunder consists of conducting preliminary evaluations of six of Norwalk’s wastewater pump stations where replacement of the existing standby power generators is planned by others. The goals of this review are to identify potential issues that should be considered when sizing replacement generators such as the need for larger pumps to accommodate future flows, and necessary enclosure ratings for associated equipment and is more fully described in the document entitled Scope of Work attached hereto as Exhibit A.

3. Time Schedule:

   Engineer shall complete the draft technical memorandum required by this Task Order within 90 calendar days of the date of this Task Order first written above and shall finalize the draft technical memorandum and complete the work required by this Task Order within 15 calendar days of receiving the WPCA’s comments on the draft technical memorandum.

4. Compensation:

   Engineer shall be paid for the proper performance of services described in this Task Order in an amount not to exceed Twenty Seven Thousand Three Hundred Fifty and 00/100 ($27,350) Dollars

5. Special Conditions:

   This Task Order is subject to the special provisions stated in Exhibit B, attached hereto and incorporated herein as if fully set forth herein.

6. Amendment:

   This Task Order amends a previously executed Task Order: N/A.
   Previous Task Order Number: N/A
   Previous Task Order Date: N/A

ISSUED AND AUTHORIZED BY:
WPCA
By: Ralph W. Post
Title: Sr. Environmental Engineer

ACCEPTED AND AGREED TO BY:
ENGINEER
By: 
Title: Vice President
PROFESSIONAL SERVICES TASK ORDER

Task Order Number: 01

Exhibit A: Scope of Work

**Background:**

As part of their ongoing operations and maintenance services to the Norwalk Water Pollution Control Authority (WPCA), OMI has obtained quotes from four vendors to replace the existing standby power generators and automatic transfer switches (ATS) at six wastewater pump stations. While the proposed equipment from each of the four vendors was generally the same for many of the pump stations, there were some differences in the size of the generator proposed for several stations as well as differences in the type of ATS enclosure proposed. The different price quotes also included differing scope items related to permitting, generator placement, and demolition requirements at specific stations.

Additionally, the WPCA has requested that Engineer begin preparing a scope of work to conduct an evaluation of all of Norwalk's wastewater pump stations and to develop a long-term capital improvement plan. As part of that long-term plan, the capacity of each pump station would be considered along with the necessary pump redundancy. The capacity evaluation would review the existing drainage area of each pump station, any planned future sewered growth within the drainage area, existing wet weather flows, how many pumps operate during peak flow condition, and wet well drawdown testing to determine the capacity of existing pumps.

The WPCA has requested that Engineer conduct a preliminary evaluation of the following six pump stations related to the generator replacement project:

- Bouton Street
- Howard Avenue
- Karen Drive
- Shady Beach
- Stratham Lane
- Westport Avenue

The goals of this preliminary evaluation are to:

- Discuss the overall condition of the station with WPCA and OMI staff to determine the likely hood of a particular station needing to be upgraded in the near future.
- Consider pump station sizing to evaluate the potential that larger pump motors will be required at any of these stations in the near future.
- Visit each station to understand the proposed generator location, potential code issues related to location and ventilation, and to understand conditions so that recommendations can be made as to the ATS enclosure appropriate for that space.
- Collect nameplate data for electric motors and other equipment at the station necessary to evaluate proposed generator sizing.

Based on discussions with the WPCA, Engineer understands that the intent is to replace the generators at these existing stations in the current locations and not to bring the entire station up to current code. The intent is also to identify the proper size for each generator and to consider the impact on generator sizing of the need to install larger pumps for increased capacity. It is also noted that the WPCA understands that the Shady Beach Pump Station is located below the 100-yr flood elevation and that flooding of this station could occur. However, the small residential area served by this pump station is also within the 100-yr flood and, if the pump station were to flood, any lots that discharge to the station would also be flooded. Therefore, the WPCA is not requesting Engineer to address flood protection at the Shady Beach Pump Station as part of this Scope of Work.
Scope of Work

Engineer shall provide the following services to meet these goals. These services have been grouped into four major tasks:

Task 1 – Initial Site Visit

Engineer shall conduct a one-day site visit to Norwalk including representatives from our wastewater process engineering and electrical engineering staff to review current conditions at each station. As part of this site visit, a workshop will be conducted with WPCA and OMI staff to discuss the overall condition of each station.

Task 2 – Preliminary Pump Station Capacity Evaluation

The purpose of this task will be to develop a preliminary evaluation of the capacity of each of the six pump stations, identify potential future planned flow increases within these stations’ drainage areas, and identify the potential for increasing the size of the pumps in any of these stations. This effort will be performed to determine if there would be a need for any larger size electric motors in any station that would impact sizing of the standby power generators. Under this task, Engineer would conduct the following specific efforts:

1. Utilizing the City’s existing GIS information, identify the contributing drainage area to each pump station. Request information from the WPCA and City planning staff as to whether there are any planned developments or sewer extensions in any of these six drainage areas. Work with City and WPCA staff to estimate future flow increase projections.
2. Review pump station run time and, if available, flow data. Identify if any of the existing stations require all pumps to be in service to accommodate peak wet weather flows. Each pump station should have the capacity to meet peak flows with the single largest pump out of service.

Task 3 – Confirm Pump Capacity (Optional Services)

The purpose of this task is to confirm the current pumping capacity of individual pumps at any of the stations that don’t appear to have the necessary redundancy. Due to the age of the six stations, it is possible that some of the pumps are operating at less than their original design flow capacity. As an optional service, for any of the six stations that may have planned flow increases or don’t have the necessary redundancy, as identified under Task 2, additional investigations will be required to determine if larger size pumps may be required that would impact the sizing of the proposed standby power generator. Another goal of this task is to determine if replacing the pumps and bringing them back to their original design capacity would be sufficient to meet future flows and redundancy requirements. Under this optional task, Engineer would provide the following specific services:

1. Conduct wet well drawdown tests to estimate the current pumping capacity of each pump and compare with the original design capacity. One person from Engineer would conduct the draw down tests with assistance from OMI to access and operate the pump stations. Prior to conducting pump tests, it is necessary that the WPCA verify the presence of or provide functional pressure gages on the suction and discharge side of each pump (discharge side only for submersible stations). The costs for providing and installing pressure gages, if required, is not included. We have budgeted for conducting draw down tests at up to three of the six stations.
2. Based on the review of existing pumping capacity and any planned future flow increases, identify if any pump stations may require increased pumping capacity. If so, review existing pump station and force main drawings to develop preliminary pump selection information. This information would be used to assist in sizing the generator to accommodate potential larger pumps in the future.

Task 4 –Vendor Information Review and Recommendations

Engineer will review the information provided by each of the generator suppliers as well as the current conditions at each of the six stations and the potential need for increased pumping capacity and make recommendations for specific equipment sizing and NEMA enclosure ratings. Specifically, under this task, Engineer will perform the following specific services:

1. Review the four equipment quotes and scope of work submitted by each supplier to replace the generators.
2. Identify any potential issues with replacing the existing generators in the same location. While we understand that the goal of the generator replacement project is to install new generators in the same location as the existing, if a more extensive upgrade to the station is warranted in the near future or other issues are identified, recommendations for relocating the generator to an alternate space or reconfiguring the current layout will be developed.

3. Based on the existing layout, condition of the stations, and ventilation within the generator spaces, evaluate the appropriate NEMA enclosure for the automatic transfer switch (ATS).

4. Based on the existing motor nameplate data, other electrical equipment to be powered by the generator, and the potential motor size for future, larger pumps, evaluate the recommended generator size for each station.

5. Prepare a draft technical memorandum summarizing our findings, conclusions and recommendations related to replacing the generators at these six stations.

6. Meet with the WPCA and OMI to review the findings in the draft memorandum and obtain comments and input on the recommendations.

7. Finalize the technical memorandum and submit to the WPCA.

Fee Schedule

Engineer will complete the scope of work for a not-to-exceed fee of $27,350 including labor and expenses. Attached is our Level of Effort Breakdown of our fee estimate utilizing the specific billing rates for the staff to be assigned to this project. These billing rates are based on a multiplier of 3.08 in accordance with the On-Call Services Agreement.

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PROFESSIONAL SERVICES TASK ORDER

Task Order Number: 01

Exhibit B: Special Conditions

There are no Special Conditions associated with this Task Order.
August 31, 2016

City of Norwalk WPCF
60 South Smith Street
East Norwalk, CT 06855

Re: Notice of Sale of Equivalent Nitrogen Credits

Dear Sir of Madam:

An electronic transfer has been made to the City of Norwalk for the sale of nitrogen credits. The Department of Energy and Environmental Protection in consultation with the Nitrogen Credit Advisory Board established the annual value of an equivalent nitrogen credit of $7.14 for the calendar year 2015. This value was derived as specified in Connecticut General Statutes 22a-524 by dividing the total annual project cost for nitrogen removal projects at Connecticut sewage treatment facilities by the reduction in equivalent pounds of nitrogen achieved. Your facility removed nitrogen to a level that is below the required level established in the General Permit. Therefore, your facility benefits from the sale of equivalent nitrogen credits that have been generated. The amount for the nitrogen credits sold by the City of Norwalk for 2015 is $351,824.

As a reminder to all Water Pollution Control Authorities receiving funds from the sale of nitrogen credits through the Nitrogen Trading Exchange Program, Connecticut General Statutes 7-267 describes the separate accounting and use of funds from the use of the sewerage system. It is the Department’s position that these funds are to remain with and be utilized by the Water Pollution Control Authority to benefit the operation, maintenance and improvement of the water pollution control facilities of your municipality.

The Department and Nitrogen Credit Advisory Board congratulate you on a successful year in the operation of your facility in removing nitrogen. Continued operation of your facility for high levels of nitrogen removal will help in achieving the long-term goals for Long Island Sound.

Should you have any questions regarding the use of funds from the sale of credits or believe there is an error in your check or electronic transfer, please contact Iliana Raffa of the Department’s Bureau of Water Protection and Land Reuse at 860-424-3758 or email her at (iliana.raffa@ct.gov).

Sincerely,

Betsey Wingfield
Bureau Chief
Bureau of Water Protection and Land Reuse
Mr. Ralph Kolb, P.E.
Sr. Environmental Engineer
Norwalk Water Pollution Control Authority
15 South Smith Street
Norwalk, CT 06855

Subject:
Year 2015-2016 Contract Operations Monitoring Services
Final Wastewater Treatment System Performance Evaluation Report

Dear Mr. Kolb:

ARCADIS U.S., Inc. (Arcadis) is pleased to finalize the Wastewater Treatment System Performance Evaluation Report (Report) for the evaluation period of May 1, 2015 through March 31, 2016. This report was developed in accordance with the contract services defined in Article V - Section 5.15 Annual Inspection of the Wastewater Treatment System Agreement (Agreement) between the Water Pollution Control Authority (WPCA) and Operations Management International, Inc. (OMI) for their 16th year (Contract Year 16) of System operation.

As discussed, this Contract Year 16 Report has been issued as final with no modifications made to the Draft Report content as issued in June 16, 2016. In response to the WPCA Board's recent comments regarding the content and presentation of the Report analysis, Arcadis will be requesting a meeting with the WPCA in anticipation to the development of the Fiscal Year 2016-2017 Performance Evaluation Report to identify the necessary improvements that meet both the Contract monitoring requirements and the WPCA's evaluation needs.

The Contract Year 16 Report provides an assessment of OMI's operations practices related to the requirements of the Agreement and equipment condition reporting based on visual observations for the aforementioned evaluation period. It documents our observations and general recommendations based on our March and April 20'6 site inspections of the Norwalk Wastewater Treatment Facility and selected system Pump Stations.

Arcadis appreciates the opportunity to continue to work with the WPCA for the City of Norwalk on this project and support its initiatives for the long-term preservation of its wastewater system assets. We look forward to meeting if you have any questions regarding the enclosed Report, please do not hesitate to contact us.

Imagine the result
Sincerely,

ARCADIS U.S., Inc.

Catherine Mallon Traynor
Vice President

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