DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

POTOMAC INTERCEPTOR EMERGENCY REPAIR AND REHABILITATION PLAN

April 2026

Prepared for:

dc water is life

Prepared by:

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1 INTRODUCTION

This report responds to Maryland Department of the Environment's (MDE) letter dated March 12, 2026, which requested a final plan and schedule to restore natural resources impacted within the jurisdiction of the State of Maryland as a result of the January 19, 2026, collapse of the Potomac Interceptor (PI). The collapse occurred between the Chesapeake and Ohio (C&O) Canal and the Clara Barton Parkway, east of Interstate 495 (I-495) on National Park Service (NPS) property in Montgomery County (Exhibit 1). DC Water initially presented the draft Repair and Rehabilitation Plan to MDE on February 19, 2026 (Exhibit 2). This report documents DC Water's comprehensive response to the PI's collapse to date, including impact characterization, corrective actions, ongoing restoration activities, and long-term prevention measures.

2 BACKGROUND

2.1 Overview of DC Water

DC Water is an independent authority of the District of Columbia (D.C.) government, established in 1996 and codified in DC Code § 34-2201.01. DC Water serves multiple regional jurisdictions. Its Board members include representatives from the District of Columbia, Fairfax and Loudoun Counties in Virginia and Montgomery and Prince George's Counties in Maryland. DC Water provides services to more than 500,000 residential, commercial, and governmental customers in the District, and also conveys and treats wastewater for 1.6 million customers in Virginia and Maryland.

DC Water operates the Blue Plains Advanced Wastewater Treatment Plant (Blue Plains), which has an annual average capacity of 384 million gallons per day (MGD) and covers a service area of 150 acres. To collect wastewater, DC Water operates 1,800 miles of sanitary and combined sewers, 22 flow-metering stations, nine wastewater pumping stations, and 16 stormwater pumping stations within the District. Combined sewers serve approximately one-third of the District, while separate sanitary and storm sewers serve the remaining District area.

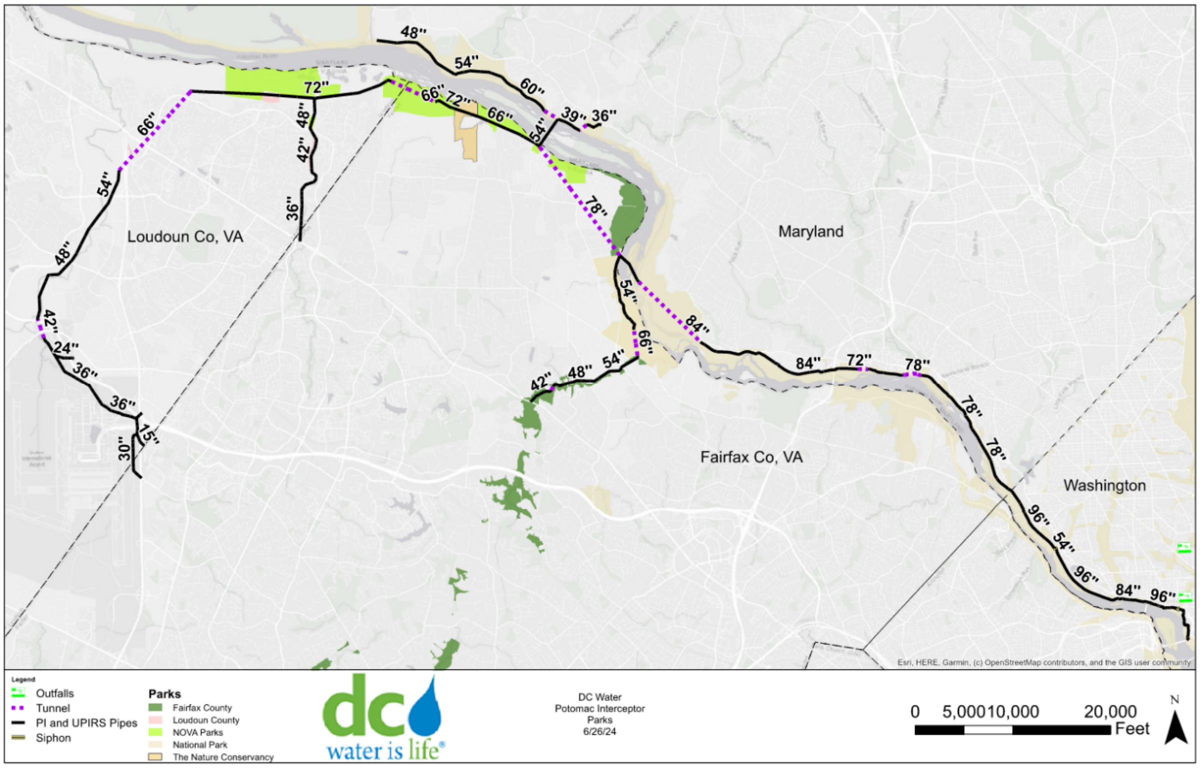
2.2 Potomac Interceptor Background

The PI sanitary sewer system carries about 60 million gallons of wastewater daily from areas near Dulles Airport to the Potomac Pumping Station in Washington, DC. Flows from the pump station are then sent to the Blue Plains Advanced Wastewater Treatment Plant for treatment before discharge into the Potomac River.

The PI was constructed pursuant to the enactment of Public Law 86-515 (the Act), by the 86th Congress, on June 12, 1960. The Act authorized D.C. to plan, construct, operate, and maintain a sanitary sewer to connect Dulles to the Washington, DC sewer system. Construction of the PI system began in 1961with mainline service commencing in 1963.

The portion of the PI that conveys flow from outside the District, running from Dulles Airport to the Maryland/ District border, is approximately 44.1 miles in length and consists primarily of 30"-96" reinforced concrete pipe (RCP) which serves approximately 376 square miles, and includes 11 tunnel sections, 2 crossings of the Potomac River and more than 200 manholes, air exhausters, access shafts and vortex structures. The PI has 84 jurisdictional connections serving Fairfax County, Loudoun County, the Towns of Vienna and Herndon, and Dulles Airport in Virginia and Montgomery County, MD. Within the District, the PI becomes the Upper Potomac Interceptor Relief Sewer (UPIRS) which collects and conveys flow from within the District via a 5.1-mile section of RCP pipe.

Figure 2-1: Potomac Interceptor Map



2.3 Potomac Interceptor Break

On January 19, 2026, a failure occurred in the Potomac Interceptor (PI) downstream of Manhole (MH) 17 near DC Water's Odor Control Facility, located east of Interstate 495. The failure resulted in an unprecedented and substantial blockage in the PI caused by boulders in the trench backfill above and surrounding the pipe to collapse into the damaged interceptor. This blockage significantly restricted downstream wastewater flows, leading to overflows to grade at the break location as well as upstream MH17 and MH18. The unprecedented boulder dam caused what should have been a manageable failure to spiral into a multi-day and enormous volume release to the Potomac River and then weeks of bypass pumping of approximately two billion gallons of sewage.

At the break location, the pipe is a 72" reinforced concrete pipe (RCP). Immediately upstream of the failure, there is an approximately 13-foot vertical drop between MH17 and MH16 over a horizontal distance of roughly 35 feet. Excerpts from the record drawings, including plan and profile views, are provided as Exhibit 3.

Because of the boulder dam, uncontrolled wastewater overflowed into a natural, stormwater-driven channel between the C&O Canal and the Clara Barton Parkway. The overflow path extended approximately 2,350 feet, passing through the Rock Run Culvert[1] beneath the C&O Canal before discharging into the Potomac River near C&O Canal Lock 10. An overview of the emergency response actions is summarized in Figure 2-2 and below:

- Within 5 days of the incident, DC Water, in partnership with NPS, designed and constructed a controlled bypass using the C&O Canal. This mitigation approach was consistent with DC Water's pre-event emergency response planning developed in coordination with a stakeholder group of regulatory and advisory agencies. By January 24, 2026, the bypass was managing 40 mgd, effectively stopping the majority of the uncontrolled overflow.

- By January 27, 2026, the bypass capacity was increased to 60 mgd.

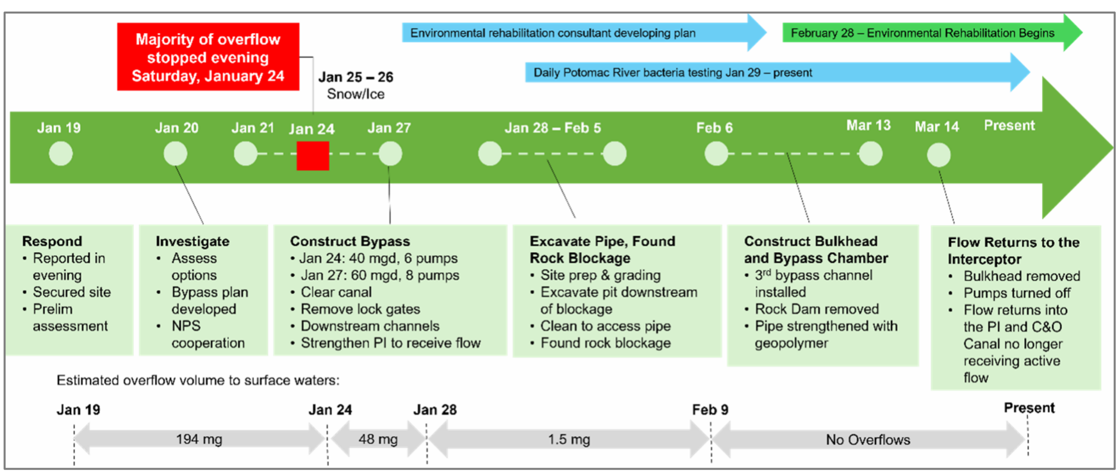
- With the bypass operational, DC Water excavated at the break location and determined that the pipe was obstructed by a rock blockage that could not be removed using conventional jet and vacuum equipment.

- To address the rock blockage issue, DC Water's emergency contractors constructed a bulkhead chamber and bypass pumping pit on the PI near the I-495 bridge upstream of the break. This configuration allowed the entire flow to be isolated from the break location using the bulkhead and fully bypassed the flow around the damaged section through the C&O canal. The construction of the bypass chamber increased the pumping capacity to approximately 144 mgd.

- With the flow fully bypassed and the bulkhead installed, DC Water was able to excavate and remove the rock blockage. Adjacent segments of the PI were structurally reinforced using geopolymer, and the emergency repair was completed. Normal flow was restored to the PI on March 14, 2026.

Figure 2-2: Potomac Interceptor Repair and Rehabilitation Timeline

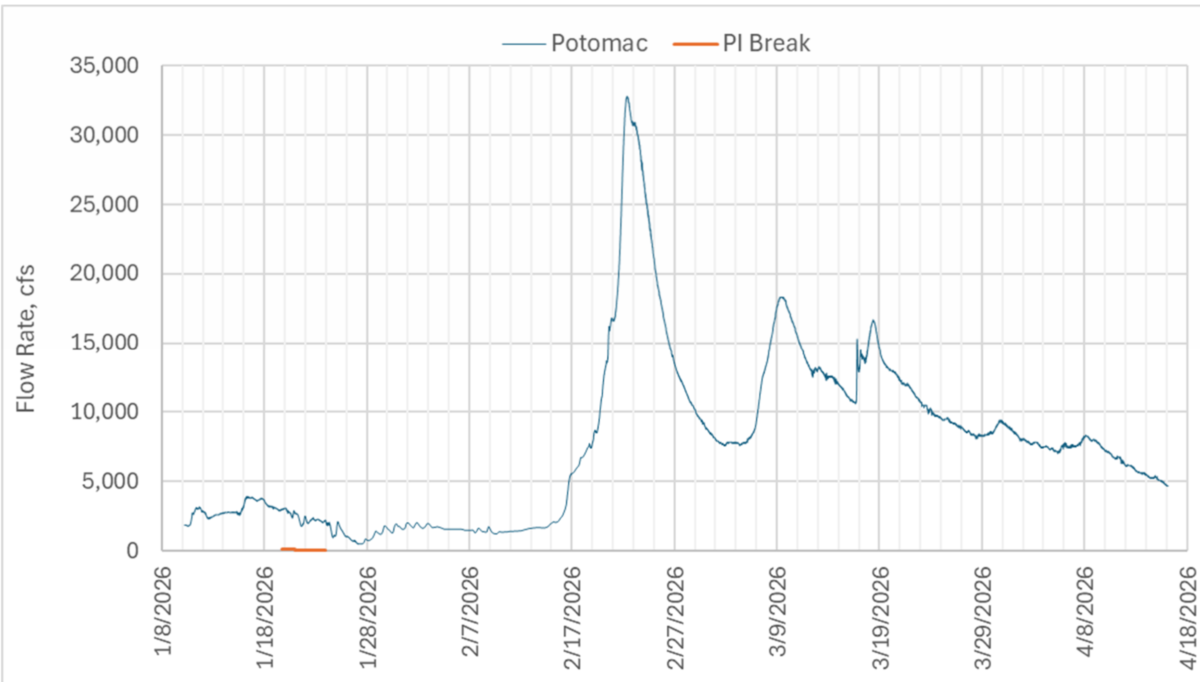
January through April 2026



[1] Note: The stream that runs through the referenced historic "Rock Run Culvert" is not Rock Run. Rock Run drains into the Potomac upriver, west of Interstate 495. The naming convention aligns with NPS.

The use of the C&O Canal as the controlled bypass effectively minimized flows into the Potomac River. Figure 2-3 compares the daily Potomac River flow rates with the overflow event. At the onset of the incident, the Potomac River was experiencing notably low flows, averaging approximately 2,000 cfs at the Little Falls gauge, while the estimated flow rate from the PI overflow was approximately 93 cfs. Following the cessation of the overflow, hydrologic conditions in the Potomac River changed significantly, with daily flow rates increasing to between 10,000 to 15,000 cfs and more than 300 million gallons of water passing through the spill location. Ultimately, even during this period of unseasonably low river flow (and cold and icy conditions), the spill represented only a very small fraction of the Potomac River's overall flow.

Figure 2-3. Flow Comparison for the PI Overflow vs Potomac River



Data Source: Potomac River Near Wash, DC Little Falls Pump Sta - USGS-01646500
https://waterdata.usgs.gov/monitoring-location/USGS-01646500

2.4 Impact Areas

The uncontrolled flow footprint was delineated into three distinct areas (Areas 1–3) based on location and the type of cleanup required. The controlled bypass was designated as Area 4. A summary of these areas is provided in Table 2-1, with a corresponding map included as Exhibit 4, and photos provided in Exhibit 5.

Table 2-1. Summary of Impact Areas

Name	Approximate Length/Area	Location / Description
Area 1	1,800 ft	An unnamed channel that runs through the break site and drains into the Rock Run Culvert. A primarily stormwater-driven system with 11 culverts draining into the channel. Recently delineated and Agency reviewed as part of the DC Water's Environmental Assessment as intermittent until transitioning to a perennial stream approximately 300 feet prior to the Rock Run culvert. Channel averages ~3 feet wide and ~0.5 feet deep, gradually widening with development of a cobble substrate.
Area 2	550 ft	Continuation of the unnamed channel in Area 1, consisting of the Rock Run Culvert and extending downstream to the confluence with the Potomac River.
Area 3	8.1 ac	Immediate receiving waters of the Potomac River downstream of Area 2.
Area 4	3,100 ft	Segment of the C&O Canal between Lock 10 and Lock 14 used to convey the emergency bypass flows.

2.5 Short Term Impacts

Sanitary sewer overflows (SSOs) contribute fecal bacteria (e.g., Escherichia coli, Enterococcus), pathogens, nutrients, and other pollutants. SSOs can also deplete oxygen levels, potentially causing fish kills. Information on short-term (hours to days) impacts and their relevance to the PI overflow event is provided.

a) Fecal Coliform and Pathogens

Acute public health risks may occur when pathogens are introduced and can result in illnesses if there is body contact or ingestion of such water with potential impacts including gastroenteritis, infections, or rashes. DC Water and other stakeholders mobilized quickly to monitor and expand ongoing water quality monitoring to ensure local jurisdictions have sufficient and accurate information to determine water quality conditions. As anticipated, instream bacteria levels dropped quickly once the active releases were stopped. Extensive water quality data, which are posted daily, demonstrate that the river bacteria levels have returned to normal. Additional sampling was done at key public use areas with all results well below regulatory advisory levels. Refer to Section 3 for more information on water quality testing and results. Section 3.2 includes information on issued health advisories.

b) Pollutants

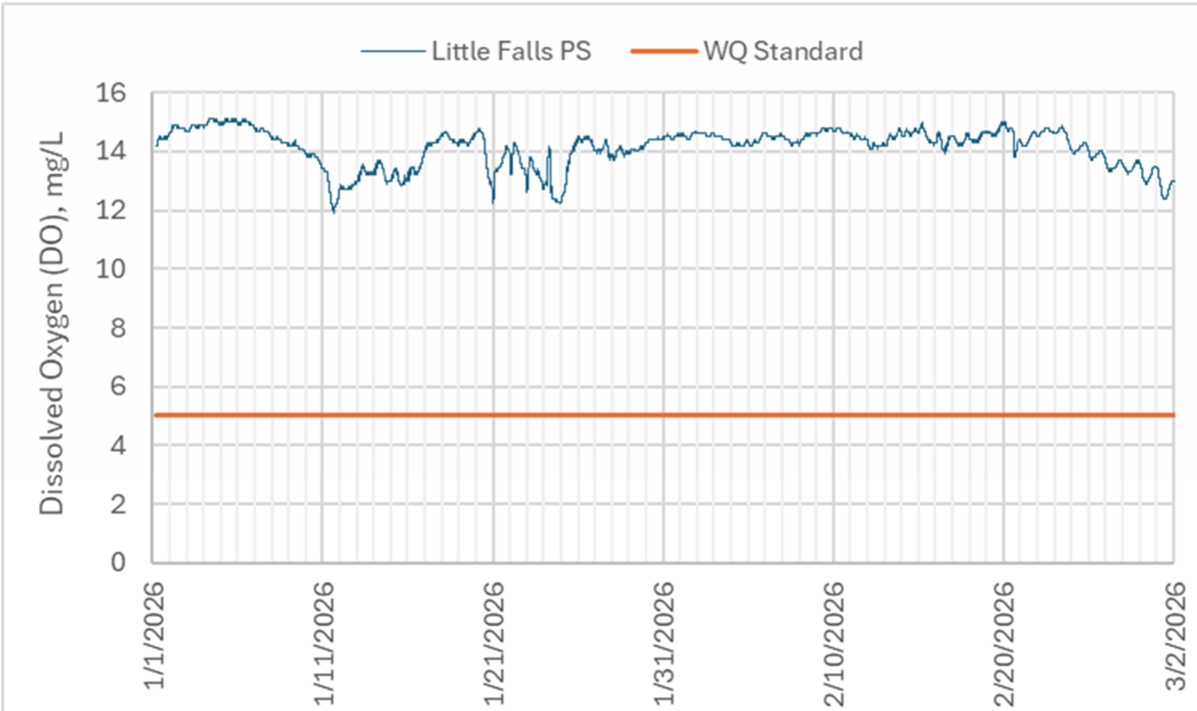
The overflow event released a wide range of pollutants beyond bacteria which are typically found in sewage. While the volume of the spill was relatively small compared to the flow in the River and there was no fish kill, there was the potential for localized impacts. Section 2.6 includes more information on pollutant impacts and the variability in the Potomac River.

c) Oxygen Depletion

While certain SSOs can result in decreased dissolved oxygen in the water, that was not the case here. Dissolved Oxygen (DO) was continuously monitored at the Little Falls Pump Station approximately two miles downstream from the PI overflow site. Continuous monitoring data shows small dips (14 to

12 mg/L) during the overflow, but all the values were more than double the applicable Maryland water quality standard[2] of a minimum of 5 mg/L (Figure 2-4).

Figure 2-4. Dissolved Oxygen Levels at Little Falls Pump Station



Data Source: Potomac River Near Wash, DC Little Falls Pump Sta - USGS-01646500
https://waterdata.usgs.gov/monitoring-location/USGS-01646500

d) Nutrients

According to the Virginia DEQ, the PI failure released 0.5 percent of the annual managed total nitrogen and total phosphorous load to the Potomac River. Additional information on the amount of nutrients introduced to the Potomac River from this incident and how it compares to typical River loadings is provided in Section 2.6.

e) Debris

As is common with sewage overflows, sewage debris was in the upstream tributaries prior to flowing into the Potomac River. Photos from the initial observations and cleanup efforts are closely documented in Exhibit 5.

2.6 Long Term Impacts

To assess the potential for long-term consequences resulting from the PI spill, Virginia Department of Environmental Quality (DEQ) estimated the nutrient and total suspended solids (TSS) contributions

[2] Maryland Water Quality Standards for Class 1 Waters (full body contact), Code of Maryland Regulations 26.08.02.03-3A(1)(b)

from the PI spill and compared these values against typical annual values for the Potomac River and Chesapeake Bay (Table 2-2). DEQ's **analysis indicates that the PI spill's contribution of nutrients and TSS to the Potomac River represented less than 0.5% (combined) of the River's typical annual managed load for those pollutants.** This shows that the PI spill did not significantly change the overall annual nutrient or sediment loads for the Potomac River or the Chesapeake Bay. DC Water believes these relatively low percentages will be applicable for many or all other pollutant parameters of interest. By expeditiously implementing the pre-planned C&O Canal bypass pumping, any long-term impacts to the Potomac River were minimized or eliminated.

Table 2-2. PI Overflow vs Potomac River: Nutrient and TSS Load Comparisons [1,2]

Parameter	Est. Loads from PI Spill (lbs)	2025 Potomac Loads (lbs)	2025 Chesapeake Bay Loads (lbs)	Potomac: % of 2025 Loads	Chesapeake: % of 2025 Loads
Total Nitrogen	87,000	51,000,000	237,800,000	0.2%	0.04%
Total Phosphorus	11,000	3,300,000	13,200,000	0.3%	0.09%
Total Sus. Solids	516,000	4,495,000,000	17,693,000,000	0.01%	0.003%

1. *Source: Adapted from Virginia Department of Environmental Quality (DEQ), 2026, "Potomac Interceptor Collapse", https://www.deq.virginia.gov/news-info/shortcuts/topics-of-interest/potomac-interceptor-collapse*
2. *PI spill loadings are estimated from the Alex Renew WWTP in Alexandria, Virginia that is similar in composition to what is normally conveyed by the PI.*

DC Water additionally examined the influence of weather conditions on River loadings. Table 2-3 presents the District's stormwater TSS under both wet and dry weather conditions, alongside the discharge from the District's combined sewer outfalls (CSOs) prior to the execution of their Long-Term Control Plan (LTCP) for CSO reduction. The findings indicate considerable TSS variability, and the routine instream disparity between wet and dry conditions surpasses the estimated PI spill loading. This demonstrates that the pollutant loadings from the spill are encompassed within the typical, seasonal variability that the River routinely experiences.

Table 2-3. Load Variability based on weather vs PI Overflow [1]

Load Source	Dry Year TSS, lb/yr	Wet Year TSS, lb/yr	Difference (Variability), lb/yr
District CSO before LTCP	2,659,559	5,984,008	3,324,449
District Stormwater	18,478,333	41,596,500	23,109.167
Total			**26,443,616**

1. *Source: Data from DC Water's Long Term Control Plan.*

The City of Alexandria and DC Water operate CSOs in the Virginia and DC metro areas. During wet weather events, these systems discharge a mixture of sanitary wastewater and stormwater when the capacity of the system is exceeded by rain events. The City of Alexandria system is predicted to discharge about 140 million gallons of CSO in an average year of rain to the Potomac River. Prior to implementation of the Clean Rivers Project and the LTCP, DC Water's CSO volumes were approximately 3.254 billion gallons per average year of rainfall. A comparison of the PI overflow volume to these CSO volumes is provided in Table 2-4. The analysis demonstrates that the PI overflow represents a relatively small percentage of the typical historical annual CSO volumes. Moreover, year-to-year discharges driven by rainfall substantially exceeds the total PI overflow volume, making it difficult-if not impossible- to distinguish any long-term impacts attributable to the PI break from normal hydrologic and operational variability.

Table 2-4. PI Overflow vs Historical CSO Volumes in DMV

Source	CSO Volume (mg/average year)	PI Break Overflow Volume (mg)	PI Volume as a as a % of CSO Volume
City of Alexandria	140	-	
DC Water	3,254	243.5	
Total	3,394	243.5	**7%**

1. *Source: Data from DC Water's Long Term Control Plan and Alexandria's Alex Renew website https://alexrenew.com/*

Both the City of Alexandria and DC Water are implementing projects to control CSOs, with the Alexandria CSO controls expected to be placed in operation in 2026. DC Water's Clean Rivers project is being implemented in phases; Phase 1 of the Anacostia Tunnel System was placed in operation in 2018, and the final phase for Anacostia began operations in 2023. CSO controls for the Potomac and Rock Creek watersheds are under development and will be operational by 2030.

Beyond comparing volume and loadings of the spill to typical year loadings, the Interstate Commission on the Potomac River Basin (ICPRB) utilized its existing Emergency River Spill Model (ERSM) to forecast the time required for fecal coliform concentrations to return to baseline levels in the River. Preliminary findings indicated that concentrations reverted to background levels within 0.5 to one day at the Little Falls River Intake and within one day at Chain Bridge, a result of both natural die-off and the River's natural flushing capacity. These predictions were based on a five-day spill duration of 60 MGD, a fecal coliform concentration of 10 million /100 mL, and a River flow estimate of 2,000 cfs. A copy of the ICPRB presentation, dated February 23, 2026, which contains additional information, is appended as Exhibit 6. The rapid return to pre-incident baseline levels in the Potomac River underscores the River's natural flushing capacity and minimizes any long-term risk of nutrient overloading.

Due to the sufficient detail offered in the above independent analyses, DC Water did not conduct any supplementary modeling.

3 WATER QUALITY MONITORING

3.1 Background

The designated use of the Potomac River in Maryland and DC area primarily falls under Class I-P for water contact recreation, fishing, and public water supply. The Potomac River is the subject of extensive monitoring by numerous agencies.

After the spill, DC Water mobilized to supplement existing Agency water quality sampling. Our Team reviewed water quality standards, testing protocols and met with Agencies to confirm what was required to determine when the water quality returned to pre-existing conditions. Based on existing sampling procedures, sampling focused on Escherichia coli (E. coli), a widely accepted indicator of human sewage. There are natural bacteria present in all bodies of water. U.S. Environmental Protection Agency (USEPA), along with the D.C., Maryland, and Virginia, has a beach advisory level of 410 MPN/100 mL of E. coli.

Utilizing a certified laboratory, DC Water initiated daily water quality sampling at six (6) locations beginning on Jan 29, 2026. On February 18, 2026, two additional locations were added on either side of Minnie's Island and on March 4, 2026, sampling was expanded to Sycamore Island and Lock 6. The sampling was performed using EPA Method Colilert-18 MPN. A map of these sampling sites is provided as Exhibit 7.

3.2 Results

Overall, E. coli declined fairly rapidly the further downstream from the break site samples were taken, with nearly all locations below 410 MPN/100 mL by March 22, 2026. Occasional, intermittent spikes in E. coli are typical of urban streams, including the Potomac River, often correlated with recent rain events. A snapshot of the results from all Agencies collecting data is provided in Exhibit 8. D.C. Department of Energy & Environment (DOEE) created this dashboard to help the public to easily review daily consolidated water quality sampling results[3].

DOEE lifted its Potomac River advisory on March 2, 2026. On March 5, 2026, Montgomery County updated its original non-contact health advisory to avoid direct contact with the river and on March 17, 2026, further refined the advisory to avoid only the immediate spill area[4]. MDE also issued a precautionary shellfish harvesting closure that was implemented for a portion of the Potomac River following the incident and was lifted on March 10, 2026. MDE determined that there was no impact to shellfish waters from the event[5].

Maryland Class I Water Quality Standards,[6] for water contact recreation and the protection of nontidal warmwater aquatic life, uses E. coli and Enterococci as indicators. Compliance is based on a 90-day sampling period with two criteria. For E. coli, the geometric mean of all samples must not exceed 126/100 mL, and no more than 10% of samples can exceed the statistical threshold value (STV) of 410/100mL. Tables 3-1 and 3-2 provide the geometric mean and the percent exceedance for the STV for the available data since February 9, 2026 – the day after the last residual release. Results show the only testing site that exceeds the state water quality standards for E. coli is near the spill location and then for a relatively short period of time during historic cold and icy conditions.

[3] https://potomacinterceptor.dc.gov

[4] *Reference: https://health.maryland.gov/newsroom/Pages/Maryland%20health%20officials%20provide%20update%20on%20recreational%20water%20advisory%20for%20Montgomery%20County%20impacted%20by%20Potomac%20Interceptor%20spill.aspx.*

[5] MDE Website. *https://mde.maryland.gov/programs/water/Compliance/Pages/Potomac-Interceptor-Sewer-Overflow.aspx.* Last accessed April 28, 2026.

[6] Code of Maryland Regulations 26.08.02.03-3A(1)(a)

Table 3-1. Potomac Water Quality Results: Monthly and 90-day Geometric Mean [1,2]

Parameter	# of Samples	Old Anglers Inn	Near Spill (Swainson Island)	Minnie's Island, north shore of River	Minnie's Island, South side	Sycamore Island	Lock 6	National Harbor
90-day Geometric mean	78	15	190	29	21	30	21	24
February	28	19	30,786	330	238	N/A	N/A	33
March	31	17	100	23	17	54	34	25
April	27	8	15	15	9	17	12	15

[1] *Maryland Water Quality Standards for Class 1 Waters (full body contact), Code of Maryland Regulations 26.08.02.03-3A(1)(a), (b)*

[2] *90-day geometric mean analysis starts February 9, 2029 - the day after the last release. DC Water has daily water samples through April 27, 2026.*

Table 3-2. Potomac Water Quality: Monthly and 90-day Statistical Threshold Value (STV)[1,2]

Parameter	# of Samples	Old Anglers Inn	Near Spill (Swainson Island)	Minnie's Island, north shore of River	Minnie's Island, South side	Sycamore Island	Lock 6	National Harbor
90-day % exceed STV	78	1	30	4	5	5	3	1
February	28	0	28	4	4	N/A	N/A	0
March	31	1	10	0	1	5	3	1
April	27	0	0	0	0	0	0	0

[1] *Maryland Water Quality Standards for Class 1 Waters (full body contact) , Code of Maryland Regulations 26.08.02.03-3A(1)(a), (c)*

[2] *DC Water started collecting daily water samples on January 29, 2026. Available data is through April 27, 2026 .*

3.3 Expanded Testing

On April 11, 2026, DC Water expanded its water quality testing program to focus on high use areas where sediment resuspension could elevate potential public health risks. In coordination with stakeholders, DC Water identified five such high use locations downstream of the spill site. At these locations, water quality samples were collected at 2 hours intervals between 8am and 6pm over 3 weekends in April. A certified laboratory analyzed the samples for E. coli using Method mColiBlue24. Results from the interval sampling conducted on Saturdays were consistent with those from routine daily sampling and showed no significant variability across sampling times or days. **All results were under 100MPN/100mL – indicating very low bacterial levels confirming that river conditions had returned to baseline**. Preliminary results are provided in Exhibit 9.

4 PHASE I INITIAL RECONNAISSANCE AND CLEANUP (CORRECTIVE AND REMEDIAL MEASURES)

Once the risk of uncontrolled overflows was minimized, DC Water immediately shifted its efforts to site assessment, cleanup, and implementation of measures to prevent further discharges. This section describes the initial assessment, interagency coordination, permitting actions, and Phase I cleanup activities. Following incorporation of NPS feedback, the revised concept was presented to the MDE on February 19, 2026, as well as to stakeholders during public meetings held on February 25 & 26, 2026 (Exhibit 2). To support response and cleanup activities, DC Water secured and pursued multiple regulatory approvals, summarized below.

Table 4-1. Permitting and Regulatory Approval Summary

Permit / Approval	Agency	Description	Status
Special Use Permit #26-026	NPS	Authorization for access and restoration activities on NPS property	• Executed February 28, 2026 • Expires June 15, 2026
Emergency Authorization (NPDES 20-CP)	MDE	Discharges associated with construction-related stormwater	• Issued March 6, 2026
ESC Plan Approval	MDE	Erosion and sediment control measures supporting Phase I cleanup	• Approved March 31, 2026
Notice of Intent (NOI)	MDE	Coverage under NPDES 20-CP	• Submitted April 4, 2026 • Permit issuance pending
Water and Sewerage Construction Permit	MDE	Construction activities associated with interceptor repair and restoration	• Pending
Joint Permit Application (JPA)	MDE / USACE	Clean Water Act Section 404 authorization and State approval	• Submitted March 11, 2026 • NWP 38 and MDE Letter of Authorization anticipated
Water Appropriations Permit	MDE	Temporary water withdrawal from C&O Canal during initial cleaning	• Submitted March 17, 2026 • MDE did not issue

Prior to formal Erosion, Sediment and Control (ESC) Plan approval, DC Water coordinated closely with MDE to confirm locations of temporary erosion and sediment control measures and stream best management practices, ensuring compliance with the 2011 MDE Standards and Specifications for Soil Erosion and Sediment Control and Maryland's Guidelines for Waterway Construction. Photos of before, during and after Phase I clean up are provided in Exhibit 5. A copy of the approved ESC Plan is provided as Exhibit 10.

4.1 Area 1

Initial field reconnaissance of Area 1 delineated the upstream extent of the uncontrolled overflow footprint to approximately 120 feet upstream of the Odor Control Facility at MH 18 where surcharging was observed. During the overflow event, discharged material was deposited within the channel with lateral overbank flow extending approximately 25 feet into the adjacent floodplain. Following the cessation of overflows, residual debris and deposited material remained within both the channel and floodplain areas (Exhibit 5, Photos 1-2).

To prevent the remobilization of deposited material downstream to the Potomac River, the USACE implemented a Clear Water Diversion (CWD) system to hydraulically isolate Area 1 and minimize baseflow through the affected channel during cleanup operations. The CWD system included the installation of temporary sump pit collection areas ("ponds") at each stormwater outfall to intercept and manage stormwater and groundwater inflows from contributing drainage areas.

Specifically, stormwater from upstream culverts designated as Pumps 1 through 3 were routed to a single filter bag located south of the C&O Canal. Pump 4 discharged directly into the C&O Canal. Flows from Pumps 5 through 9, as well as Pump 11 were conveyed to a separate filter bag, while Pump 10 was hydraulically isolated and discharged into an independent filter bag to maintain flow separation. This diversion configuration effectively reduced hydrologic inputs to Area 1 during cleanup activities (Exhibit 5, Photos 75–80).

Area 1 contained dense understory vegetation, which necessitated removal to allow for access and effective implementation of cleanup operations. Under coordination with NPS, removal was limited to smaller trees and shrubs (<3" diameter), as necessary to facilitate clean up. A licensed arborist evaluated larger trees to assess potential impacts from excavation activities. NPS-approved tree protection measures were implemented, and removal of larger trees occurred only if necessary and at the direction of NPS. The map and associated tree list are provided as Exhibit 11.

Limits of known, unimpacted wetlands and Rare, Threatened, and Endangered (RTE) species' habitat within proximity of rehabilitation limits were reviewed with NPS. For Area 1, no additional fencing to protect RTE was required. Under direction of NPS, seeds from Buttercup Scorpionweed (*Phacelia covillei*) will be collected in May and replanted in nearby plots. Once rehabilitation is complete, plants will be relocated back into the project area as part of Phase II.

To further expedite work, the project area was further divided into Areas 1 and 1E. Clean up in Area 1 was completed by DC Water and Area 1E by USEPA. Accumulated material was excavated using hand tools (rakes and shovels) and in deeper areas with a tracked excavator. All material was staged in defined stockpile areas or loaded into dumpsters staged along Clara Barton Parkway. Depth of removal was visually field-verified and documented. All collected material was transported to an approved Subtitle D Landfill. A log of all transported materials is included in Exhibit 12.

Following material removal, the streambed and floodplain was stabilized using a combination of temporary, fast-growing seed mix and natural-fiber (leno weave) coir matting to reduce erosion and promote initial revegetation (Exhibit 5, Photo 18).

4.2 Area 2

On March 9, 2026, USACE mobilized and started cleanup efforts. Under NPS guidance, USACE cleaned the historic Rock Run culvert with soap and soft bristle brushes (Exhibit 5, Photo 24). Prior to starting the washing scope, USACE built a sandbag dam below Rock Run culvert to collect all wash water. Any water collected from this sandbag dam was pumped into the controlled bypass portion of the canal that drained directly to the PI (Exhibit 5, Photo 27).

USACE, in partnership with NPS and DC Water, mapped out the limits of the affected portions of the stream, which was primarily limited to immediately below Rock Run culvert. Crews selectively raked and removed accumulated material. All disturbed areas were stabilized with a stabilization and/or NPS-approved seed mix. USACE's full report is provided as Exhibit 13.

Same as Area 1, DC Water and NPS reviewed unimpacted wetlands and RTE species' habitat within proximity of rehabilitation limits and no additional protective fencing was required. Under direction of NPS, seeds from Buttercup Scorpionweed will be collected in May and replanted in nearby plots. Once rehabilitation is complete, plants will be relocated back into the project area as part of Phase II.

During this cleanup effort, a minor leak was observed in the Rock Run culvert. As such, the sandbag dam USACE installed was transferred to DC Water and remains in place. The current plan is to maintain the sandbag dam and minimize water flowing through the culvert until the leaking subsides, which is anticipated to subside after cleaning of C&O Canal Level 10 that is above the culvert. Depending on timing, the sandbag dam may be removed in Phase I or Phase II.

4.3 Soil Sampling in Area 1 and Area 2

USEPA developed and implemented a comprehensive soil sampling program in Areas 1 and 2 to confirm that sewage-related material from the uncontrolled overflow had been adequately removed. The sampling approach focused on E. coli, a widely accepted indicator of human sewage via Fecal Coliform EPA Method 1680 analysis.

Because deposited material largely remained on the soil surface—likely due to leaf litter and the short duration of high flows—sampling emphasized surface soils within the impacted footprint. USEPA identified 12 transects across Areas 1, 1E, and 2 (Exhibit 14). At each transect, background samples were collected outside the overflow footprint, while 2 to 3 additional samples were collected within impacted floodplain and channel both before and after cleanup activities.

Background samples were used to characterize natural soil conditions, acknowledging that E. coli can occur naturally due to wildlife and environmental variability. Post-cleanup soil results were evaluated against multiple benchmarks, including the USEPA's Class A biosolids standard (1,000 MPN/g), a statistically derived background threshold value (250 MPN/g) calculated using USEPA's ProUCL software, and the highest observed background concentration. USEPA recommended that any post-cleanup results exceeding the 250 MPN/g background threshold trigger stakeholder coordination, while results exceeding Class A biosolids criteria require additional material removal. This multi-criteria evaluation provided a scientifically robust framework to verify the effectiveness of cleanup actions and ensure residual risks were minimized.

Initial sampling was conducted between March 10, 2026, and March 22, 2026. Results show that post cleanup 4 of 7 transects in Area 1, and all 5 transects in Area 2 met threshold requirements. Three transects – Area 1 Transect 4, Area 1E Transect 1 and Area 1E Transect 2 required stakeholder coordination since they exceeded 250 MPN/g. USEPA, NPS, and DC Water agreed to additional testing over 2 weeks to evaluate if the areas would continue to naturally attenuate. Area 1 Transect 4 and Area 1E Transect 1 were under the threshold after 2 weeks. Results were inconclusive at Area 1 Transect 2, so USEPA remobilized in early April to manually remove additional soil. Final samples taken April 17, 2026, confirmed that this final area had returned to normal levels.

Full results are presented in Figure 4-1 and results from the additional sampling (i.e., attenuation in April and additional soil removal) are provided in Table 4-2. USEPA's full scope for additional soil removal is provided as Exhibit 15.

Figure 4-1 Areas 1 and 2 Soil Sampling Results

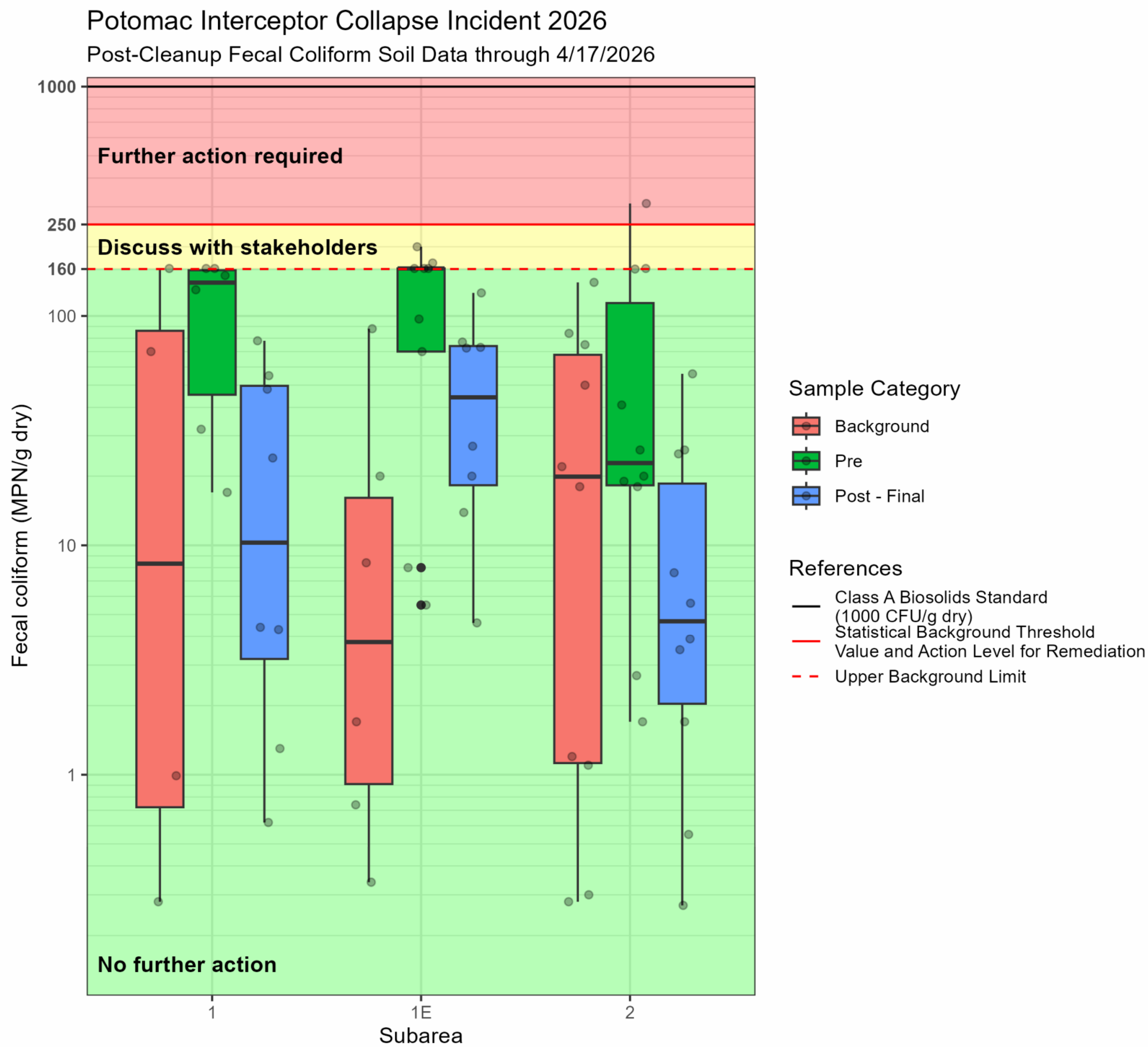


Table 4-2. Post Remediation Additional Soil Sampling

Transect #	Post Cleanup (3/19 to 3/23)	Attenuation Monitoring 3/27, 4/08	Attenuation Monitoring 4/08, 4/17	Additional Cleanup 4/16
Area 1, Transect 4	240	320	24	---
Area 1E, Transect 1	260	290	73	---
Area 1E, Transect 2	300	670	>3,020	126
Area 1E, Transect 2.5	---	---	>2,470	14

4.4 Area 3

When USACE mobilized to Area 3, the River flow was approximately three times higher than it was at the time of the uncontrolled overflow. With that, the initial plan to inspect and manually remove visible accumulated material was postponed. As an interim step, USACE walked the River's stream bank and inspected Swainson Island using drone photography. Their full report and photos are provided as Exhibit 16. DC Water maintains the scope to reinspect the River and area between Swainson Island once the water recedes to January levels (See Figure 2-3 for flow rates).

4.5 Area 4

When the PI collapsed on January 19, 2026, DC Water, in coordination with the NPS, implemented an emergency-controlled bypass utilizing the C&O Canal, preventing an estimated two billion gallons of untreated wastewater from discharging to the Potomac River. Throughout the bypass operation, multiple protective and operational controls were installed and maintained to ensure system stability and environmental protection. These measures included construction of an earthen berm downstream of Lock 10, installation of sandbag dams to provide hydraulic control and direct flows back to the PI at MH 15 and MH 16, and extension of all outfall pipes into the canal with energy dissipation stone. Lock stone walls were lined with protective plastic sheeting, and an additional contingency sandbag dam was installed upstream of Lock 14 to prevent potential upstream backwater conditions.

After 55 days of operation, full conveyance was returned to the Potomac Interceptor on March 14, 2026, and bypass operations ceased. Following the drawdown of canal water levels, initial inspections of the canal prism and lock structures were completed, and no immediate structural repairs were identified, as necessary.

With NPS approval, DC Water constructed multiple temporary access routes between the canal and Clara Barton Parkway to support construction and cleanup activities. Access locations were selected to minimize impacts to streams, wetlands, trees, stonework, and other sensitive resources. All crossings within Area 1 incorporated MDE-compliant temporary stream crossings. The towpath remained open during construction, with chain-link fencing installed to separate the public from active work zones.

To rapidly address persistent odors and residual wastewater solids, vac truck operations were conducted to remove remaining sludge from the Canal. Collected material was discharged directly back into the PI, minimizing off-site transport and disposal. NPS facilitated delivery of freshwater to Lock 14, which was used to wash canal walls and refloat any settled debris for removal.

Following sludge removal, remaining debris and impacted soils within the canal were excavated to the clay liner and removed from the site using approved access routes. Canal stonework, stone cribs, and internal filling ports will be washed with clean water, with all wash water collected and properly disposed of. Final inspections of locks and associated structures will be conducted, and any required repairs will be completed as part of Phase II. A survey of the clay liner and Lock inverts will be prepared. The profile will be used to confirm where new clay will need to be added.

5 PHASE II REHABILITATION (RESTORATION STRATEGY)

Phase II rehabilitation activities will commence after Phase I is complete in each of the specific Areas. Because no additional uncontrolled discharges occurred during or following Phase I response and cleanup activities, Phase II does not include further debris or material removal. All Phase II restoration efforts will be conducted in coordination with, and in accordance with, NPS standards and requirements. Substantial completion of Phase II activities is anticipated by fall 2026, with select plantings scheduled during the appropriate dormant planting season.

5.1 Area 1

DC Water has begun to prepare a detailed survey of the stream invert and adjacent floodplain to identify areas where topsoil supplementation is required following Phase I cleanup. Survey data will be used to confirm existing grades and determine whether localized grade control measures are necessary. Based on these findings, a grading and rehabilitation plan will be developed to address grade control, topsoil placement, and revegetation. A comprehensive planting plan will be implemented using NPS-approved native herbaceous species, shrubs, and trees. Temporarily impacted wetlands will be regraded and replanted to restore pre-disturbance hydrology, soil structure, and native vegetation communities. Coir matting installed during Phase I consists of a biodegradable natural fiber weave with an expected service life of approximately three to five years and will remain in place unless disturbed by subsequent Phase II or other activities. Final rehabilitation may be implemented in phased segments to accommodate temporary access routes required for ongoing or residual work associated with Area 4.

5.2 Area 2

Areas that were temporarily stabilized during Phase I will be seeded with a permanent NPS-approved seed mix once the sandbag dam downstream of the Rock Run Culvert is removed, and any required culvert repairs have been completed. No in-channel grading or stabilization is anticipated, as Phase I cleanup activities were limited to naturally depositional areas immediately downstream of the culvert, with minimal disturbance to the channel. Additional detail supporting this approach is provided in the USACE Area 2 report (Exhibit 13).

5.3 Area 3

Rehabilitation efforts here will focus on water quality verification. No physical restoration activities are proposed at this time, as recovery is being assessed through coordinated water quality monitoring and evaluation of results relative to established baseline and regulatory thresholds. Refer to Section 3 for information on Water Quality Testing.

5.4 Area 4

This phase starts in Area 4 once the sewer debris and contaminated soils within the Canal are removed to the clay liner. Rehabilitation includes repairs to the clay liner, structural features, and final planting and seeding. Clay liner repairs will be completed in accordance with NPS clay repair specifications and in coordination with NPS to ensure long-term structural integrity and operational functionality. Canal embankments will be repaired as needed, including reinstalling any impacted dry-laid stone walls. Once clay is installed to the approved elevations, DC Water will install 6” of topsoil on the bottom of the

Canal and along the sides where it is deficient. All disturbed areas will be reseeded using NPS-approved permanent seed mixes. Any repairs identified in the canal structural assessment report will be completed during this phase.

Upon completion of all restoration activities and confirmation that site conditions are acceptable, Lock gates will be reconstructed and reinstalled in accordance with NPS repair guidelines, restoring the canal to its pre-event condition and function. Tree and shrub plantings will be implemented consistently with NPS landscape and planting guidelines.

5.5 Implementation Schedule

Table 5-1 provides a detailed schedule for the planned cleanup and rehabilitation activities for Areas 1 through 4. The table lists responsible parties and target completion dates. Table 5-2 provides a summary of the regulatory permits obtained and current status as part of the emergency response.

Table 5-1. Rehabilitation Implementation Schedule

Area	Phase 1 Activities [1]	Phase II Activities [1]	Phase I Completion Target	Phase II Completion Target	Final Planting Target
1	• Install clear water diversion (USACE) • Remove initial contamination (USEPA/DCW) • Temporarily stabilize (USEPA/DCW) • Complete soil testing (USEPA)	• Rehabilitation (topsoil, grading, seeding) • Plant trees and shrubs • Remove temp. Canal access routes (after Area 4 is complete).	May-26	Jun-26	Fall 2026
2	• Install clear water diversion (USACE) • Wash Rock Run Culvert (USACE) • Remove debris (USACE) • Temporary stabilization (USACE)	• Rehabilitation (topsoil, grading, seeding) • Complete repairs to Rock Run Culvert	Mar-26	Jun-26	N/A
3	• Visual inspection (USACE) • Remove debris (USACE) • Repeat contamination removal after waters recede	No physical restoration, refer to Water Quality Monitoring (Section 3)	Mar-26	N/A	N/A
4	• Remove solids/debris • Clean Locks and Levels • Remove material to clay liner	• Inspect and repair of clay liner • Repair Locks (i.e. gates) and Levels • Rehabilitation (topsoil, grading, seeding)	Jun-26	Fall 2026	N/A

[1] All activities are DC Water's responsibility, unless otherwise noted.

Table 5-2. Emergency Response Permits

	Approving Party	Purpose	Permit #	Status	Initial Submission Date	Approval Date	Expiration Date
Special Use Permit	NPS	Use of NPS Property	26-026	Issued	2/17/26	2/28/26	6/15/26
CWA 404 certification [1]	USACE	Regulates discharge of dredged or fill materials into Waters of the U.S.	Pending	Pending, with USACE	3/10/26	---	---
CWA 401 Certification [2]	MDE	Regulates and restricts activities that may impact nontidal wetlands or waters of the State.	Pending	Pending, with MDE	3/10/26	---	---
Emergency Authorization NPDES 20-CP permit	MDE	Emergency authorization for discharges of stormwater from construction activities	N/A	Issued	3/6/26	3/9/26	---
NPDES General Permit for Stormwater Associated with Construction Activity (20-CP)	MDE	Regulates stormwater discharges from construction activities	MDRCP 0AAP	Under Public Notice	4/6/26	4/29/26 (anticipated)	3/31/28
Sewage and Construction Permit	MDE	Regulates modifications to sewerage systems	Pending	With DC Water	---	---	---

[1] Assuming issuance per USACE Nationwide Permit 38

[2] Via MDE Letter of Authorization

6 LONG TERM MONITORING AND VERIFICATION

DC Water's verification process is tailored to the specific requirements of the impacted areas. For Areas 1, 2, and 4, project success is defined by the complete removal of debris and the rehabilitation of the site to pre-incident standards according to the landowner - NPS. Verification will be conducted through a post-cleanup evaluation to ensure all physical remediation is complete and followed by formal verification by NPS to confirm satisfaction. Per the anticipated permits MDE and USACE will also likely require verification that the Areas are clean and stabilized. This will be coordinated through their permit reporting requirements. For Area 3 (Potomac River), success is determined when water quality results confirm that the PI break no longer impacts the Potomac River. This will be documented through the water quality monitoring program. Table 6-1 provides a summary of the anticipated monitoring and verification requirements.

Table 6-1. Emergency Repair Verification and Long-Term Monitoring

Area	Authority	Success Criteria	Monitoring	Report
1 – Channel to Rock Run Culvert	MDE/USACE	Complete clean up and stabilize temporary impacts	Through site stabilization	20-CP and CWA 401, CWA 404 reporting
	NPS	Restore, stabilize channel, coordinate final vegetation per NPS	1 year post planting	Annual memo with photos
2 – Rock Run Culvert and channel to River	MDE	Complete clean up and stabilize temporary impacts	Through site stabilization	20-CP and CWA 401, CWA 404 reporting
	NPS	Restore channel and Culvert per NPS	Through culvert cleaning and stabilization	Post stabilization documentation
4 – C&O Canal	MDE	Complete clean up and stabilize temporary impacts	Through site stabilization	20-CP and CWA 401, CWA 404 reporting
	NPS	Restore canal prism to the appropriate elevation per NPS	1 year post planting	Annual memo with photos
3 – Potomac River, Swainson Island to Shore	MDE USACE	Complete clean up and stabilize temporary impacts	Through site stabilization	20-CP and CWA 401, CWA 404 reporting
Potomac River Downstream of spill	MDE USACE	Water quality impacts downstream of the site ceased by late February – this is voluntary sampling to further address public perception	Daily to 7/5/26 Weekly 7/5/25 to 9/10/26	Via DOEE Water Quality Portal

7 PREVENTION OF FUTURE PI OVERFLOWS

DC Water is conducting an independent, comprehensive analysis of the Potomac Interceptor (PI) failure to identify root causes and implement data-driven mitigation strategies. By integrating advanced CCTV and 'ground truthing' validation, we are refining our asset management approach to ensure that the upcoming revised Capital Improvement Plan (CIP) accurately reflects the current condition and necessary risk mitigation for the Potomac Interceptor.

That said, this was an unprecedented event that was likely caused by the boulders in the fill above and around the pipe section that failed. Moreover, those boulders blocked the downstream PI directly causing the duration and magnitude of the release. We are not aware of any other similar circumstances in the country. Without the boulders in the pipe fill, even had the PI failed; we likely would not have had a release, or if we did, it would have been of vastly smaller magnitude and duration.

7.1 Analysis of Potomac Interceptor Failure

DC Water is conducting an independent, comprehensive analysis of the PI collapse. This effort includes evaluation of structural condition, geotechnical factors (including backfill conditions), hydraulic conditions, and historical inspection data.

The analysis will define the primary and contributing causes of the failure and identify any systemic risks applicable to other interceptor segments. A summary of the scope, methodology, and findings will be compiled and made available.

7.2 Risk and Vulnerability Assessment / Reprioritization

DC Water has expanded and accelerated its PI inspection and condition assessment program. Using updated condition data, including multi-sensor inspection (MSI) results and field verification, DC Water is performing a risk and vulnerability assessment of the system.

This assessment will be used to reprioritize rehabilitation segments based on likelihood of failure (to specifically include whether boulders are in the fill of other pipe segments) and the consequence of the failure. A revised capital improvement plan (CIP), including prioritized segments and an implementation schedule, will be developed and submitted once available.

7.3 Use of Advanced Technologies for Pipe Integrity Assessment

DC Water is utilizing advanced inspection and assessment technologies to improve understanding of the PI condition. These include MSI, laser profiling, and high-resolution CCTV, supplemented by enhanced QA/QC review and field validation (“ground truthing”).

These tools allow for more accurate evaluation of remaining pipe wall thickness, identification of defects, and improved decision-making for rehabilitation planning. DC Water will continue to refine its approach to ensure that inspection data is accurate, validated, and effectively incorporated into risk-based asset management.

8 CONCLUSION

The January19, 2026, collapse of the PI posed a significant environmental challenge, to which DC Water, in coordination with multiple state and federal agencies including USACE, FEMA, USEPA, MDE and NPS, mounted a comprehensive and rapid response. This report details the actions taken to address the uncontrolled discharge, minimize environmental impacts, and establish a clear plan for restoration and future prevention.

Key outcomes of the response include the swift implementation of a pre-event planned controlled bypass utilizing the C&O Canal, which prevented an estimated two billion gallons of untreated wastewater from entering the Potomac River. The intensive Phase I cleanup activities in Areas 1 and 2 successfully removed contaminated material, as verified with USEPA’s soil sampling which confirmed that post-cleanup E. coli concentrations met established background thresholds. Water quality monitoring throughout the event demonstrated a rapid return to pre-incident baseline levels in the Potomac River, underscoring the River's natural flushing capacity. Key pollutants such as total suspended solids and nutrients were a very small percentage of the typical annual loading to the River, presenting no long-term risk.

Phase II rehabilitation is set to restore the impacted stream channel, floodplain, and C&O Canal segments to NPS standards, with substantial completion anticipated by June 30, 2026. Furthermore, DC Water has initiated a comprehensive, independent analysis of the PI failure. The findings of this analysis will be integrated into an accelerated risk and vulnerability assessment to inform a revised Capital Improvement Plan, ensuring long-term PI integrity and minimizing future overflows. DC Water remains committed to fulfilling all restoration requirements and leveraging advanced technologies to safeguard the PI system going forward.