The Bay Park Conveyance Project
Protecting Our Community for the Future

Long Island South Shore Estuary Reserve Council Meeting
October 21, 2020
The Western Bays

The Problem

Over time, nitrogen from treated wastewater has built up and caused an imbalance in the ecological system.


2. Insufficient dissolved oxygen levels for aquatic life (hypoxia).

3. Decaying animal and plant life.
The Solution

Reduce Nitrogen Pollution in Western Bays
The Bay Park Conveyance Project

The purpose of the Project is to convey treated water from the Bay Park Sewage Treatment Plant to Cedar Creek Water Pollution Control Plant ocean outfall. Benefits include:

**Storm Protection**
Spur the rapid ecological recovery of the Western Bays marshlands which will protect coastal communities from storm surge and sea level rise

**Quality of Life Factors**
Maximize quality of life by providing residents a place to work and play

**Economic Benefits**
The ecological recovery of the Western Bays and improved water quality will enhance and expand water-based recreational and commercial opportunities
Accelerating Construction

Efficiently implement the project by utilizing NYSDEC’s design-build authority

- Two-step process with a Request for Qualifications (RFQ) and Request for Proposals (RFP)
- Ensures use of qualified engineers and contractors
- Ensures the selected Design-Builder designs and builds what the County needs
Addressing Construction Impacts

Using innovative methods – such as microtunneling and sliplining – to minimize potential disruptions

Once construction begins, the Design-Builder and outreach team will:

• Provide regular construction updates
• Provide advance notification of any disruptive work or road closures
• Maintain a 24/7 hotline for the community to communicate with the Design-Builder
• Implement Work Zone Traffic Control Plans
• Maintain access to existing businesses
• Create and implement a dust management plan, and a community noise and vibration monitoring program
Engagement Moving Forward

Public Outreach and Communication are Cornerstones of the Project

Regular Meetings
- Stakeholder Meetings (environmental groups, civic associations, school districts, emergency services, etc.)
- Business Stakeholder Meetings (Chambers of Commerce, individual businesses)
- General Public Meetings

Communication Tools
- Website – www.bayparkconveyance.org
- Direct outreach to impacted or interested members of the public
- E-Newsletters, factsheets, and social media updates during project construction
Timeline

We Are Here

DESIGN

Preliminary Design Completed

REAL ESTATE

Start of EDPL Process
February 2020

Properties Acquired

ENVIRONMENTAL REVIEW

Start of Environmental Assessment Review
Summer 2020

EDPL PROCESS

Environmental Assessment Complete
Fall 2020

PUBLIC OUTREACH

EDPL Hearing
February 2020

Virtual Public Meeting
July 2020

Next Public Meeting
November 2020

PROCUREMENT

SOQ Completed and RFP Issued
April 2020

Technical and Price Proposals
September 2020

Best Value Proposer Selected
October 2020

Plan for County Legislative Approval
November 2020

Notice to Proceed
Early Spring 2021

Design Builder Starts Final Design
A Closer Look – Nitrogen Reduction
Bay Park STP Process Flow Diagram

Pre-chlorination

Screenings

Grit

Primary Sludge

Conventional Activated Sludge with BNR

Secondary Sludge

Gravity Belt Thickener

Anaerobic Digestion

Sidestream

Centrifuge Dewatering

Hypochlorite Disinfection

Treated water discharge

Solids disposal
Water Quality is a Priority

Current Parameters that are Tested

Pursuant to SPDES permit, frequent testing parameters include:

• Biological Oxygen Demand (BOD)
• pH
• Volatile and semi-volatile organic compounds
• Suspended solids
• Metals
• Nitrogen, phosphorus, chlorine
• Coliform

All parameters recently tested show values well below applicable thresholds.
Nitrogen Reduction Actions

• Nassau County has taken steps to reduce nitrogen through Bay Park STP upgrades

• BNR Level 1
  • Upgrades to existing treatment facility to create conditions in which ammonia can be converted to harmless nitrogen gas

• Sidestream Deammonification
  • Sludge is typically dewatered before it is sent to a landfill for proper disposal. The water removed from the sludge is typically high in nitrogen.
  • Sidestream treatment refers to treating this nitrogen rich water before it is returned to the beginning of the treatment process.
Actions to Remove Nitrogen

BNR L1
26 mg/l → 13

$20M

BNR L2

$35M

Sidestream
13 mg/l → 10

BNR L3
10 mg/l → 4

$500M

BNR L4
10 mg/l → 2

$1B

BIG JUMP IN COSTS

BIG JUMP IN COSTS
**BNR Level 1**

- Contract Bid Price: $20 million
- Currently removing an additional 5,000 lbs/day, representing a **>40% reduction** in nitrogen discharged to Reynolds Channel

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notice to Proceed</td>
<td>July 5, 2017</td>
</tr>
<tr>
<td>Substantial Completion</td>
<td>April 30, 2020</td>
</tr>
<tr>
<td>State Mandated Start Up Period</td>
<td>June 1, 2020</td>
</tr>
<tr>
<td>12 Month Performance Period will set new nitrogen effluent standards</td>
<td>January 1, 2021</td>
</tr>
</tbody>
</table>
BNR Level 1 Components

Photo 1: Mixer and Air Diffusers

Photo 2: Surface wasting system

Photo 3: Anoxic zone baffle
Sidestream Deammonification

- Contract Bid Price: $35 million
- Small treatment plant to be constructed next to dewatering facility, will remove up to 85% of nitrogen from sidestream flow
- Upon completion, start up and performance periods with new standards as was done for Level 1 BNR

<table>
<thead>
<tr>
<th>Notice to Proceed</th>
<th>December 31, 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipated Completion</td>
<td>Q4 2021</td>
</tr>
</tbody>
</table>
Sidestream Deammonification

Photo 1: Construction Progress: Pile Foundation Installation
Thank You!

bayparkconveyance.org/contact-us