Newtown Creek WWTP
South Battery Upgrade

American Academy of Environmental Engineers and Scientists

April 25, 2013
Overview

• Location / Service Area
• History of Newtown Creek WWTP
• “Track 3” Upgrade Plan
• Project Schedule & Costs
• Innovative Design
• Quality Design for Operations
• New Control Building
• Sustainable Design
Location / Service Area

<table>
<thead>
<tr>
<th>Water Pollution Control Plants</th>
<th>Area No.</th>
<th>Location</th>
<th>Capacity (MGd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>1</td>
<td>Bowery Bay</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Hains Point</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Tottman Island</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Wets Island</td>
<td>275</td>
</tr>
<tr>
<td>South</td>
<td>5</td>
<td>Newington Creek</td>
<td>310</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>North River</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Oakwood Beach</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Port Richmond</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Red Hook</td>
<td>60</td>
</tr>
<tr>
<td>East</td>
<td>10</td>
<td>Joe Ward</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Coney Island</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Jamaica</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>Oude Head</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Rockaway</td>
<td>45</td>
</tr>
<tr>
<td>Total</td>
<td></td>
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<td>1905</td>
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</tbody>
</table>

Legend:
- W.P.C.P.
- Service Area Boundary
- Service Area Number
- Plant is Desalinating

Staten Island
- Lower Bay
- Upper Bay
- The Narrows
- East River
- Harbor
- New York Harbor

Atlantic Ocean

Tri-Venture Design Team
History of Newtown Creek WWTP

1967
Plant Built

1972
Clean Water Act

1980
Facility Plan developed to meet requirements of CWA

1984
EPA "National Municipal Policy" requires that all WTP comply with CWA of 1972

1988
Judgment on Consent

310 MGD (dry flow)
70% Removal of TSS
60% Removal of BOD
History of Newtown Creek WWTP

1967
Plant Built

1972
Clean Water Act

1980
Facility Plan developed to meet requirements of CWA

1984
EPA “National Municipal Policy” requires that all WPTP comply with the CWA of 1972

1988
Judgment on Consent

Requires Secondary Treatment
85% Removal of BOD and TSS
History of Newtown Creek WWTP

1967
Plant Built

1972
Clean Water Act

1980
Facility Plan developed to meet requirements of CWA

1984
EPA “National Municipal Policy” requires that all WPCP comply with the CWA of 1972

1988
Judgment on Consent

1988
NYSDEC identifies Newtown Creek as one of 41 non-complying WPCPs. Requires Upgrade Completed by 12/31/1996
History of Newtown Creek WWTP

• Recommended Two Alternative Plans:
  • Track 1-Step Denitrification
  • Track 2-Biofilters
• Performed Pilot Test of Biofilters
• Track 1 required until June 30, 2010 to achieve Secondary Treatment

1991
State
Rescinds
Approval of
Facility Plan

1995
Modified
Judgment of
Consent
Facility Plan
Track 3 Facility Plan recommend and submitted to DEC in July 1998.
- Less Costly than Track 1 and Track 2.
History of Newtown Creek WWTP

Achieved Secondary Treatment Standards Ahead of Schedule 5/31/2011
• TSS removals consistently greater than 85%
• CBOD removals consistently greater than 80%
• Successfully managed Wet Weather Flows.

2011
Achieved Secondary Treatment
“Track 3” Upgrade Plan
Site Coordination

<table>
<thead>
<tr>
<th>CONTRACT NUMBER</th>
<th>CONTRACT DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>PHASE 1A</td>
<td>31</td>
</tr>
<tr>
<td>27</td>
<td>Citi Building and Site Work</td>
</tr>
<tr>
<td>28</td>
<td>Demolition and Site Preparation</td>
</tr>
<tr>
<td>29</td>
<td>Reconstruction of Kingsland Avenue, Stage 1</td>
</tr>
<tr>
<td>30</td>
<td>Main Building South Addition</td>
</tr>
<tr>
<td>31</td>
<td>32 Edison Feeders</td>
</tr>
<tr>
<td>32</td>
<td>Solids Handling Facilities</td>
</tr>
<tr>
<td>33</td>
<td>Centrifuges</td>
</tr>
<tr>
<td>34</td>
<td>Support Building and Disinfection Facilities</td>
</tr>
<tr>
<td>35</td>
<td>Centrifuge Automation and Upgrade</td>
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<tr>
<td>PHASE 1B</td>
<td>36</td>
</tr>
<tr>
<td>37</td>
<td>North and North Central Batteries</td>
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<tr>
<td>38</td>
<td>North Battery Foundations</td>
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<td>39</td>
<td>Main Building North Modifications</td>
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<tr>
<td>40</td>
<td>Manhattan Pump Station Upgrade</td>
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<td>41</td>
<td>Main Building Northwest Wing Modifications</td>
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<tr>
<td>PHASE 2</td>
<td>42</td>
</tr>
<tr>
<td>43</td>
<td>Central Residuals Building</td>
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<tr>
<td>44</td>
<td>Central Residuals Building Foundation and Demolition</td>
</tr>
<tr>
<td>PHASE 3</td>
<td>45</td>
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<tr>
<td>46</td>
<td>South Central Battery of Grit, Aeration and Final Tanks</td>
</tr>
<tr>
<td>47</td>
<td>South Battery of Grit, Aeration and Final Tanks and South Control Building</td>
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<tr>
<td>48</td>
<td>Final Site Work (Includes Reconstruction of Kingsland Avenue, Stage 2)</td>
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<tr>
<td>49</td>
<td>Sludge Force Main and Loading Dock</td>
</tr>
<tr>
<td>50</td>
<td>140,000 cu. ft. Sludge Ship (3)</td>
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<tr>
<td>51</td>
<td>Process Wrap-Up of Newtown Creek</td>
</tr>
<tr>
<td>52</td>
<td>Nature Walk Phase 2 and 3</td>
</tr>
</tbody>
</table>

*EXHIBIT 1

*CONSENT ORDER RELATED PROJECT (BD)
Project Schedule & Costs

Schedule
- Notice To Proceed 9/2/2008
- Consent Order Completion 10/31/2012
- Actual Date of Completion 7/31/2012

Cost
- Construction Contract Price $724,000,000
- Actual Construction Project Cost $743,451,000
Quality Design for Operators
New Control Building
Control Building Interior
Control Building Roof
Control Building Basement
Sustainable Design
Nature Walkway
Acknowledgements

Nat J. Federici, NYCDEP
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Questions?