Calverton Channel Rehabilitation

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Presented by
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Department of Public Works & Transportation (DPW&T):

- Projects include bridge reconstruction, Green/Complete Street Projects, roadway widening and realignments, repair of drainage and flood control systems.

- Maintains
  - 1,900 miles of County-roadway and associated sidewalks
  - We are responsible for 172 bridges in the County which we are responsible for as well as hundreds of smaller structures and culverts, and flood levees.
  - Snow removal, street tree plantings, and street lighting
DPW&T owns, operates, and maintains the County’s public stormdrain and flood control facilities

- Drainage Channels
- Stormwater Management Ponds
- Bioretention
- Flood Levee Systems
Calverton Channel conveys **Galway Tributary**. Less than a ¼ mile from the project site, **Galway Tributary** flows into Little Paint Branch. Little Paint Branch and Paint Branch then combine with Beaverdam Creek to form the Northeast Branch of the Anacostia River.
Project Drainage Area: 1.3 Sq. Miles/832 Acres

Watershed: Anacostia

Subwatershed: Little Paint Branch

Impervious Surface: 48% or 397 Acres
Pervious Surface: 52% or 434 Acres

The ratio of impervious to pervious surfaces for the Calverton Channel project area is categorized as a highly impervious drainage area. The overall average impervious area rate for the Anacostia Watershed is 25%.
CALVERTON CHANNEL FROM CALVERTON BLVD. TO COUNTY BOUNDARY

Calverton Boulevard

Craigslawn Street
1965
BEFORE THE WSSC CONSTRUCTED CONCRETE CHANNEL
1977
AFTER THE WSSC CONSTRUCTED CONCRETE CHANNEL
WHY REHABILITATE THE CALVERTON CHANNEL NOW?

- Calverton Channel was constructed around 1973
- It is now almost 50 years old with significant and ongoing concrete deterioration
- Degradation of the concrete slab can lead to total channel failure during a major storm event

Examples of deteriorating concrete channel slabs found throughout Calverton Channel

WHAT CAN HAPPEN WHEN A CONCRETE CHANNEL FAILS? Broken slabs create severe blockages which can cause system surcharges, flooding, and damage to downstream bridges, box culverts, vital storm conveyances, and transportation system structures.
EXISTING CHANNEL CONDITIONS FROM BELTSVILLE DR. TO CALVERTON BLVD.

1. Looking downstream at corner of Calverton Blvd. and Beltsville Drive.
2. Looking downstream at Beltsville Drive culvert.
3. Looking upstream at Beltsville Drive culvert.
4. Looking upstream at existing pedestrian bridge.
5. Looking upstream approaching Calverton Blvd.
6. Calverton Bridge.
EXISTING CHANNEL CONDITIONS FROM CALVERTON BLVD. TO COUNTY’S BOUNDARY

CALVERTON BLVD.
BRIDGE-LOOKING DOWNSTREAM

LOOKING DOWNSTREAM AT
CALVERTON BLVD. CULVERT AT BEND

LOOKING UPSTREAM

LOOKING DOWNSTREAM

LOOKING UPSTREAM

60° PIPE OUTFALL
## In-Kind Concrete Channel Replacement VS. Green Corridor

<table>
<thead>
<tr>
<th>REPLACEMENT DIFFERENCES</th>
<th>IN-KIND REPLACEMENT</th>
<th>GREEN CORRIDOR</th>
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<tbody>
<tr>
<td>12 to 16 month construction timeline</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Fences, sheds must be removed or relocated. Tree removal required as needed to construct channel.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mow strip next to channel with no vegetation zone to prevent future channel issues. Chain link fence boundary.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Trees and vegetation to create buffer next to channel for enhanced long term views, habitat, and creation of a green corridor</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Water quality benefit to help clean the Anacostia River and Chesapeake Bay</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Reduced 100 Year Floodplain elevations and floodplain storage area</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
WHY A GREEN CORRIDOR CONCEPT?

• Reduces 100 Year Floodplain

• Aesthetic improvement to support higher land values

• Water quality benefits to clean the Chesapeake Bay

• Long term sustainability and reduced maintenance

• Equivalent construction budget to in kind replacement with many more benefits

• A negative becomes a positive: The Channel becomes an asset transformed into a Green Corridor with native plants, pollinators, habitat, and flood storage
WHY A GREEN CORRIDOR CONCEPT?

• Eligibility for Supplemental State Grant Funding:
GREEN CORRIDOR CONCEPT

PERSPECTIVE 2 - BEFORE

PERSPECTIVE 2 - AFTER

EXISTING LAWN
EXISTING CONCRETE CHANNEL

FLOODPLAIN RESTORED TO NATIVE TREES, SHRUBS, & MEADOW
STREAM BANK
STREAM BASELINE FLOW
STREAM BANK
FLOODPLAIN RESTORED TO NATIVE TREES, SHRUBS, & MEADOW
GREEN CORRIDOR CONCEPT

PERSPECTIVE 1 - BEFORE

PERSPECTIVE 1 - AFTER
GREEN CORRIDOR

APPROMXIMATELY ½ MILE OF GREEN CORRIDOR
Example of a healthy urban stream
GREEN CORRIDOR TECHNIQUES
GREEN CORRIDOR TECHNIQUES
Typical 100 Year Floodplain Reductions: Channel Segment from Calverton Boulevard to Prince George’s County Boundary
100 YEAR FLOODPLAIN REDUCTIONS

Typical 100 Year Floodplain Reductions: Channel Segment from Calverton Boulevard to Beltsville Drive
A GREEN CORRIDOR HELPS RESTORE THE CHESAPEAKE BAY

The natural filtering capacity of the proposed Calverton Channel Green Corridor will treat over 250 acres of impervious surface to help restore the Chesapeake Bay.
DESIGN TO BUILD GREEN CORRIDOR PROCESS

Design to Permit
October 2017-December 2019

Construction
June 2020- September 2021

2-5 Years
Monitoring & Stabilizing
2021- 2026

Adaptive Management
Stabilization repairs and removal of blockages only as needed
WHAT TO EXPECT AS THE PROJECT IS CONSTRUCTED:

• Erosion and sediment control measures installed first with a temporary construction access road.
• Some trees will need to be removed as part of the project. The stumps of some trees may remain to regenerate. Logs and branches will be reused to help reestablish organic matter in the natural stream corridor.
• Conservation Fence will be installed after rough grading and removals to provide boundary within your yards and minimize inconvenience to you, your children, and pets.
• Construction activity (use of heavy equipment) will occur between the hours of 8 AM and 5 PM Monday-Friday.
• Project schedule is contingent on weather. However, to keep on schedule, some construction may occur during the weekends but will not start before 9:00 AM.
• Project activity which does not utilize equipment may occur from 6:30 AM to 7:00 PM Monday through Saturday.
• As an active waterway, the contractor may access the site to secure the project area regardless of schedule or with Equipment utilized.
• Regardless of timing to secure the site.
• In the segment from the County line to Calverton Boulevard, the project will utilize only DPW&T easement areas.
• The stream will be temporarily conveyed outside of the channel in segments to allow construction. Concrete will be Removed in 50 to 100’ segments. Once removal and grading is completed, the natural stream lining will be installed.
• The natural stream segment will be planted with native plants after the stone materials and grading is completed.
• The contractor is responsible for watering and maintaining the plants for the first two years.
EXAMPLES OF OTHER COUNTY RESTORATION PROJECTS
EXAMPLES OF OTHER COUNTY RESTORATION PROJECTS
• Project will go to bid with construction to start summer of 2020.

• Sheds and/or related structures within DPW&T’s easements must be relocated outside DPW&T easement by May 1st of 2020.

• Notification to all landowners directly adjacent project segment will be notified of final project schedule.

• Project will be constructed in phases with the upper channel segment from the County line to Calverton Boulevard to be constructed first initiated in the summer of 2020.
QUESTIONS?

FOR ADDITIONAL INFORMATION OR QUESTIONS PLEASE CONTACT:
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