Tibbetts Brook Daylighting Project

Located in the Borough of The Bronx, NY

DEP ID#: GX-P-TIBB

PDC Conceptual Review
Tibbetts Brook Daylighting:

- Restores the hydraulic connection between Tibbetts Brook and the Harlem River
- Reduces annual CSO volume by up to 215-220 million gallons per year (MGY)
  - The proposed open channel would be designed for a baseflow of 7 cubic feet per second (cfs) and a maximum wet weather flow of 38 cfs
- Improves ecology through enhancement around Hester and Piero’s Mill Pond and along daylighted Tibbetts Brook channel
- Enhances recreational opportunities with extension of Putnam Greenway along the stream corridor
1. Existing Weir Structure and Gate Valve Manhole at Southwestern Corner of Lower Hester and Piero’s Mill Pond Connecting to Broadway Sewer
2 - Viewing opportunity on top of historic dam located west of the Old Putnam Trail footbridge looking over proposed daylighting location.
3 – Existing weir with future side weir/viewing platform location in the background
3 – Retained Side of Historic Dam and Location of Proposed Outlet to Open Channel

4 – Proposed Start Location of Daylighted Channel

Site Photos
6 – Pathway crossing under Putnam Trail Crossing Railroad Bridge

7 – Underside of Putnam Trail Crossing Railroad Bridge
Key Plan

5 – Connection to boardwalk south of Tibbetts Wetland
8 – Old Putnam Trail with Historic Rail Ties

9 – Chain Link Fence on west side of proposed daylighting location in southern part of Van Cortlandt Park
10 – Location of Proposed Daylighting with Van Cortlandt Park South Bridge in Background

11 – Start of CSX Property and Continuation of Proposed Daylighting
Site Photos

Key Plan
12 – Start of CSX Property and proposed ramp area
13 – CSX corridor adjacent to Riverdale Crossing
14 – Street view of CSX Property and Adjacent Building from Major Deegan Expressway
15 – Street view of CSX Property and Adjacent Parking Lot from Major Deegan Expressway
16 – Street view of CSX Property and Adjacent Property from Major Deegan Expressway
17 – Location of Proposed Daylighting along CSX Corridor between 232nd Street and W 231st Street

18 – Location of Proposed Daylighting along CSX Corridor between Verveelen Place and W 231st Street
Project Overview
Tibbetts Brook Daylighting Alignment
Proposed Circulation – Van Cortlandt Park

Legend
- Opportunities to Reconnect Circulation
- Existing Circulation to Remain
- Existing Circulation to be Removed
- Greenway Access Location
- Greenway Access Under Evaluation
Sections and Renderings
1 – Perspective Rendering of proposed side weir (before and after)
2 – Perspective Rendering of start of the proposed daylighting from the top of the historic dam at Hester and Piero’s Mill Pond
Van Cortlandt Park – Typical Stream Design

Key Plan

- Pocket Wetland, typ.
- Open Stream Channel
- Floodplain
- Pool
- Schematic of Riffle and Pool Morphology
- Typical Riffle and Pool Morphology
- Typical pocket wetland

Legend:

- Pocket Wetland, typ.
- Pool
- Riffle
- Typical Pocket Wetland
The overlook will have a view of the adjacent pocket wetland and contain opportunities for educational signage.
Section A-A1: Stream Channel with Wetland Expansion, Overlook, and Pocket Wetland

Key Plan

Section View A-A1 – Van Cortlandt Park
The Jerome Park Reservoir Blowoff Manhole is located at the southeastern end of Van Cortlandt Park. A maintenance path to the manhole will be extended and gated off.
CSX Corridor
The City is in the process of acquiring the CSX property (Van Cortlandt Park South to W. 230th St)

**Seven** Greenway access locations will be provided along the 1-mile-long daylighting stretch of Tibbetts Brook

- Access from path within Van Cortlandt Park near Van Cortlandt Park South is being evaluated based on tree impacts
- Access at W 236th St/W 237th St is being evaluated – requires easement through private property
- Access to Albany Crescent for potential future DOT greenway connection being evaluated
Site Plan – VCP South to 237th St

- **ROW Width Range:** 28’ – 63’
- **Key Plan**
- **Underpass space:** Design decisions pending site visit, typ.
- **10’ wide path, typ.**
- **Channel Width 14’ wide**
- **Minimal clear space adjacent to stream and greenway to fit access**
- **Transition to cantilever path and narrow stream channel design**
- **Pool**
- **Ripple**
- **Channel Width 30’ wide**
- **Plaza:** Provides gathering space and educational signage opportunities
- **Step feature to top of stream planting zone:** Provides gathering space and educational signage opportunities

**Legend**
- Shared Pathway
- Pools and Riffles within Open Channel
- Low Herbaceous Vegetation
- Woody Vegetation and Room for Seating
- Space to be Determined Pending Site Visit
- Ramp Landing

**Van Cortlandt Park South**
239th Street
238th Street
Ramp connection from 239th Street
Space for benches and enhanced planting
Space to be Determined Pending Site Visit
Shared Pathway
Pools and Riffles within Open Channel
Low Herbaceous Vegetation
Woody Vegetation and Room for Seating
Space to be Determined Pending Site Visit
Ramp Landing
Legend
- Shared Pathway
- Pools and Riffles within Open Channel
- Low Herbaceous Vegetation
- Woody Vegetation and Room for Seating
- Space to be Determined Pending Site Visit

**ROW Width Range:**
28’ – 33’
Site Plan – 234th St to 232nd St

Underpass space. Design decisions pending site visit, typ.

10’ wide path, typ.

Space for benches

Transition wide stream channel design, some cantilever pathways continue

234th St access will have access, format still under design

ROW Width Range: 25’ – 46’

Legend
- Shared Pathway
- Pools and Riffles within Open Channel
- Low Herbaceous Vegetation
- Woody Vegetation and Room for Seating
- Space to be Determined Pending Site Visit

Key Plan

Space to be Determined Pending Site Visit

Shared Pathway

Pools and Riffles within Open Channel

Low Herbaceous Vegetation

Woody Vegetation and Room for Seating

Space to be Determined Pending Site Visit

Channel Width 24’ wide

Major Deegan Expressway

Matchline D-D

Matchline C-C

Space for benches

Site Plan – 234th St to 232nd St

NYC Parks

Environmental Protection
Site Plan – 232nd St to 230th St

ROW Width Range: 38’ – 40’

Maintenance Compatible Entrance Ramp Connecting to Roadway at Verveelen Place

Pipe to MNRR property/existing outfall

Shared Pathway

Pipe to MNRR property/existing outfall

Pools and Riffles within Open Channel

Low Herbaceous Vegetation

Woody Vegetation

Space to be Determined Pending Site Visit

Intake structure

Channel Width 21’ wide

Accessible ramp connection from Verveelen Place

Fence

Maintenance Path to intake structure

Short, ornamental planting or lawn opportunity

Legend

NYC Parks
Sections and Renderings
Typical Wide Cross Section With Greenway

- **21-30' Channel**
- **Existing Concrete Wall**
- **Major Deegan Expressway On Ramp (Elevation Varies)**

- **Ramp Area/Vegetated (2'-12')**
- **10' Porous Greenway**
- **Vegetated Area (0-8')**
- **Proposed Concrete Wall**
- **Proposed Concrete Footing**
- **Conveyance Channel Capped with Min. 2' Clean Fill and Lined with Cobbles and Substrate**
- **Base Flow**
- **Wet Weather Flow**
- **Rocks/Obstructions/Plantings**
- **Potential Seating Area**
- **Underdrain**
- **Concrete Retaining Wall**
- **Native Soil**
- **2' Pathway Clear Zone or Additional Paving to Increase Path Width**
- **2' Pathway Clearance Zone**

CSX – Open Channel Design
Rendering of typical wide cross section
Typical Narrow Cross Section With Greenway

- 14' Channel
- 2' Pathway Clearance Zone
- Vegetation (0-5')
- Existing Brick Building
- Engineered Soil
- Existing Building Foundation
- Underdrain
- Stone Layer
- Native Soil
- 10' Greenway
- Conveyance Channel Capped with Min 2' Clean Fill and Lined with Cobbles and Substrate
- Rocks/Obstructions/Plantings
- Proposed Concrete Wall
- Existing Concrete Wall
- Major Deegan Expressway (Elevation Varies)
- Proposed Concrete Footing Extending to Cantilever Section

CSX – Open Channel Design
Rendering of typical narrow cross section

Proposed rendering of open channel and cantilevered greenway alignment within CSX property
6 – Example Photo of Proposed Intake Structure at the End of the Tibbetts Brook Daylighting

A trash rack designed for self-cleaning will be installed for floatables control.

Proposed intake structure will also incorporate wing walls to direct flow into closed conduit.
Site Furnishings – Van Cortlandt Park

Steel Picket Fence

Educational Signage

B-Pole Light Fixtures

1939 World’s Fair Benches
Fixed/Removable Bollards

Bike Racks

Porous Asphalt
Aluminum Pipe Rail Fence

Educational Signage

B-Pole Light Fixtures

1964 World’s Fair Benches
Bullpen
• Ownership: Public ROW
• Adjacent Property Ownership: Public ROW (Putnam Ave W) to the South and Van Cortlandt Park to the North.
• Elevation Difference: Approx. 18 ft
• Ramp Length: Approx. 250 ft
• Noted in ULURP: Yes

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenway connection to a major street.</td>
<td>Larger elevation difference presents constructability and safety concerns.</td>
</tr>
<tr>
<td>Direct connection into Van Cortlandt Park</td>
<td>No crosswalk across Van Cortlandt Park South</td>
</tr>
<tr>
<td>East/West access</td>
<td>Heavily trafficked street.</td>
</tr>
<tr>
<td></td>
<td>Potential interference with on-/off-ramp of Major Deegan Expressway.</td>
</tr>
</tbody>
</table>
• Ownership: Public ROW
• Adjacent Property Ownership: Private property (3800 Putnam Housing Development Fund Corporation) to the South and Public ROW (Putnam Ave W) to the West.
• Elevation Difference: Approx. 9 ft
• Ramp Length: Approx. 125 ft
• Noted in ULURP: No

<table>
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<tr>
<th>Pros</th>
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<tbody>
<tr>
<td>Improved constructability and safety.</td>
<td>Possibly requires sidewalk extension.</td>
</tr>
<tr>
<td>Lightly trafficked street.</td>
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<tr>
<td>Provides easy access to Van Cortlandt Park South via Putnam Ave W.</td>
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<tr>
<td>Preferred entry/exit location of maintenance vehicles.</td>
<td></td>
</tr>
</tbody>
</table>
Ownership: Public ROW

Adjacent Property Ownership: Private property (3800 Putnam Avenue West) to the North and Private property (Riverdale Crossing) to the South.

Elevation Difference: Approx. 17 ft

Ramp Length: Approx. 240 ft

Noted in ULURP: Yes

### Pros

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
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<tbody>
<tr>
<td>Greenway connection to a major street.</td>
<td>Very narrow CSX corridor (25 ft). Severely constrained area would sacrifice greenway width.</td>
</tr>
<tr>
<td>East/West access</td>
<td>Private ownership directly adjacent to greenway on both sides of street.</td>
</tr>
<tr>
<td></td>
<td>Larger elevation difference presents constructability and safety concerns.</td>
</tr>
</tbody>
</table>
Ownership: Private property (Riverdale Crossing)
Adjacent Property Ownership: Private property (Riverdale Crossing)
Elevation Difference: Approx. 5.5 ft
Ramp Length: Approx. 75 ft
Noted in ULURP: No

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<tr>
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<tbody>
<tr>
<td>Limited elevation difference</td>
<td>Private ownership.</td>
</tr>
<tr>
<td>Interferes with entrance and</td>
<td>Interferes with entrance and parking lot of major commercial property.</td>
</tr>
<tr>
<td>parking lot of major</td>
<td></td>
</tr>
<tr>
<td>commercial property.</td>
<td></td>
</tr>
<tr>
<td>Very narrow CSX corridor (30</td>
<td>Very narrow CSX corridor (30 ft). Severely constrained area would</td>
</tr>
<tr>
<td>ft). Severely constrained area</td>
<td>sacrifice greenway width.</td>
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<tr>
<td>would sacrifice greenway width.</td>
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</tr>
</tbody>
</table>
• Ownership: Public ROW
• Adjacent Property Ownership: Private property (Riverdale Crossing).
• Elevation Difference: Approx. 3 ft
• Ramp Length: Approx. 40 ft
• Noted in ULURP: No

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<tr>
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<tr>
<td>Limited elevation difference</td>
<td>Private ownership.</td>
</tr>
<tr>
<td>Short transition to greenway.</td>
<td>Interference with loading dock for BJs.</td>
</tr>
<tr>
<td></td>
<td>Putnam Ave W (privately owned) is a parking lot for Riverdale Crossing.</td>
</tr>
</tbody>
</table>
Ownership: Public ROW
Adjacent Property Ownership: Riverdale Crossing parking lot to the North
Elevation Difference: Approx. 16 ft
Ramp Length: Approx. 220 ft
Noted in ULURP: Yes

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<tr>
<td>Greenway connection to a major street.</td>
<td>Very narrow CSX corridor on the North side of 234th Street (30 ft). Severely constrained area would sacrifice greenway width.</td>
</tr>
<tr>
<td></td>
<td>Private ownership directly adjacent to greenway</td>
</tr>
</tbody>
</table>
- Ownership: Public ROW
- Adjacent Property Ownership: Shopping center
- Elevation Difference: Approx. 16 ft
- Ramp Length: Approx. 220 ft
- Noted in ULURP: Yes

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<tr>
<td>Greenway connection to major street.</td>
<td>Constructability adjacent to private property</td>
</tr>
<tr>
<td>East/West access</td>
<td>Limited CSX corridor on the South side of 234th Street (50 ft).</td>
</tr>
<tr>
<td></td>
<td>Constrained area would sacrifice greenway width.</td>
</tr>
</tbody>
</table>
Ownership: Public ROW

Adjacent Property Ownership: Private Property to North and South.

Elevation Difference: Approx. 17 ft

Ramp Length: Approx. 240 ft

Noted in ULURP: No

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<tr>
<td>Greenway connection to a major street.</td>
<td>Interferes with adjacent existing private building infrastructure on south side of 233rd St.</td>
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<tr>
<td>East/West access</td>
<td>Larger elevation difference presents constructability and safety concerns.</td>
</tr>
</tbody>
</table>
- Ownership of Street: Public ROW
- Adjacent Property Ownership: Private Property to North and South.
- Elevation Difference: Approx. 18 ft
- Ramp Length: Approx. 250 ft
- Noted in ULURP: No

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<tr>
<td>Greenway connection to a major street.</td>
<td>Very narrow CSX corridor on South side of 231st Street (40 ft). Severely constrained area would sacrifice greenway width.</td>
</tr>
<tr>
<td>East/West access</td>
<td>Interferes with adjacent existing private building infrastructure on North side of 231st Street.</td>
</tr>
<tr>
<td></td>
<td>Larger elevation difference presents constructability and safety concerns.</td>
</tr>
</tbody>
</table>
• Ownership: Public Right of Way
• Adjacent Property Ownership: Walgreens Parking Lot to North and Private Commercial Property to South
• Elevation Difference: Approx. 4.5 ft
• Ramp Length: Approx. 65 ft
• Noted in ULURP: No

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<tr>
<td>Lightly trafficked street.</td>
<td></td>
</tr>
<tr>
<td>Easy maintenance access to DEP and Parks infrastructure.</td>
<td></td>
</tr>
<tr>
<td>Limited elevation difference</td>
<td></td>
</tr>
</tbody>
</table>
Ownership: Public Right of Way
Adjacent Property Ownership: Private property to the North
Elevation Difference: Approx. 20ft
Ramp Length: Approx. 270ft
Noted in ULURP: Yes

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<td></td>
<td>Directly adjacent to on-/off-ramp of Major Deegan Expressway.</td>
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<td>No crosswalk across 230th St</td>
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</table>