Agency-Wide Technical Assistance – Special Services Task Orders

Nut Island Water Supply Alternative
Use Existing Tank and Quincy Water Supply

Nut Island Fire Protection

- Analyses
- Design and Permitting
Nut Island Fire Pump Replacement

- Design and ESDC

Newly Installed Nut Island Fire Pump

Newly Installed Nut Island Fire Pump Controller
Cathodic Protection Replacement Shaft 5A/5

- Design/Bid
- Limited ESDC
- Survey
Agency-Wide Technical Assistance – Completed Task Orders

Quincy and Hingham Pump Stations Fuel Tank Replacement

- Site Evaluation
- Design
- Bidding
- Limited ESDC

Completed Quincy Fuel Tank Replacement
Agency-Wide Technical Assistance – On Going Task Orders

General Edwards Bridge Water Main Removal

- Design
- Permitting
- Bidding
- ESDC
Agency-Wide Technical Assistance – On Going Task Orders

Painting for Deer Island, Turkey Hill, and Bellevue II Steel Water Storage Tanks

- Design and Bidding
- Limited ESDC/Testing – Deer Island

Deer Island Water Storage Tank

Turkey Hill Water Storage Tank - Arlington

Bellevue II Water Storage Tank – West Roxbury
<table>
<thead>
<tr>
<th>PROPOSER</th>
<th>ORDER OF PREFERENCE</th>
<th>FINAL RANKING</th>
<th>SAMPLE COST EXERCISE</th>
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<tbody>
<tr>
<td>Hazen and Sawyer, P.C.</td>
<td>5</td>
<td>1</td>
<td>$1,726,188.14</td>
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<tr>
<td>Kleinfelder Northeast, Inc.</td>
<td>11</td>
<td>2</td>
<td>$1,888,519.50</td>
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<td>CDM Smith Inc.</td>
<td>18</td>
<td>3</td>
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<td>Stantec Consulting Services Inc.</td>
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<td>$1,762,403.96</td>
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<tr>
<td>Arcadis U.S., Inc.</td>
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<td>5</td>
<td>$1,970,327.04</td>
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<td><strong>Engineer’s Estimate</strong></td>
<td>-</td>
<td>-</td>
<td><strong>$1,708,970.00</strong></td>
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</table>
**Contract 7498 and 7604**

<table>
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<tr>
<th>CONTRACT NUMBER</th>
<th>CONSULTANT</th>
<th>BUDGET</th>
<th>DURATION</th>
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<tbody>
<tr>
<td>7498</td>
<td>Hazen and Sawyer, P.C.</td>
<td>$2.5 M</td>
<td>24 Months</td>
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<tr>
<td>7604</td>
<td>Kleinfelder Northeast, Inc.</td>
<td>$2.5 M</td>
<td>24 Months</td>
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</tbody>
</table>
Repair of Three Digester Mixer Assemblies at Deer Island

April 18, 2018
Egg-Shaped Digesters
Mixer assembly after sandblasting, showing substantial impeller wear and pitting
Gravity Thickener Rehabilitation
Deer Island Treatment Plant
Contract 7428

April 18, 2018
Where Are Gravity Thickeners In The Deer Island Process?

Existing Solids Process Flow Diagram

6 Units: 70 feet in diameter, conical-bottomed, covered for Odor Control
Function: Concentrate primary sludge and scum using gravity
Pump thickened primary sludge from bottom, thickened scum from top surface – to anaerobic digesters (70% of total digester feed)
Sludge settling aided by circular motion of inner support structure.
• **Gravity Thickener Rehabilitation**
  – Replace 5 of 6 FRP covers
  – Replacement of Scum/Sludge Mechanical Equipment
  – Concrete remediation/coating
  – Replacement of GT No 3, 4 and 5 Walkways

• **Digested Sludge and Gas Storage Tank No 1**
  – Replace 16” isolation valves
Exterior Improvements

Replace Existing Access Walkways (Tanks 3, 5 & 6)
Replace Drive Units
Replace Access Bridges and FRP Dome Covers
Interior Improvements

Effluent Launder Concrete Repair
(Tanks 3, 4, 5 & 6)

New Center Cage/Column, Rare Arms & Feed Well
Distor No. 1 Improvements

Valves and Controls added for improved reliability
• **Gravity Thickener Rehabilitation**
  – Covers manufacturers certified by Fiberglass Reinforced Plastics Institute (FRPI)
  – Use of stainless steel 316L in lieu of painted carbon steel
  – Use of advanced coating systems

• **Digested Sludge and Gas Storage Tank No 1**
  – Glass lined redundant valves
Three Bids received on March 28, 2018

Bid Results:

<table>
<thead>
<tr>
<th>Company</th>
<th>Bid Amount</th>
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<tbody>
<tr>
<td>Engineer’s Estimate</td>
<td>$18,715,222</td>
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<td>Methuen Construction</td>
<td>$19,256,800</td>
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<tr>
<td>withdrew bid</td>
<td></td>
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<tr>
<td>Walsh Construction Co. II</td>
<td>$19,633,050</td>
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<tr>
<td>Barletta Heavy Division, Inc.</td>
<td>$35,000,000</td>
</tr>
</tbody>
</table>

Lowest Responsible Bidder: **Walsh Construction Co. II $19,633,050**
Fire at DCR-Quabbin Watershed Facility

April 18, 2018
DCR Quabbin Field Office, 21 Elm Street, New Salem

Destroyed By Fire April 6, 2018
Two Alarm Fire: 14 Area Fire Departments, 54 Firefighters Responded

Photo - Worcester T&G
Water Supplied From Local Ponds: 40,000 Gallons Used

Photo - Worcester T&G
Ten DCR Personnel Temporarily Re-assigned to Quabbin Admin Building
Five Vehicles Lost
Small Equipment and Tool Losses
Cause of Fire Not Known
Recovery Efforts

• MWRA:
  – Erected temporary fencing to secure the site
  – Loan of two vehicles
  – Will assist in recovery

• DCR:
  – Assessment of financial impact underway
  – Completed inventory of lost tools/equipment
  – Temporary re-assign vehicles from within DCR fleet
  – Pursuing temporary job trailer for site
  – Met with DCR site clean-up contractor
  – Looking at modular office building as permanent replacement
Wachusett Aqueduct Pumping Station Construction Progress

Contract 7157

April 18, 2018
CONSTRUCTION UPDATE – Surge Tank
CONSTRUCTION UPDATE – Surge Tank
Solar Panels

- Increase to 300 watts / 1000 volt panels
- Maintain Same Number of Panels
- Eliminates Panels on Covered Storage
- Increase Power Generation by 13.5 KW
- Estimated Cost to Upgrade - $10,000
- Pay Back Period - 6 Years
• Add Rip Rap to North Side of Fore Bay
• Dredge Sediment from Fore Bay Channel
• Amend Permits from DEP and ACOE
• Provide Temporary Erosion Control across Fore Bay Channel and North Shore to Allow Pump Testing
Tentative Schedule to Support Testing

- Field Test Control Valves: Done
- Rotate Pump Motors: Done
- Concrete Inlet Channel Spillway: April
- Concrete Surge Tank Spillway: April
- Clean Inlet Channel: April
- Hultman By-Pass: May
- Fore Bay Rip Rap and Temp Erosion Control: May
- Run Individual Pumps: May
- Noise / Vibration Testing: May
- Surge Tank Precast and Roof: June
- Run Multiple Pumps: August / September
- SCADA/Security Monitoring Testing: September – November
- System Operation Testing: October - December
## Budget & Schedule Tracking FY 2018

<table>
<thead>
<tr>
<th>Actual Expenditure as of 02/28/18</th>
<th>$ 40,077,874</th>
<th>81.8%</th>
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</thead>
<tbody>
<tr>
<td>Time Elapsed</td>
<td>730 days / 1080 days total</td>
<td>66.5%</td>
</tr>
</tbody>
</table>

### Data Summary
- **Actual Expenditure as of 02/28/18**: $40,077,874, representing 81.8% of the total.
- **Time Elapsed**: 730 days, which is 66.5% of the total 1080 days.
Questions
BC’s Proposed Walking Path at Pine Tree Preserve