Bay Park Sewage Treatment Plant
Super Storm Sandy Recovery

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County Executive

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Bay Park Sewage Treatment Plant
General Background Information

- Bay Park Sewage Treatment Plant originally constructed in 1949.
- Major expansions and upgrades during 1960’s and 1980’s.
- Current permitted capacity is 70 MGD.
- Current average daily wastewater flow is 50 MGD.
- The plant serves a population of approximately 550,000.
SUPER STORM
SANDY IMPACT
On October 29, 2012, as a result of Super Storm Sandy and the accompanying storm surge, at approx. 8 pm the Bay Park STP begins to flood and at approx. 10 pm the Bay Park STP goes off-line.

Nassau County immediately mobilizes a team of Public Works employees, engineering consultants and construction contractors to begin damage assessment and restoration of wastewater treatment.

The Bay Park STP remains off-line for approx. fifty-six (56) hours.

On November 1, 2012, at approx. 6 am, wastewater flow through the Bay Park STP is restored.

The initial treatment processes include: raw sewage pumping, influent screening, grit removal, primary settling and disinfection.
Bay Park Sewage Treatment Plant
Influent Pumping Facility ~ Flooding
Bay Park Sewage Treatment Plant
Outfall Tide Pump Facility - Flooding
Bay Park Sewage Treatment Plant
Tunnel Access Stairway ~ Flooding
SUPER STORM SANDY RECOVERY
Bay Park Sewage Treatment Plant
Removing Flood Waters
Bay Park Sewage Treatment Plant

Clean-Up and Disinfection
Bay Park Sewage Treatment Plant

Documenting and Assessing Damage
Bay Park Sewage Treatment Plant

Re-Powering and Emergency Repairs
Bay Park Sewage Treatment Plant
Recovery Timeline for Process Equipment

<table>
<thead>
<tr>
<th>Treatment Process/Equipment</th>
<th>Date</th>
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<tr>
<td>Influent Pumping/Raw Sewage Pumps</td>
<td>Nov 1, 2012</td>
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<tr>
<td>Influent Screens, Grit Removal, Primary Settling and Disinfection</td>
<td>Nov 1, 2012</td>
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<tr>
<td>Outfall Pumping/Temporary Pumping System</td>
<td>Nov 1, 2012</td>
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<tr>
<td>Aeration Tanks/Process Air Blowers</td>
<td>Nov 6, 2012</td>
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<tr>
<td>Sludge Digestion/Digesters, sludge pumps, and gas compressors</td>
<td>Nov 12, 2012</td>
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<tr>
<td>Sludge Dewatering/Temporary Dewatering System</td>
<td>Nov 12, 2012</td>
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<tr>
<td>Dechlorination System</td>
<td>Nov 15, 2012</td>
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<tr>
<td>Primary Sludge Pumping</td>
<td>Nov 16, 2012</td>
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<tr>
<td>Outfall Pumping/Effluent Tide Pumps</td>
<td>Nov 20, 2012</td>
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<tr>
<td>Secondary Treatment/Final Settling, RAS and WAS Pumping</td>
<td>Nov 21, 2012</td>
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<tr>
<td>Sludge Thickening/Temporary Gravity Belt Thickeners</td>
<td>Nov 26, 2012</td>
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</tbody>
</table>
INFLUENT SEWER

INFLUENT SCREENING

RAW SEWAGE PUMPING

GRIT REMOVAL

PRIMARY SETTLING

SLUDGE THICKENING

SLUDGE DIGESTION

SLUDGE DEWATERING

FILTRATE

DECHLORINATION

SCREENING & DISINFECTION

FINAL SETTLING

AERATION TANKS

WAS PUMPING

RAS PUMPING

OUTFALL PUMPING

OFF SITE DISPOSAL

TO OUTFALL

INFLUENT

October 30, 2012
Bay Park Sewage Treatment Plant

Process Flow Diagram

November 15, 2012
Process Flow Diagram

Bay Park Sewage Treatment Plant
November 20, 2012

Process Flow Diagram

Bay Park Sewage Treatment Plant
TREATMENT PLANT PERFORMANCE
Bay Park Sewage Treatment Plant - Effluent Data
Total Suspended Solids (TSS) and Carbonaceous Biochemical Demand (CBOD)
Monthly Average (mg/l)

- **TSS Permit Limit**: 30 mg/l
- **CBOD Permit Limit**: 25 mg/l

[Graph showing monthly average of TSS and CBOD concentrations from November to October.]
Bay Park Sewage Treatment Plant - Effluent Data
Total Suspended Solids (TSS) November Daily Results (mg/l)

TSS Permit Limit: 30 mg/l
Bay Park Sewage Treatment Plant - Effluent Data
Carbonaceous Biochemical Oxygen Demand (CBOD) November Daily Results (mg/l)

CBOD Permit Limit: 25 mg/l
Bay Park Sewage Treatment Plant - Effluent Data
Total Suspended Solids (TSS) December Daily Results (mg/l)

TSS Permit Limit: 30 mg/l

- FST carry-over of solids; additional PST in-service
- FST #5 OOS; Drained and Repaired

Effluent Conc. (TSS)
Bay Park Sewage Treatment Plant - Effluent Data
Carbonaceous Biochemical Oxygen Demand (CBOD) December Daily Results (mg/l)

Permit Limit (CBOD): 25 mg/l

FST #5 OOS; Drained and Repaired

CBOD Permit Limit: 25 mg/l
Bay Park Sewage Treatment Plant - Effluent Data
Total Suspended Solids (TSS) and Carbonaceous Biochemical Demand (CBOD) Removal Percentage

Permit Requirement: 85%
CONTINUING THE RECOVERY
Bay Park Sewage Treatment Plant
Recovery Plan ~ Next Steps

- Completion of Emergency Repair Projects
- Develop Permanent Repair Projects
- Identification of Mitigation Measures
- Extreme Weather and Climate Change Assessment