



Commonwealth of Virginia

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Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
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March 27, 2024

VIA ELECTRONIC MAIL

Michael Liberati
Corteva Environmental Remediation
974 Centre Road, Building 735
Wilmington, DE 19805

RE: 2022 Leaf-off, 2022 Leaf-on and 2023 Leaf-on BMA Inspection Memos
Former DuPont Waynesboro Site AOC 4
Waynesboro, Virginia
EPA ID# VAD003114832

Dear Mr. Liberati,

This letter acknowledges the receipt and review of the *2022 Leaf-off, 2022 Leaf-on and 2023 Leaf-on BMA Inspection Memos* submitted October 9, 2023, to the Virginia Department of Environmental Quality, Office of Remediation Programs (Department) by AECOM on behalf of Corteva Agriscience. The memorandums document bank management inspection activities that occurred during that time.

The Department has no comments. Please contact me at 540-209-3663 or by email at William.jordan@deq.virginia.gov if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "W. Calvin Jordan".

W. Calvin Jordan
Corrective Action Project Officer
Office of Remediation Programs

cc: Michael Sherrier, DSP
Bill Reese, AECOM
Tara Mason, Laura Stuart, VDEQ
Jacqueline Morrison, USEPA

Memorandum

To Michael Liberati, EIDP, Inc., a wholly owned subsidiary of
Corteva Agriscience LLC
Nancy Grosso, EIDP, Inc., a wholly owned subsidiary of
Corteva Agriscience LLC Page 1 of 8

CC Jen Badner, AECOM
Bill Reese, AECOM
Sagar Thakali, AECOM

Subject South River BMA - 2022 Leaf-off Maintenance Inspection
Former DuPont Waynesboro Site, Area of Concern 4

From Rich Judge, AECOM

Date September 15, 2023

This memorandum summarizes the 2022 Leaf-off Maintenance Inspections (maintenance inspection) for Constitution Park, City Shops, Allied Ready Mix, Shiloh Baptist Church, and North Park completed Bank Management Areas (BMAs), conducted from January 17th – 19th, 2023. Inspection activities were conducted as specified in the scope described in the Maintenance Plan and included as Appendix M of the Basis of Design Report, Phase 1A BMAs, South River AOC 4 (Anchor QEA et al., 2016). The purpose of the inspections is to identify potential BMA maintenance needs, focusing on vegetative development, bank stability, and the integrity of the installed bank stabilization features.

Additional attachments to this memorandum include maintenance inspection logs (Table 1), vegetation plot data (Table 2), photographic logs, and Cap Area Inspection Records for each BMA as follows:

- Attachment A – Constitution Park BMA
- Attachment B – City Shops BMA
- Attachment C – Allied Ready Mix BMA
- Attachment D – Shiloh Baptist Church BMA
- Attachment E – North Park BMA

FINDINGS

Constitution Park

The 2022 Leaf-off Maintenance Inspection conducted at the Constitution Park BMA documented stable bank conditions. Heavy pedestrian traffic, particularly along improvised access paths and along the toe of slope, is limiting vegetation establishment but does not appear to be affecting the overall integrity of the bank treatment. Erosion control fabric and coir logs are mostly decomposed as designed.

A summary of findings is provided below; complete details of the maintenance inspection including maintenance inspection field sheet (Table 1), Photographic Logs, Riparian Vegetation Plot Summary (Table 2), and Cap Area Inspection Record are provided in Attachment A.

Vegetation

- Planted native vegetation was present throughout the BMA and is becoming further established over time. Live stakes which were reinstalled in the spring/summer of 2019 were minimally established; herbaceous plugs installed at the same time are continuing to establish where not impacted by foot traffic. There are still isolated areas of bank where there is little to no native vegetation established, leaving the bank vulnerable to erosion.
- Coverage of Japanese knotweed (*Fallopia japonica*) remains prevalent throughout the BMA. These were established from small, localized patches after treatment in 2019 and have been noted in the 2022 Leaf-on Maintenance Inspection memorandum (AECOM, 2023a). Japanese knotweed will continue to be monitored and treated, as necessary.

Stability

- Consistent bank angles were documented, as constructed, throughout the BMA.
- Paths from extensive foot traffic accessing the bank and along the toe of slope were noted and appear to be limiting vegetation establishment especially along the toe of the slope. Limited areas of localized scour were documented.
- A new at-risk tree was noted at 00+450' leaning over the water with bark stripped at the lower portion of the trunk.

Installed Features

- Erosion control fabric was decomposed throughout most of the BMA as designed and will continue to become part of the detrital layer and will no longer be monitored moving forward .
- Rock toe features were intact, with increased sediment deposition filling in the interstices.
- Large woody debris (LWD) were stable, and anchor chains were intact.
- Coir logs were degraded as designed, particularly in areas of increased foot traffic along toe.
- The installed gravel access path is being utilized by the public but shows signs of wear with significant exposure of geocell present.
- Minimal scour and undercutting along the bottom steps of the constructed staircase from high water events.
- Moderately exposed geocell was observed along most of the vertical bank length between 00+300' and +400'. The geocell is almost completely undercut due to erosion from high water levels at approximately 00+350'.

Riparian and Aquatic Habitat

Rapid Bioassessment Protocol (RBP) scores have generally remained similar to 2021. Most aquatic and terrestrial habitat metrics scored in the “sub-optimal” range. The “Epifaunal substrate/Available cover” parameter remains “marginal” due to the lack of near-shore habitat structure along the BMA. The left-bank vegetative protection also scored “marginal” due to the recent removal efforts of Japanese knotweed which has left patches of bare soil along the bank. RBP scores are anticipated to increase as Japanese knotweed management continues and native plants continue to establish in its place.

City Shops

The maintenance inspection conducted at the City Shops BMA documented stable conditions throughout the BMA with minimal change compared to the previous leaf-off inspection. The vegetative community is robust and thriving and bank stabilization features are intact and functioning as intended.

A summary of findings is provided below; complete details of the maintenance inspection including maintenance inspection field sheet (Table 1), Photographic Logs, Riparian Vegetation Plot Summary (Table 2), and Cap Area Inspection Record are provided in Attachment B.

Vegetation

- The upper portions of the bank exhibited dense stands of native grasses, planted saplings and shrubs throughout the BMA.
- A small sycamore was documented leaning over the water at 00+500'. Multiple at-risk trees continue to be noted in the non-remediated section.
- Small patches of invasive Japanese knotweed are present throughout the BMA. The knotweed was previously treated with herbicide in Fall 2019 and the patches noted in the 2022 Leaf-on Maintenance Inspection memorandum (AECOM, 2023b) will continue to be monitored and treated, as necessary.

Stability

- Riverbanks generally maintained a consistent bank angle throughout the BMA as constructed, with no sign of surface erosion, scour, or undercutting at the toe of slope within the remediated portions of the BMA.
- There was no evidence of recent erosion or “at-risk” trees (e.g., trees that may no longer be stable due to erosion) within the remediated areas.
- An area of erosion upstream from the remedial footprint shows signs of significant scour, minimally vegetated bank, and extensive exposed at-risk tree roots; this area will continue to be monitored to identify potential impacts to the adjacent, downstream BMAs.

Installed Features

- Erosion control fabric was intact throughout the BMA and is beginning to degrade as designed. It will become part of the detrital layer over time and will no longer be monitored moving forward.
- The installed rock toe was intact and is continuing to show evidence of desired sediment deposition throughout.
- Previous inspections documented two installed LWD features that were displaced from their original positions at the City Shops BMA; they are currently stable and continue to be within the remedial project area. They will continue to be monitored and corrective actions will be implemented if warranted.

Riparian and Aquatic Habitat

Both aquatic and terrestrial habitat parameters generally scored about equal to, or higher in 2022 than 2021. As expected, terrestrial riparian vegetation is now well established throughout the BMA, providing quality habitat for birds, beavers, otters, deer, and other organisms. Aquatic habitat has also improved as LWD features and large boulders along the rock toe have settled into long-term, stable orientations. “Epifaunal substrate/available cover” improved to “optimal” with increased aquatic habitat features available to fish such as: LWD snags and varied stream depths and substrates. Riparian habitat scores have

increased slightly as vegetation has continued to establish. RBP scores at the City Shops BMA are expected to continue improving over time.

Allied Ready Mix

With little exception, the findings of the maintenance inspection conducted at the Allied Ready Mix BMA documented stable conditions throughout the BMA with minimal change compared to the previous leaf-off inspection. Vegetative cover throughout the BMA is largely fully established with extensive natural recruitment occurring and extremely limited Japanese knotweed present.

A summary of findings is provided below; complete details of the maintenance inspection including maintenance inspection field sheet (Table 1), Photographic Logs, Riparian Vegetation Plot Summary (Table 2), and Cap Area Inspection Record are provided in Attachment C.

Vegetation

- Robust growth of planted native vegetation and natural recruitment along the stone toe was noted throughout the BMA.
- Live stakes and plantings continue to become established with at least 50% survival; however, replacement live stakes planted in the spring/summer of 2019 show limited growth. Overall vegetation growth throughout the bank is robust and well established.
- Japanese knotweed locations were noted in the 2022 Leaf-on Maintenance Inspection memorandum (AECOM, 2023c) and will be monitored and treated, as necessary.

Stability

- As built riverbank angles remained unchanged and consistent bank angles were maintained throughout the BMA as constructed.
- There were no “at-risk” trees (e.g., trees that may no longer be stable due to erosion) within the remediated portions of the BMA; however, one tree on the upper bank on the other side of the access road snapped in half and is partially situated in the river and down the bank.
- Heavy foot traffic was noted along the upstream portion of the reach, particularly around location 00+00.
- Heavy erosion continues to be present downstream of the last remediated section of the BMA. The downstream terminus of the bank treatment will continue to be monitored for signs of back cutting, which may undermine the integrity of the bank.

Installed Features

- The stone toe was intact throughout the BMA, with sediment deposition filling in the interstices providing substrate for natural recruitment of native plant species.
- Rip rap fortified outfall culverts, the Steel Run confluence, and the bank abutment remain intact and functioning as designed.

Riparian and Aquatic Habitat

In 2022, most aquatic and riparian habitat RBP metrics improved or stayed about the same as 2021. Scores for left and right-bank stability increased to the “optimal” range. Sediment deposition improved to “optimal” due to the increase in observed coarse and fine-grained sediment deposition between the interstices of the rock toe. In-stream “Embeddedness” also improved from “marginal” to “sub-optimal” over the past year. The riparian zone score continues to rank “marginal” due to the limited vertical and horizontal length of the riparian

corridor. The riparian zone score will likely remain low due to the presence of the dirt road that runs adjacent to the BMA.

Shiloh Baptist Church

The maintenance inspection conducted at the Shiloh Baptist Church BMA documented stable conditions throughout the bank. Herbaceous vegetation is largely established with substantial bank cover.

A summary of findings is provided below; complete details of the maintenance inspection including maintenance inspection field sheet (Table 1), Photographic Logs, Riparian Vegetation Plot Summary (Table 2), and Cap Area Inspection Record are provided in Attachment D.

Vegetation

- Shrubs, and saplings are minimally established throughout bank. Live stakes are planted high on the bank above the rock toe and most have not established.
- Large trees left in place during remediation along the BMA appear to be healthy and show no signs of stress.
- Japanese knotweed locations were noted in the 2022 Leaf-on Maintenance Inspection memorandum (AECOM, 2023d) and will be monitored and treated, as necessary.

Stability

- Consistent bank slopes were documented throughout the BMA with no indication of any changes from the as-built condition.
- Bank failure that occurred during late summer 2020 at section 00+550' to 00+650' and was repaired is stable; vegetation is establishing throughout that section of the repaired bank.
- There was no scour documented along the toe of slope, and there is no longer evidence of erosion from surface water runoff.
- At-risk trees (e.g., trees that may no longer be stable due to erosion) were not identified within the remediated areas.

Installed Features

- The installed rock toe was intact and showed no indication of movement.
- The armor-flex reinforced stormwater drain outlet at 00+350 was intact.
- The two corrugated plastic drainpipes installed under the greenway path below the Shiloh Baptist Church that divert stormwater away from the church and to the rock toe are in good condition.
- Minor subsidence was observed around the recently installed guardrail posts along the greenway path in the vicinity of 00+700'.

Riparian and Aquatic Habitat

RBP scores at the Shiloh Baptist Church BMA all ranked either “optimal” or “sub-optimal” in fall 2022. The short, upriver section of the BMA has a shortened riparian zone width, however the downstream portion has a significant riparian width and thus ranked highly compared to 2021. The “Embeddedness” score improved from “sub-optimal” to “optimal” with layered cobble present throughout. Some pools have also developed with mixtures of substrates including soft silt, sand, submerged aquatic vegetation, and bedrock- providing quality fish and invertebrate habitat. Vegetation has continued to establish, and the few

remaining bare patches of soil are expected to be colonized by woody and herbaceous vegetation over time.

North Park

The inspection documented relatively stable conditions in the upstream and downstream portions of the BMA. In the downstream portion of the BMA where areas of exposed geocell and erosion was repaired, the bank is maintaining stability and vegetation is establishing since the leaf-on inspection (AECOM, 2023e). Live stakes and plantings are largely unestablished.

A summary of findings is provided below; complete details of the maintenance inspection including maintenance inspection field sheet (Table 1), Photographic Logs, Riparian Vegetation Plot Summary (Table 2), and Cap Area Inspection Record are provided in Attachment E.

Vegetation

- Live stakes, shrubs, saplings, and seeded areas are minimally established at this time. Live stakes, especially in the upstream section of the BMA are planted high on the bank above the rock toe and are not establishing. Herbaceous vegetation is establishing throughout bank.
- Large trees left in place during remediation along the BMA appear to be healthy and show no signs of stress.
- Japanese knotweed locations were noted in the 2022 Leaf-on Maintenance Inspection memorandum (AECOM, 2023e) and will be monitored and treated, as necessary.

Stability

- Consistent bank slopes were documented throughout the BMA with no indication of any changes from the as-built condition.
- There was no scour documented along the toe of slope. Minimal erosion is evident throughout remediated bank, except for the non-remediated section which shows substantial erosion and at-risk vegetation with exposed roots.
- At-risk trees (e.g., trees that may no longer be stable due to erosion) were not identified within the remediated areas but were present in the non-remediated area.

Installed Features

- The installed rock toe was largely intact. In the downstream remediated section, several cobbles from the rock toe below the walking path connecting the two staircases, were displaced, or moved into the river. Displacement of the rock toe will continue to be monitored.
- The two staircases along the downstream portion of the BMA are intact with minimal erosion and scour under the bottom steps from high water. The kayak launch ramp along the first upstream staircase is intact.
- The walking path along the toe between the two staircases is intact with minor erosion from high water events that has moved the stone dust top layer of the path exposing the larger grade blue stone beneath.
- The geocell present within the repaired bank area is no longer visible with intact erosion control fabric and established vegetation.

Riparian and Aquatic Habitat

North Park RBP scores have either decreased slightly or stayed about equal in 2022 compared to 2021. “Epifaunal substrate/available cover” decreased from “optimal” to “marginal”. Upon closer examination in 2022, most habitat features (such as rock toe boulders and transient LWD from upriver) are still new and are not yet prepared for long-term habitat colonization. We expect long-term aquatic habitat features including two recently downed logs near the start of the non-remediated section to establish as productive habitat in the future. The “Pool substrate characterization” parameter declined to “sub-optimal” due to a build-up of silt near the non-remediated section with no aquatic vegetation present. The “sediment deposition” score has also improved from “sub-optimal” to “optimal” as no enlargement of gravel bars or depositional features was observed. The terrestrial/riparian metrics remain in the “sub-optimal” to “optimal” range. The upper bank is currently dominated mostly by grasses and herbaceous vegetation, but woody vegetation is expected to further establish in the future.

RECOMMENDATIONS

The following monitoring and maintenance activities are recommended for each of the BMAs based on the findings of the 2022 leaf-off inspection:

Constitution Park

- Continue invasive species management (e.g., herbicide treatment or biocontrol) to meet preliminary success criteria of >80% vegetative cover and <10% invasive vegetative cover throughout the BMA, as defined in the Phase 1 Interim Measures Work Plan (Anchor QEA et al., 2015).
- Monitor bank erosion and stability of the stairway around 00+100’, which experiences heavy foot-traffic.
- Consider measures to fill (with topsoil) and shore-up areas of bank with exposed or undercut geocell, especially at 00+300’ to 350’.

City Shops

- Continue invasive species management (e.g., herbicide treatment or biocontrol) to meet preliminary success criteria.
- Continue to monitor the location and stability of two previously dislodged pieces of LWD that are now located near 00+450’ & 00+880’.

Allied Ready Mix

- Continue invasive species management (e.g., herbicide treatment or biocontrol) to meet preliminary success criteria.

Shiloh Baptist Church

- Continue invasive species management (e.g., herbicide treatment or biocontrol) to meet preliminary success criteria.
- Continued monitoring of bank stability around Shiloh Baptist Church parking lot and Riverside Drive (greenway) to ensure surface flow drainage improvements are continuing to work as designed.
- Closely document changes in vegetative cover and stability at the recently reconstructed section of upper bank at 00+550’.

- Closely monitor signs of worsening subsidence around the recently installed guardrail posts along the greenway path, especially between approximately 00+550' and +900'. Posts will likely need to be filled in.

North Park

- Continue invasive species management (e.g., herbicide treatment or biocontrol) to meet preliminary success criteria.
- Continue monitoring erosion around walking path above the rock toe and around stairs.

REFERENCES

AECOM 2023a. Constitution Park BMA - 2022 Leaf-on Maintenance Inspection, Former DuPont Waynesboro Site, Area of Concern 4. 14 September 2023.

AECOM 2023b. City Shops BMA - 2022 Leaf-on Maintenance Inspection, Former DuPont Waynesboro Site, Area of Concern 4. 14 September 2023.

AECOM 2023c. Allied Ready Mix BMA – 2022 Leaf-on Maintenance Inspection, Former DuPont Waynesboro Site, Area of Concern 4. 14 September 2023.

AECOM 2023d. Shiloh Baptist Church BMA – 2022 Leaf-on Maintenance Inspection, Former DuPont Waynesboro Site, Area of Concern 4. 14 September 2023.

AECOM 2023e. North Park BMA – 2022 Leaf-on Maintenance Inspection, Former DuPont Waynesboro Site, Area of Concern 4. 14 September 2023.

Anchor QEA, URS Corporation, E. I. du Pont de Nemours and Company. 2015. Final Interim Measures Design, Implementation, and Monitoring Work Plan, Phase 1 – South River Area of Concern 4. February 2015.

Anchor QEA, AECOM, and E.I. du Pont de Nemours and Company. 2016. Basis of Design Report, Phase 1A Bank Management Areas, South River Area of Concern 4. September 2016.



Attachment A
Constitution Park BMA

Attachment A - Table 1
2022 Leaf-off Maintenance Inspection Log
Constitution Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft) ¹	Photo # (Attachment A)	Undercutting			Exposed Roots		At-Risk Trees		Installed Stabilization Features Intact				Local Scour		Overall Change Since Previous Inspection	
		Approximate Bank Angle (Degrees)	Consistent Grade (Y/N) ²	Notes	Exposed Roots (L/M/H) ³	Notes	At-Risk Trees Present (Y/N) ⁴	Notes	Rock Toe/LWD (Y/N) ⁵	Geocell Exposed (Y/N) ⁶	Erosion Control Fabric Exposed (Y/N) ⁶	Notes	Scour Present (Y/N) ⁷	Notes	Y/N	Notes
00 + 25	1, 2	30	N (see notes)	Lower bank: -20° Upper bank: -55°	L	No exposed roots. A couple small, woody shrubs present along bank toe	N	No trees adjacent to edge of water	NA	NA	NA	NA	Y	Slight scour and bank erosion at waters edge due to foot traffic disturbing soft sediment	Y	Significant clearing of trees, woody and herbaceous vegetation including removal of small tree and vines that were along the bank toe
00 + 00	3, 4	40	N (see notes)	Lower bank: -30° Upper bank: -55°	NA	Significant clearing of vegetation evident, including tree-cutting; exposed bank soil and erosion from foot traffic, especially near toe. 40% vegetation cover	N	No trees adjacent to edge of water	NA	Y	N	Geocell partially exposed below constructed gravel river access and along footpath; erosion control fabric deteriorated. Coir logs deteriorated	Y	Footpath from greenway still heavily used and showing exposed geocell. Second footpath present is parallel with river along the flat part of bank. Light to moderate scour and bank toe erosion near water's edge due to foot traffic disturbing soft sediment	Y	Geocell slightly more exposed along gravel path, significant cutting of trees, woody vegetation, and herbaceous vegetation; no erosion control fabric visible, erosion of toe has worsened, new, second footpath present
00 + 50	5, 6	45	Y	Lower 3' of bank toe is level	NA	30-40% invasive species cover; 60% total vegetation cover. Significant cutting of trees and herbaceous vegetation evident throughout this area; footpaths present leading to increasing exposed bank soil	Y	Sycamore tree hanging over river	Y (Rock toe)	Y	Y	Geocell partially exposed where erosion control fabric deteriorating; Erosion control fabric torn at toe of slope and 70% exposed. Coir log deteriorated	N	Evidence of increased foot traffic along the toe of slope - foot path cleared; increased exposed bank soil	Y	Bank soil slightly more exposed. At-risk sycamore tree present but was not documented in the prior leaf-off report
00 + 100	7, 8	40	N (see notes)	Lower bank: -10° Upper bank: -45°	NA	80% vegetation cover; footpaths present around base of stairs in fair condition	N	No trees adjacent to edge of water	Y (Rock toe)	N	Y	Rock toe along bank and constructed river access steps intact with undercutting under bottom steps. Erosion control fabric visible on side of steps	N	Increased fine sediment deposition along path near water's edge, new footpath along rock toe	Y	Increased fine sediment deposition along path at base of steps
00 + 150	9, 10, 11	40	N (see notes)	Lower bank: <5° Upper bank: -45°	NA	Native vegetation predominantly present; footpath present. 95% vegetation cover	N	No trees adjacent to edge of water	Y (LWD and Rock toe)	Y	N	Geocell partially exposed on bottom 1/2 of bank.	Y	Silt filling in behind LWD and in boulders; slight scour at toe of bank	N	None
00 + 200	12	50	N (see notes)	Lower bank: -10° Upper Bank: -50°	NA	Patches of invasive vegetation present; Significant portions of vegetation have been cut and/or trampled. 75% vegetation cover	N	No trees adjacent to edge of water	Y (Rock toe)	Y	Y	Geocell visible along lower bank, coir logs deteriorated	Y	Evidence of foot traffic along the toe of slope, along coir logs; minimal scour along toe	N	None
00 + 250	13, 14	55	Y	None	NA	Patches of invasive vegetation present; 60% vegetation cover	N	No trees adjacent to edge of water	NA	Y	N	Geocell less exposed at toe. Erosion control fabric degraded. Coir logs almost fully degraded	N	None	Y	No undercutting
00 + 300	15, 16	65	Y	None	NA	80% vegetation cover	N	No trees adjacent to edge of water	NA	Y	N	Geocell partially exposed on lower 1/2 of bank. Coir log degraded as designed	Y	Minimal scour	N	None
00 + 350	17, 18, 19, 20	60	Y	None	NA	85% vegetation cover; mostly Japanese knotweed	N	No trees adjacent to edge of water	NA	Y	N	Geocell significantly exposed on lower 1/2 of bank and undercut as toe has eroded away. Erosion control fabric has degraded and is no longer visible	Y	Scour present near bank toe creating undercut geocell	Y	Geocell more exposed, increased Japanese knotweed cover
00 + 400	21, 22	55	Y	None	NA	Native vegetation present along top of bank with patches of invasive knotweed throughout; 50% vegetation cover	N	No at-risk trees present	NA	Y	N	Erosion control fabric degraded; coir logs degraded as designed. Geocell slightly exposed	Y	Slight scour present	N	None
00 + 450	23, 24	45	Y	None	NA	Minimal vegetation present; 30% vegetation cover	Y	At-risk box elder tree still standing	NA	Y	Y	Small patch of erosion control fabric is mostly degraded, geocell exposed	Y	Slight undercutting and scour along toe	Y	Geocell slightly exposed
00 + 500	25	40	N (see notes)	Lower bank: -30° Upper bank: -70°	NA	Native vegetation present with patches of invasive knotweed interspersed. 90% vegetation cover.	N	No trees adjacent to edge of water	NA	N	N	None	N	None	N	None
00 + 525	26, 27	25	Y	None	NA	Predominantly native vegetation cover: 60%	N	No trees adjacent to edge of water	NA	Y	N	Geocell exposed near toe of bank; erosion control fabric degraded	N	None	N	None

Notes:

- Inspection station is described as the distance (feet) upstream (-) or downstream (+) from the start of the BMA (00); for example, Station 00+50' is 50 feet downstream from the start of the BMA
- A significant deviation from continuous bank slope or break in grade may be used as an indicator of undercutting; consistent bank grade is evaluated as Y (yes) or N (no)
- The extent to which roots are exposed may provide a relative measure of the magnitude of apparent erosion; extent of exposed roots is evaluated as L (low), M (moderate), H (high), or NA (not applicable- no exposed roots)
- At-risk trees (i.e., trees that lean towards the river) typically have a greater potential to fall into the river and dislodge the bank soil and erosion-control products immediately around and above the tree; presence of at-risk trees is evaluated as Y (yes) or N (no)
- Installed rock toe and large woody debris (LWD) features are monitored to ensure that they are anchored and determine whether material has sloughed, or been eroded, or moved downstream; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
- Installed geocell and erosion control fabric are monitored to ensure that they are intact and determine whether material is exposed or visible; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor). As of Spring 2022 almost all of the fabric and geocell is either degraded or fully covered by vegetation
- The presence of local scour is assessed at the toe and center of the bank, per inspection station, as well as approximately 25 feet upstream and downstream of the start and end of the BMA; the presence of scour is evaluated as Y (yes) or N (no)

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 01	Location: 00 – 25'
Date: 01/17/2023	
Direction: West	
Description: Lower bank; ~20°, Upper bank; ~55, No large trees adjacent to edge of water, small woody shrubs present along toe of bank, soft sediment scour present near water's edge.	
South River Leaf Off BMA-STM-01 01/17/2023, 17:03:36 EST	

Photo Number: 02	Location: 00 – 25'
Date: 01/17/2023	
Direction: Northwest	
Description: Looking downstream towards start of remediated bank: slight scour and bank toe erosion of soft soil and sediment due to foot traffic.	
South River Leaf Off BMA-STM-01 01/17/2023, 17:04:03 EST	

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 03	Location: 00 + 00'
Date: 01/17/2023	
Direction: West	
Description: Lower bank; ~30°; Upper bank; ~55°; Live stakes not visible. 40% vegetation cover; No trees adjacent to edge of water; Coir logs deteriorated. No erosion control fabric visible, scour/erosion has increased, new second footpath.	
	South River Leaf Off BMA-STM-01 01/17/2023, 17:04:31 EST

Photo Number: 04	Location: 00 + 00'
Date: 01/17/2023	
Direction: West	
Description: Geocell 25% exposed beneath gravel footpath; erosion control fabric deteriorated; bank toe erosion and soft sediment scour near water's edge due to foot traffic. Trees and vegetation have been cut significantly; some roots have been removed.	
	South River Leaf Off BMA-STM-01 01/17/2023, 17:05:19 EST

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 05	Location: 00 + 50'
Date: 01/17/2023	
Direction: West	
Description: 50% vegetation cover; "At-risk" sycamore 20 feet downstream (just out of picture).	
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="font-size: small;"> S 180 SW 210 240 W 270 300 NW 330 </div> <div style="font-size: x-small;"> ☀ 257°W (T) ● 38°3'59"N, 78°53'3"W ±13ft ▲ 1259ft </div> </div> <div style="text-align: right; font-size: x-small; margin-top: 10px;"> South River Leaf Off BMA-STM-01 01/17/2023, 17:06:01 EST </div>	

Photo Number: 06	Location: 00 + 50'
Date: 01/17/2023	
Direction: West	
Description: Geocell exposed where erosion control fabric is deteriorating; Coir log deteriorated. Evidence of foot traffic along the toe of slope.	
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="font-size: small;"> S 180 SW 210 240 W 270 300 NW 330 N 0 </div> <div style="font-size: x-small;"> ☀ 269°W (T) ● 38°3'59"N, 78°53'3"W ±13ft ▲ 1264ft </div> </div> <div style="text-align: right; font-size: x-small; margin-top: 10px;"> South River Leaf Off BMA-STM-01 01/17/2023, 17:06:37 EST </div>	

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 07	Location: 00 + 100'
Date: 01/17/2023	<p>☀ 260°W (T) ● 38°3'59"N, 78°53'3"W ±13ft ▲ 1262ft</p>
Direction: West	
<p>Description: 80% vegetation cover; slightly increased erosion around steps and path (less gravel present).</p>	
<p>00±100' South River Leaf Off BMA-STM-01 01/17/2023, 17:07:21 EST</p>	

Photo Number: 08	Location: 00 + 100'
Date: 01/17/2023	<p>☀ 262°W (T) ● 38°3'59"N, 78°53'3"W ±13ft ▲ 1261ft</p>
Direction: West	
<p>Description: Rock toe along bank and constructed river access steps intact with undercutting under bottom steps. Erosion control fabric visible on side of steps. Fine sediment deposition along path near water's edge.</p>	
<p>00±100' South River Leaf Off BMA-STM-01 01/17/2023, 17:07:39 EST</p>	

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 09	Location: 00 + 150'
Date: 01/17/2023	
Direction: West	
Description: Lower bank <5° (rock toe); Upper bank ~45°; Native vegetation predominantly present; new footpath present. 95% vegetation cover; No trees adjacent to edge of water.	
South River Leaf Off BMA-STM-01 01/17/2023, 15:55:26 EST	

Photo Number: 10	Location: 00 + 150'
Date: 01/17/2023	
Direction: Northwest	
Description: Downstream view of bank remediation; geocell exposed. Leaf pack and drift line debris present along rock toe.	
South River Leaf Off BMA-STM-01 01/17/2023, 15:55:44 EST	

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 11	Location: 00 + 150'
Date: 01/17/2023	
Direction: South	
Description: Upstream view of bank remediation; Silt filling in behind LWD and in boulders; slight scour at toe of bank.	
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>120 SE 150 S 180 210 SW 240 W 270</p> <p>☀️ 196°S (T) 🌐 38°3'59"N, 78°53'3"W ±36ft ▲ 1267ft</p> </div> <div style="text-align: right;"> <p>South River Leaf Off BMA-STM-01 01/17/2023, 15:56:01 EST</p> </div> </div>	

Photo Number: 12	Location: 00 + 200'
Date: 01/17/2023	
Direction: West	
Description: ~55° bank angle; Small patches of invasive vegetation present; 75% vegetation cover; Geocell visible and erosion fabric very exposed, coir logs deteriorated; Evidence of foot traffic along the toe of slope and coir logs; minimal scour along toe.	
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>S 180 210 SW 240 W 270 300 NW 330</p> <p>☀️ 260°W (T) 🌐 38°4'0"N, 78°53'3"W ±13ft ▲ 1263ft</p> </div> <div style="text-align: right;"> <p>South River Leaf Off BMA-STM-01 01/17/2023, 15:51:38 EST</p> </div> </div>	

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 13	Location: 00 + 250'
Date: 01/17/2023	<p>☀ 256°W (T) ● 38°4'0"N, 78°53'3"W ±42ft ▲ 1263ft</p>
Direction: West	
<p>Description: ~50° bank angle; Patches of invasive vegetation present; Live stakes 20% established. 60% vegetation cover; No trees adjacent to edge of water.</p>	
South River Leaf Off BMA-STM-01 01/17/2023, 15:47:45 EST	

Photo Number: 14	Location: 00 + 250'
Date: 01/17/2023	<p>☀ 258°W (T) ● 38°4'1"N, 78°53'3"W ±52ft ▲ 1268ft</p>
Direction: West	
<p>Description: Geocell exposed at toe below newly installed fabric. Erosion control fabric intact but exposed and above waterline; Coir logs degraded; foot traffic along toe of slope; Patches of scour present around exposed geocell.</p>	
South River Leaf Off BMA-STM-01 01/17/2023, 15:50:11 EST	

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 15		Location: 00 + 300'	
Date: 01/17/2023			
Direction: West	270°W (T) 38°4'1"N, 78°53'3"W ±19ft ▲ 1263ft		
Description: ~65° bank angle; 80% vegetation cover; Geocell partially exposed along lower bank. Erosion control degraded; Minimal scour of toe.			
	00+300'	South River Leaf Off BMA-STM-01 01/17/2023, 15:43:58 EST	

Photo Number: 16		Location: 00 + 300'	
Date: 01/17/2023			
Direction: West	271°W (T) 38°4'1"N, 78°53'4"W ±13ft ▲ 1265ft		
Description: Exposed geocell and coir log netting.			
	00+300'	South River Leaf Off BMA-STM-01 01/17/2023, 15:44:50 EST	

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 17	Location: 00 + 350'
Date: 01/17/2023	
Direction: Southwest	
<p>Description: Minimal vegetation present; 85% vegetation cover (mostly Japanese knotweed); No trees adjacent to edge of water.</p>	
<p>☀ 245°SW (T) ● 38°4'1"N, 78°53'3"W ±16ft ▲ 1263ft</p>	
00+350'	South River Leaf Off BMA-STM-01 01/17/2023, 15:38:00 EST

Photo Number: 18	Location: 00 + 350'
Date: 01/17/2023	
Direction: Northwest	
<p>Description: Downstream view of bank remediation; clear view of increased establishment of Japanese knotweed.</p>	
<p>☀ 305°NW (T) ● 38°4'1"N, 78°53'4"W ±13ft ▲ 1258ft</p>	
00+350'	South River Leaf Off BMA-STM-01 01/17/2023, 15:38:16 EST

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 19	Location: 00 + 350'
Date: 01/17/2023	
Direction: South	
Description: Upstream view of bank remediation.	
120 SE 150 S 180 SW 210 240 W 270 191°S (T) 38°4'1"N, 78°53'4"W ±32ft ▲ 1264ft	
00+350'	South River Leaf Off BMA-STM-01 01/17/2023, 15:38:40 EST

Photo Number: 20	Location: 00 + 350'
Date: 01/17/2023	
Direction: West	
Description: Geocell significantly exposed and somewhat undercut just above eroded bank toe.	
S 180 SW 210 W 270 NW 300 330 251°W (T) 38°4'1"N, 78°53'4"W ±22ft ▲ 1265ft	
00+350'	South River Leaf Off BMA-STM-01 01/17/2023, 15:39:03 EST

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 21	Location: 00 + 400'
Date: 01/17/2023	
Direction: West	
Description: Slope dominated by Japanese knotweed. 50% vegetation cover Slight scour present.	
South River Leaf Off BMA-STM-01 01/17/2023, 15:31:44 EST	

Photo Number: 22	Location: 00 + 400'
Date: 01/17/2023	
Direction: West	
Description: Minimally exposed geocell near the toe of slope.	
South River Leaf Off BMA-STM-01 01/17/2023, 15:33:06 EST	

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 23		Location: 00 + 450'	
Date: 01/17/2023			
Direction: West			
<p>Description: Minimal vegetation present (30% cover). At-risk elder tree (just out of picture to the left) is still intact.</p>			
		<p>00+450'</p> <p>South River Leaf Off BMA-STM-01 01/17/2023, 15:26:29 EST</p>	

Photo Number: 24		Location: 00 + 450'	
Date: 01/17/2023			
Direction: West			
<p>Description: Small patch of exposed erosion control fabric is degrading as designed.</p>			
		<p>00+450'</p> <p>South River Leaf Off BMA-STM-01 01/17/2023, 15:28:03 EST</p>	

South River Photo Log
 Constitution Park BMA
 2022 Leaf-off Inspection

Photo Number: 25	Location: 00 + 500'
Date: 01/17/2023	
Direction: West	
Description: ~40° bank angle; The bank design has a decreased vertical bank height (~6') compared to upstream monitoring stations; Native vegetative present with patches of the invasive knotweed interspersed: 90% vegetation cover.	

Photo Number: 26	Location: 00 + 525'
Date: 01/17/2023	
Direction: West	
Description: Predominantly native vegetation cover; No trees adjacent to edge of water.	

South River Photo Log
Constitution Park BMA
2022 Leaf-off Inspection

Photo Number: 27		Location: 00 + 525'	
Date: 01/17/2023			
Direction: South			
Description: Upstream view of remediated bank including the "at-risk" box elder tree leaning over the river at 00+450'.			
		00+525' South River Leaf Off 01/17/2023, 15:29:37 EST	

Attachment A - Table 2
2022 Leaf-off Riparian Vegetation Plots
Constitution Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Vegetative Species		Absolute % Cover ¹
Scientific Name	Common Name	Fall
Tree/Vine Stratum		
<i>Acer rubrum</i>	Red Maple	5-10
<i>Catalpa speciosa</i>	Northern Catalpa	0-5
<i>Convolvulus arvensis</i>	Field Bindweed	0-2
<i>Platanus occidentalis</i>	American Sycamore	10-20
<i>Robinia pseudoacacia</i>	Black Locust	0-50
<i>Toxicodendron radicans</i>	Poison Ivy	5
<i>Rhus typhina</i>	Staghorn Sumac	3-40
Sapling/Shrub Stratum		
<i>Acer rubrum</i>	Red Maple	0-30
<i>Ailanthus altissima</i>	Tree of Heaven	0-2
<i>Catalpa speciosa</i>	Northern Catalpa	0-10
<i>Cornus amomum</i>	Silky Dogwood	10-0
<i>Lonicera japonica</i>	Japanese Honeysuckle	0-15
<i>Physocarpus opulifolius</i>	Atlantic Ninebark	0-5
<i>Platanus occidentalis</i>	American Sycamore	0-15
<i>Rhus typhina</i>	Staghorn Sumac	0-35
Herbaceous Stratum		
<i>Amaranthus spinosus</i>	Spiny Amaranth	0-10
<i>Andropogon gerardii</i>	Big Bluestem	0-15
<i>Arctium minus</i>	Lesser Burdock	0-2
<i>Chasmanthium latifolium</i>	Indian Woodoats	20-25
<i>Convolvulus arvensis</i>	Field Bindweed	0-10
<i>Cyperus esculentus</i>	Yellow Nutsedge	0-2
<i>Elymus riparius</i>	Riverbank Wildrye	2-15
<i>Fallopia japonica</i>	Japanese Knotweed	15-25
<i>Festuca rubra</i>	Red Fescue	0-5
<i>Galium sp.</i>	Bedstraw	20
<i>Impatiens capensis</i>	Jewelweed	0-5
<i>Iris versicolor</i>	Blue Flag	0-2
<i>Lactuca serriola</i>	Prickly Lettuce	0-2
<i>Microstegium vimineum</i>	Japanese Stiltgrass	0-5
<i>Phytolacca americana</i>	Pokeberry	40-75
<i>Poa annua</i>	Annual Bluegrass	0-5
<i>Rubus spp.</i>	Raspberry	0-1
<i>Schizachyrium scoparium</i>	Little Bluestem	0-10
<i>Taraxacum spp.</i>	Dandelion	0-2
<i>Trifolium pratense</i>	Red Clover	0-1
<i>Verbesina alternifolia</i>	Wingstem	0-5
<i>Vicia americana</i>	Purple Vetch	0-2

Notes:

1. Represents the range observed between two riparian vegetative survey plots at the Constitution Park BMA.

Attachment A - Waynesboro Off-Site Cap Areas
 Inspection Record Sheet
 Maintenance Plan

Location and property owner name: Constitution Park BMA		
Item	Status/Maintenance Needs	Repairs Needed?
Access Roads	NA	NA
Trails	Numerous foot paths are present throughout with trampled vegetation. Stairs are slightly undercut along bottom but in stable condition.	1
Drainage Structures	Drainage structures are intact.	1
Outfall Structures	Outfall structures are intact.	1
Rip-Rap Protection	Rip-rap is intact.	1
Cap System Vegetative Cover	Native vegetation is well established throughout most of the BMA. Invasive knotweed remains present throughout. A significant number of trees have been cut and cleared around 00+00' with minor to moderate increases in soil erosion due to foot traffic (especially near the bank toe).	2
Cap System Geosynthetics	Geocell remains minimally exposed (1-3 in.) in several areas throughout the BMA, with more significant exposure around 00+300' to 00+400'. Exposed geocell will need topsoil fill and/or other measures to stabilize this area eventually. Erosion control fabric and coir fabrics have nearly completely degraded as designed throughout the BMA.	2
Cap System Slope Stability	Slope is generally consistent and stable.	1
Cap System Subsidence	Slight subsidence near the uppermost section of the BMA associated with foot traffic at the toe of the slope.	1
Fencing and Gates	Fencing is intact.	1

Notes:

- 1 - Functioning properly; no repairs needed
- 2 - Repairs needed (describe why, what, and where), but not time critical
- 3 - Time critical repair needed (describe what and where)

Comments:

- Recommended herbicide treatment of Japanese knotweed in late summer/early fall 2023

Inspected by: Rich Judge and Becca Indeck

Date: January 17, 2023

Attachment B
City Shops BMA

Attachment B - Table 1
2022 Leaf-off Maintenance Inspection Log
City Shops BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (B) ¹	Photo # (Attachment B)	Undercutting			Exposed Roots		At-Risk Trees		Installed Stabilization Features Intact				Local Scour		Overall Change Since Previous Inspection	
		Approximate Bank Angle (Degrees)	Consistent Grade (Y/N) ²	Notes	Exposed Roots (L/M/H) ³	Notes	At-Risk Trees Present (Y/N) ⁴	Notes	Rock Toe/LWD (Y/N) ⁵	Geocell Visible (Y/N) ⁶	Erosion Control Fabric Visible (Y/N) ⁶	Notes	Scour Present (Y/N) ⁷	Notes	Y/N	Notes
00 + 25	1, 2	80	Y	None	H	High quantity of exposed roots on the bank; 25% vegetated	Y	At risk trees present	NA	NA	NA	None	Y	Scour present throughout	N	None
00 + 00	3	60	N (see notes)	Beginning of first remediated area Upper bank: -70° Lower bank: -50°	NA	No woody plants adjacent to edge of water; vegetation fully established; grasses establishing by rock toe base	N	No woody plants adjacent to edge of water	Y (Rock toe)	N	N	None	Y	Increased scour present from rock toe to mid bank upstream of remediation	N	None
00 + 50	4, 5	45	Y	None	NA	Predominantly native vegetation along top of rock toe; vegetation fully established; grasses establishing by rock toe base	N	No woody plants adjacent to edge of water	Y (LWD and Rock toe)	Y	N	Rock toe intact; LWD intact; sediment filling behind LWD	N	No scour present along rock toe	N	None
00 + 100	6	45	Y	None	NA	Predominantly native vegetation along top of rock toe; flood debris/drift lines on rock toe; vegetation fully established; grasses establishing by rock toe base	N	No woody plants adjacent to edge of water	Y (LWD and Rock toe)	Y	N	Rock toe intact; LWD intact	N	No scour present along rock toe	N	None
00 + 150	7	45	Y	None	NA	Predominantly native vegetation along top of rock toe; flood debris on rock toe; vegetation fully established; grasses establishing by rock toe base	N	No woody plants adjacent to edge of water	Y (LWD and Rock toe)	Y	N	Rock toe intact; LWD intact; sediment filling behind LWD	N	No scour present along rock toe	Y	Minimal geocell is exposed
00 + 200	8	45	Y	None	NA	Predominantly native vegetation along top of rock toe; flood debris on rock toe; vegetation fully established; grasses establishing by rock toe base	N	No woody plants adjacent to edge of water	Y (LWD and Rock toe)	Y	N	Rock stairs and gate present on upper half of bank	N	No scour present along rock toe; outfall pipe present within rock toe	Y	Minimal geocell is exposed
00 + 250	9	40	Y	None	NA	Predominantly native vegetation along top of rock toe; flood debris on rock toe; vegetation fully established; grasses establishing by rock toe base	N	No woody plants adjacent to edge of water	Y (LWD and Rock toe)	Y	N	Rock toe intact with grasses colonizing deposited soil/sediment; LWD intact	N	No scour present along rock toe	Y	Minimal geocell is exposed
00 + 300	10	45	Y	None	NA	Predominantly native vegetation along top of rock toe; flood debris on rock toe; vegetation fully established; grasses establishing by rock toe base	Y	Smallest old growth sycamore appears dead. Tree leaning heavily over water at 80 degree angle but roots intact	Y (LWD and Rock toe)	Y	N	Rock toe intact; LWD intact	N	No scour present along rock toe	Y	Minimal geocell is exposed
00 + 350	11, 12, 13	45	Y	None	NA	Vegetation is limited around outfall	N	No at risk trees present	Y (LWD and Rock toe)	Y	N	Outfall pipe repaired 10/2020 with 12" diameter pipe; rock toe replaced around pipe	N	No scour present from outfall effluent	Y	Minimal geocell is exposed, no scour is present from outfall
00 + 400	14	35	N (see notes)	Lower bank: -25° Upper bank: -45°	NA	Predominantly native vegetation along top of rock toe; vegetation fully established; flood debris on rock toe; small depression filled with debris near outfall	N	No at risk trees present	Y (Rock toe)	Y	N	Erosion control fabric disintegrated; Rock toe intact; upstream LWD has shifted and is parallel with another piece of installed LWD at 00+450'	Y	No scour present along rock toe; two outfall pipes present within rock toe	Y	Erosion control fabric has degraded, geocell is exposed
00 + 450	15, 16, 17	40	Y	None	NA	Native vegetation along top of rock toe; vegetation fully established; some large trees present	N	No at risk trees present	Y (LWD and Rock toe)	Y	N	Erosion control fabric disintegrated; Rock toe intact;	N	No scour present along rock toe	Y	Erosion control fabric has degraded, geocell is exposed
00 + 500	18, 19, 20	35	Y	End of first remediation area	NA	Native vegetation along top of rock toe; vegetation fully established; some large trees present in good condition	Y	Small sycamore on midbank leaning over river at 45°. Roots are stable	Y (Rock toe)	Y	N	Rock toe intact	N	No scour present along rock toe	Y	Geocell exposed
00 + 550	21	70	N (see notes)	Start of unremediated area. Significant bank erosion and moderate undercutting. Lower bank: -85°, Upper bank: -45°	H	Lower bank consists mostly of exposed roots	Y	Several large trees with exposed roots hanging over the river	NA	NA	NA	Section was not remediated	Y	Entire lower bank shows large amounts of scour	Y	Roots are more exposed
00 + 600	22	75	Y	Moderate bank erosion and undercut toe	M	Lower bank consists mostly of partially exposed roots	Y	Many exposed roots along the lower bank	NA	NA	NA	Section was not remediated	Y	Entire lower bank shows large amounts of scour	Y	Increased scour
00 + 650	23, 24	80	Y	Significant bank erosion and undercutting, possible animal burrows present	M	Bank consists mostly of exposed roots	Y	At risk trees present along the upper bank.	NA	NA	NA	Section was not remediated	Y	Entire bank shows large amounts of scour	N	None

Attachment B - Table 1
2022 Leaf-off Maintenance Inspection Log
City Shops BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft) ¹	Photo # (Attachment B)	Undercutting			Exposed Roots		At-Risk Trees		Installed Stabilization Features Intact				Local Scour		Overall Change Since Previous Inspection	
		Approximate Bank Angle (Degrees)	Consistent Grade (Y/N) ²	Notes	Exposed Roots (L/M/H) ³	Notes	At-Risk Trees Present (Y/N) ⁴	Notes	Rock Toe/LWD (Y/N) ⁵	Geocell Visible (Y/N) ⁶	Erosion Control Fabric Visible (Y/N) ⁶	Notes	Scour Present (Y/N) ⁷	Notes	Y/N	Notes
00 + 700	25, 26	90	Y	Very significant bank erosion and undercutting. Two animal burrows present. End of unremediated area	H	Bank consists mostly of exposed roots	Y	At risk trees present along the upper bank.	NA	NA	NA	Section was not remediated. Mid-lower bank has no vegetation, large log now present leaning up against bank	Y	Entire bank shows large amounts of scour + more erosion just upstream of remediated section.	Y	Large log present leaning up against bank
00 + 750	27, 28, 29, 30	70	N (see notes)	Beginning of second remediated area Upstream bank: -80° Downstream bank: -45°	M	Upper bank upstream of the remediation consists mostly of exposed roots; vegetation established above rock toe	Y	At risk trees present upstream of rock toe	Y (LWD and Rock toe)	N	N	Beginning of second remediated section; Rock toe intact, LWD intact	Y	Large amounts of scour above rock toe	N	None
00 + 800	31	30	Y	None	NA	Planted vegetation well established above rock toe	N	No at risk trees present	Y (LWD and Rock toe)	N	N	Rock toe intact; LWD intact	N	No scour present along rock toe	N	None
00 + 850	32, 33, 34	25	Y	None	NA	Planted vegetation well established above rock toe	N	No at risk trees present	N (LWD) Y (Rock toe)	N	N	Rock toe intact; Previously installed LWD remains in place downstream from its original position and is closer to 00+880'	N	No scour present along rock toe	Y	Erosion control fabric no longer visible
00 + 880	35, 36, 37	20	Y	Minor bank undercutting along shoreline	NA	Planted vegetation well established above rock toe	N	No woody plants adjacent to edge of water	Y (LWD and Rock toe)	N	N	Rock toe intact; sediment deposition increasing around shifted LWD. Large log that was previously observed leaning on LWD no longer present.	N	No scour present along rock toe and lower bank	Y	Large log previously observed is gone

Notes:

- Inspection station is described as the distance (feet) upstream (-) or downstream (+) from the start of the BMA (00); for example, Station 00 + 50' is 50 feet downstream from the start of the BMA
- A significant deviation from continuous bank slope or break in grade may be used as an indicator of undercutting; consistent bank grade is evaluated as Y (yes) or N (no)
- The extent to which roots are exposed may provide a relative measure of the magnitude of apparent erosion; extent of exposed roots is evaluated as L (low), M (moderate), H (high), or NA (not applicable- no exposed roots)
- At-risk trees (i.e., trees that lean towards the river) typically have a greater potential to fall into the river and dislodge the bank soil and erosion-control products immediately around and above the tree; presence of at-risk trees is evaluated as Y (yes) or N (no)
- Installed rock toe and large woody debris (LWD) features are monitored to ensure that they are anchored and determine whether material has sloughed, or been eroded, or moved downstream; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
- Installed geocell and erosion control fabric are monitored to ensure that they are intact and determine whether material is exposed or visible; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor). As of Spring 2022 almost all of the fabric and geocell is either degraded or fully covered by vegetation
- The presence of local scour is assessed at the toe and center of the bank, per inspection station, as well as approximately 25 feet upstream and downstream of the start and end of the BMA; the presence of scour is evaluated as Y (yes) or N (no)
- Grey shaded cells are portions of the bank that were not remediated.



Photo Number: 01	Location: 00 - 25'
Date: 01/19/2023	<div style="background-color: #cccccc; padding: 5px;">South East Elevation</div> <div style="background-color: #e0e0e0; padding: 5px;"> 📍 328°NW (T) 📍 38°4'44"N, 78°52'32"W ±13ft ▲ 1257ft </div> 
Direction: Northwest	
Description: Upstream of remediated area; ~85° bank angle; high quantity of exposed roots on the bank; 25% vegetated; scour present throughout	
00-25'	South River Leaf Off BMA-STM-07 19 Jan 2023, 10:04:52

Photo Number: 02	Location: 00 - 25'
Date: 01/19/2023	<div style="background-color: #cccccc; padding: 5px;">South Elevation</div> <div style="background-color: #e0e0e0; padding: 5px;"> 📍 20°N (T) 📍 38°4'44"N, 78°52'32"W ±13ft ▲ 1263ft </div> 
Direction: North	
Description: Downstream view of start of remediated area; grasses establishing by rock toe base; at risk trees present; scour present throughout	
00-25'	South River Leaf Off BMA-STM-07 19 Jan 2023, 10:05:57

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

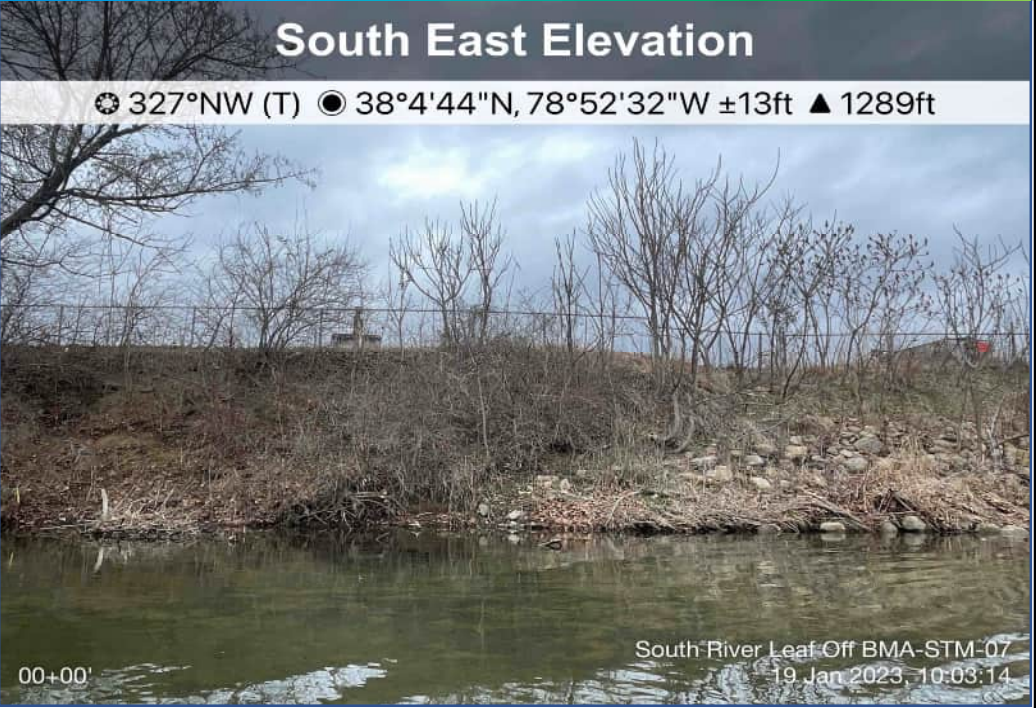

Photo Number: 03	Location: 00 + 00'
Date: 01/19/2023	<h2 style="margin: 0;">South East Elevation</h2> <p style="margin: 0;">☉ 327°NW (T) ● 38°4'44"N, 78°52'32"W ±13ft ▲ 1289ft</p>  <p style="margin: 0; font-size: small;">00+00' South River Leaf Off BMA-STM-07 19 Jan 2023, 10:03:14</p>
Direction: Northwest	
<p>Description: Beginning of 1st remediation area; lower bank ~50°; upper bank ~70°; no woody plants adjacent to edge of water; vegetation fully established and grasses establishing by rock toe base; some scour present from rock toe to mid bank upstream of remediation</p>	

Photo Number: 04	Location: 00 + 50'
Date: 01/19/2023	<h2 style="margin: 0;">South East Elevation</h2> <p style="margin: 0;">☉ 324°NW (T) ● 38°4'44"N, 78°52'31"W ±13ft ▲ 1275ft</p>  <p style="margin: 0; font-size: small;">00+50' South River Leaf Off BMA-STM-07 19 Jan 2023, 10:01:01</p>
Direction: Northwest	
<p>Description: ~45° bank angle; predominantly native vegetation along top of rock toe; vegetation fully established; grasses establishing by rock toe base; no woody plants adjacent to edge of water, drift lines present on rip rap, minimal exposed geocell</p>	

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 05	Location: 00 + 50'
Date: 01/19/2023	<h2 style="margin: 0;">South West Elevation</h2> <p style="margin: 0;">☀ 35°NE (T) ● 38°4'44"N, 78°52'31"W ±13ft ▲ 1266ft</p>
Direction: Northeast	
<p>Description: Downstream view of bank remediation; rock toe intact; LWD intact; sediment filling behind LWD; no scour present along rock toe, minimal exposed geocell</p>	
South River Leaf Off BMA-STM-07 19 Jan 2023, 10:01:40	

Photo Number: 06	Location: 00 + 100'
Date: 01/19/2023	<h2 style="margin: 0;">South East Elevation</h2> <p style="margin: 0;">☀ 327°NW (T) ● 38°4'44"N, 78°52'31"W ±13ft ▲ 1275ft</p>
Direction: Northwest	
<p>Description: ~45° bank angle; predominantly native vegetation; flood debris on rock toe; vegetation fully established; grasses establishing by rock toe base; no woody plants adjacent to edge of water; rock toe intact; LWD intact; no scour present along rock toe, minimal geocell exposed</p>	
South River Leaf Off BMA-STM-07 19 Jan 2023, 09:55:33	

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 07	Location: 00 + 150'
Date: 01/19/2023	<h3>South East Elevation</h3> <p>☼ 320°NW (T) ● 38°4'45"N, 78°52'31"W ±13ft ▲ 1271ft</p> <p>00+150' South River Leaf Off BMA-STM-07 19 Jan 2023, 09:53:13</p>
Direction: Northwest	
<p>Description: ~45° bank angle; predominantly native vegetation along top of rock toe; flood debris on rock toe; grasses establishing by rock toe base; no woody plants adjacent to edge of water; rock toe intact; LWD intact; no scour present along rock toe, minimal geocell exposed</p>	

Photo Number: 08	Location: 00 + 200'
Date: 01/19/2023	<h3>South East Elevation</h3> <p>☼ 335°NW (T) ● 38°4'45"N, 78°52'30"W ±13ft ▲ 1266ft</p> <p>00+200' South River Leaf Off BMA-STM-07 19 Jan 2023, 09:52:49</p>
Direction: Northwest	
<p>Description: ~45° bank angle; predominantly native vegetation with flood debris on top of rock toe; vegetation fully established and grasses establishing by rock toe base; no woody plants adjacent to edge of water; rock stairs and gate present on upper half of bank; no scour present along rock toe and outfall pipe present within</p>	

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 09	Location: 00 + 250'
Date: 01/19/2023	<p align="center">South East Elevation</p> <p align="center">☀ 330°NW (T) ● 38°4'45"N, 78°52'29"W ±13ft ▲ 1260ft</p> <p align="right">South River Leaf Off BMA-STM-07 19 Jan 2023, 09:44:58</p>
Direction: Northwest	
<p>Description: ~40° bank angle; predominantly native vegetation along top of rock toe; flood debris on rock toe; vegetation fully established; grasses establishing by rock toe base; no woody plants adjacent to edge of water; rock toe intact; LWD intact; no scour present along rock toe, geocell exposed</p>	

Photo Number: 10	Location: 00 + 300'
Date: 01/19/2023	<p align="center">South Elevation</p> <p align="center">☀ 339°N (T) ● 38°4'46"N, 78°52'29"W ±13ft ▲ 1269ft</p> <p align="right">South River Leaf Off BMA-STM-07 19 Jan 2023, 09:41:55</p>
Direction: North	
<p>Description: ~45° bank angle; predominantly native vegetation with flood debris along top of rock toe; vegetation fully established and grasses establishing by rock toe base; smallest sycamore appears dead; tree leaning over water at 80° angle; rock toe intact; LWD intact; no scour present along rock toe, geocell exposed</p>	

Photo Number: 11	Location: 00 + 350'
Date: 01/19/2023	
Direction: Northwest	
Description: ~45° bank angle; vegetation largely absent following outfall repair; no at- risk trees present; outfall pipe repaired 10/2020 with 12" diameter pipe remains stable and in good condition	
South River Leaf Off BMA-STM-07 19 Jan 2023, 09:37:10	

Photo Number: 12	Location: 00 + 350'
Date: 01/19/2023	
Direction: West	
Description: Upstream view of bank remediation	
South River Leaf Off BMA-STM-07 19 Jan 2023, 09:37:24	

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 13	Location: 00 + 350'
Date: 01/19/2023	<p style="text-align: center;">South West Elevation</p> <p style="text-align: center;">☀ 30°NE (T) ● 38°4'46"N, 78°52'28"W ±13ft ▲ 1272ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-07 19 Jan 2023, 09:37:45</p>
Direction: Northeast	
<p>Description: Downstream view of bank remediation; no at-risk trees present; rock toe stable</p>	

Photo Number: 14	Location: 00 + 400'
Date: 01/19/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☀ 334°NW (T) ● 38°4'46"N, 78°52'28"W ±13ft ▲ 1259ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-07 19 Jan 2023, 09:29:43</p>
Direction: Northwest	
<p>Description: ~35° bank angle; upper bank ~45 degrees; lower bank ~25 degrees; vegetation fully established; no at-risk trees present; erosion control fabric disintegrated; geocell exposed; LWD remains downstream; two outfall pipes present within rock toe; one has small depression filled with debris</p>	

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 15	Location: 00 + 450'
Date: 01/19/2023	<p>South East Elevation</p> <p>☉ 334°NW (T) ● 38°4'46"N, 78°52'27"W ±13ft ▲ 1252ft</p> <p style="font-size: small;">00+450' South River Leaf Off BMA-STM-07 19 Jan 2023, 09:23:47</p>
Direction: Northwest	
Description: ~45° bank angle; native vegetation along top of rock toe; vegetation fully established; some large trees present; no at-risk trees present; geocell exposed at top of bank and around tree bases; erosion control fabric disintegrated; rock toe intact; no scour present along rock toe	

Photo Number: 16	Location: 00 + 450'
Date: 01/19/2023	<p>South East Elevation</p> <p>☉ 320°NW (T) ● 38°4'46"N, 78°52'28"W ±13ft ▲ 1271ft</p> <p style="font-size: small;">00+450' shifted lwd from 400' South River Leaf Off BMA-STM-07 19 Jan 2023, 09:28:13</p>
Direction: Northwest	
Description: LWD shifted down from 00+400'. Sediment deposition increasing between the logs	

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 17		Location: 00 + 450'	
Date: 01/19/2023			
Direction: Northwest	302°NW (T) ● 38°4'42"N, 78°52'29"W ±111ft ▲ 1271ft		
Description: Exposed geocell just above trees. Small depression established around tree bases			
	00-450	South River Leaf Off BMA-STM-07 01/19/2023, 09:30:42 EST	

Photo Number: 18		Location: 00 + 500'	
Date: 01/19/2023			
Direction: Northwest	334°NW (T) ● 38°4'46"N, 78°52'27"W ±13ft ▲ 1269ft		
Description: ~35° bank angle; end of 1 st remediation area; native vegetation along top of rock toe; vegetation fully established; some large trees present; small sycamore with stable roots on mid-bank leaning over river at 45°; rock toe intact; no scour present along rock toe; exposed geocell.			
	00+500	South River Leaf Off BMA-STM-07 19 Jan 2023, 09:20:08	

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 19	Location: 00 + 500'
Date: 01/19/2023	
Direction: West	
<p>Description: Upstream view of the end of the 1st remediation area; native vegetation along top of rock toe; vegetation fully established; some large trees present; sycamore leaning over river at 45°; rock toe intact; no scour present along rock toe, minimal geocell exposed on upper bank</p>	

Photo Number: 20	Location: 00 + 500'
Date: 01/19/2023	
Direction: Northeast	
<p>Description: Downstream view of the end of the 1st remediation area; native vegetation along top of rock toe; vegetation fully established; some large trees present; small sycamore on mid-bank leaning over river at 45°, large tree just downstream of remediated area leaning</p>	

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 21	Location: 00 + 550'
Date: 01/19/2023	
Direction: North	
<p>Description: Start of non-remediated area; ~70° bank angle; significant bank erosion and undercutting; lower bank consists mostly of exposed roots; several large, at-risk trees; entire lower bank shows large amounts of scour</p>	
South River Leaf Off BMA STM-07 19 Jan 2023 09:16:46	

Photo Number: 22	Location: 00 + 600'
Date: 01/19/2023	
Direction: North	
<p>Description: Non-remediated area; ~75° bank angle; moderate bank erosion and significant undercutting; lower bank consists mostly of exposed roots; many exposed roots along the lower bank; entire lower bank shows large amounts of scour</p>	
South River Leaf Off BMA STM-07 19 Jan 2023 09:13:46	

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 23	Location: 00 + 650'
Date: 01/19/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☀ 335°NW (T) ● 38°4'47"N, 78°52'25"W ±13ft ▲ 1264ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-07 19 Jan 2023, 09:10:50</p>
Direction: Northwest	
<p>Description: Non-remediated area; ~80° bank angle; very significant bank erosion and undercutting; bank consists mostly of exposed roots; at risk trees present along the upper bank; entire bank shows large amounts of scour, possible animal burrows</p>	

Photo Number: 24	Location: 00 + 650'
Date: 01/19/2023	<p style="text-align: center;">South Elevation</p> <p style="text-align: center;">☀ 338°N (T) ● 38°4'47"N, 78°52'25"W ±13ft ▲ 1263ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-07 19 Jan 2023, 09:11:30</p>
Direction: North	
<p>Description: Large scoured section with undercut tree root mats. Bank consists mostly of sand; several at risk trees along upper bank</p>	

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 25	Location: 00 + 700'
Date: 01/19/2023	
Direction: North	
Description: End of non-remediated area; ~90° bank angle; very significant bank erosion and undercutting; bank consists mostly of exposed roots; at risk trees present along the upper bank; entire bank shows large amounts of scour; dead log leaning up against bank just upstream (not pictured)	


Photo Number: 26	Location: 00 + 700'
Date: 01/19/2023	
Direction: North	
Description: End of non-remediated area; ~90° bank angle; very significant bank erosion and undercutting; bank consists mostly of exposed roots; at risk trees present along the upper bank; no vegetation on mid-lower bank; entire bank shows large amounts of scour; two animal burrows present	


South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 27	Location: 00 + 750'
Date: 01/19/2023	<p>East Elevation</p> <p>☉ 259°W (T) ● 38°4'48"N, 78°52'24"W ±13ft ▲ 1247ft</p> <p style="font-size: small;">South River Leaf Off BMA-STM-07 19 Jan 2023, 09:01:02</p>
Direction: West	
Description: Beginning of second remediated area; upstream (non-remediated) bank ~80°; downstream (remediated) bank; ~45°; vegetation established above rock toe, one animal burrow present on upper bank of non-remediated section	

Photo Number: 28	Location: 00 + 750'
Date: 01/19/2023	<p>East Elevation</p> <p>☉ 286°W (T) ● 38°4'48"N, 78°52'24"W ±13ft ▲ 1264ft</p> <p style="font-size: small;">South River Leaf Off BMA-STM-07 19 Jan 2023, 09:01:24</p>
Direction: West	
Description: Upstream view from the beginning of the remediation area; at risk trees present upstream of rock toe; rock toe intact; upper bank upstream of the remediation consists mostly of exposed roots, one new dead log leaning on bank near 00+700'	

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

<p>Photo Number: 29</p>	<p>Location: 00 + 750'</p>
<p>Date: 01/19/2023</p>	<div style="text-align: center;"> <p>South West Elevation</p> <p>☀ 36°NE (T) ● 38°4'48"N, 78°52'24"W ±13ft ▲ 1270ft</p>  </div>
<p>Direction: Northeast</p>	
<p>Description: Downstream view of the beginning of the remediation area; rock toe intact, LWD intact</p>	
<p>00+750' South River Leaf Off BMA-STM-07 19 Jan 2023, 09:01:44</p>	

<p>Photo Number: 30</p>	<p>Location: 00 + 750'</p>
<p>Date: 01/19/2023</p>	<div style="text-align: center;"> <p>SW W NW N NE</p> <p>240 270 300 330 0 30</p> <p>☀ 314°NW (T) ● 38°4'48"N, 78°52'24"W ±88ft ▲ 1266ft</p>  </div>
<p>Direction: Northwest</p>	
<p>Description: Upper bank upstream of start of remediated section is undercut by an animal burrow</p>	
<p>00-750' South River Leaf Off BMA-STM-07 01/19/2023, 09:03:05 EST</p>	


South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 31	Location: 00 + 800'
Date: 01/19/2023	
Direction: North	
Description: ~30° bank angle; planted vegetation well established above rock toe; no at- risk trees present; rock toe intact; LWD intact; no scour present along rock toe	
South River Leaf Off BMA-STM-07 19 Jan 2023, 08:57:58	

Photo Number: 32	Location: 00 + 850'
Date: 01/19/2023	
Direction: North	
Description: ~25° bank angle; planted vegetation well established above rock toe; no at- risk trees present; erosion control fabric has disintegrated; saplings developing; Previously installed LWD remains in place downstream from its original position and is closer to 00+880'	
South River Leaf Off BMA-STM-07 19 Jan 2023, 08:54:05	

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 33	Location: 00 + 850'
Date: 01/19/2023	<h2 style="margin: 0;">East Elevation</h2> <p style="margin: 0;"> 📍 286°W (T) 📍 38°4'48"N, 78°52'23"W ±9ft ▲ 1253ft </p> 
Direction: West	
<p>Description: Upstream view of remediated bank; rock toe intact; no scour present along rock toe; tree saplings and grasses well established</p>	
00+850'	South River Leaf Off BMA-STM-07 19 Jan 2023, 08:54:20


Photo Number: 34	Location: 00 + 850'
Date: 01/19/2023	<h2 style="margin: 0;">South West Elevation</h2> <p style="margin: 0;"> 📍 52°NE (T) 📍 38°4'48"N, 78°52'23"W ±13ft ▲ 1239ft </p> 
Direction: Northeast	
<p>Description: Downstream view of remediated bank; rock toe intact; Previously installed LWD remains in place downstream from its original position and is closer to 00+880'; no scour present along rock toe</p>	
00+850'	South River Leaf Off BMA-STM-07 19 Jan 2023, 08:54:46

South River Photo Log
 City Shops BMA
 2022 Leaf-off Inspection

Photo Number: 35	Location: 00 + 880'
Date: 01/19/2023	<p style="text-align: center;">South Elevation</p> <p style="text-align: center;">☉ 344°N (T) ● 38°4'48"N, 78°52'23"W ±13ft ▲ 1266ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-07 19 Jan 2023, 08:46:12</p>
Direction: North	
<p>Description: ~20° bank angle; planted vegetation well established above rock toe; no woody plants adjacent to edge of water; rock toe intact; no scour present along rock toe and lower bank. Shifted LWD remains here. Large log previously observed leaning on LWD not present.</p>	

Photo Number: 36	Location: 00 + 880'
Date: 01/19/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☉ 299°NW (T) ● 38°4'48"N, 78°52'22"W ±13ft ▲ 1257ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-07 19 Jan 2023, 08:46:45</p>
Direction: Northwest	
<p>Description: Upstream view of remediated bank; sediment filling around shifted LWD; no scour present along rock toe and lower bank.</p>	

South River Photo Log
City Shops BMA
2022 Leaf-off Inspection

Photo Number: 37	Location: 00 + 880'
Date: 01/19/2023	 <p>South Elevation</p> <p>☉ 358°N (T) ● 38°4'48"N, 78°52'23"W ±19ft ▲ 1271ft</p> <p>00+880' - potential undercutting or burrow</p> <p>South River Leaf Off BMA-STM-07 19 Jan 2023, 08:51:41</p>
Direction: North	
Description: Minor bank undercutting along shoreline	

Attachment B - Table 2
2022 Leaf-off Riparian Vegetation Plots
City Shops BMA
Former DuPont Waynesboro Site, Area of Concern 4

Vegetative Species		Absolute % Cover ¹
Scientific Name	Common Name	Fall
Tree/Vine Stratum		
<i>Ailanthus altissima</i>	Tree of Heaven	0-40
<i>Celastrus orbiculatus</i>	Oriental Bittersweet	0-60
<i>Juglans nigra</i>	Black Walnut	0-15
<i>Liriodendron tulipifera</i>	Tulip Poplar	0-5
<i>Physocarpus opulifolius</i>	Atlantic Ninebark	0-30
<i>Platanus occidentalis</i>	American Sycamore	0-5
<i>Rhus glabra</i>	Smooth Sumac	0-20
<i>Rhus typhina</i>	Staghorn Sumac	0-20
<i>Vitis vulpina</i>	Frost Grape	0-10
Sapling/Shrub Stratum		
<i>Acer negundo</i>	Box Elder	0-10
<i>Acer rubrum</i>	Red Maple	0-1
<i>Acer saccharinum</i>	Silver Maple	0-1
<i>Ailanthus altissima</i>	Tree of Heaven	0-40
<i>Betula nigra</i>	River Birch	5-5
<i>Catalpa speciosa</i>	Northern Catalpa	0-2
<i>Cornus spp.</i>	Dogwood	0-5
<i>Elaeagnus umbellata</i>	Autumn Olive	0-2
<i>Fothergilla gardenii</i>	Dwarf Witch-alder	0-10
<i>Lonicera tatarica</i>	Tatarian Honeysuckle	0-5
<i>Platanus occidentalis</i>	American Sycamore	1-5
<i>Populus deltoides</i>	Eastern Cottonwood	0-5
<i>Rhus typhina</i>	Staghorn Sumac	0-20
<i>Senna marilandica</i>	Maryland Senna	0-20
Herbaceous Stratum		
<i>Acer negundo</i>	Box Elder	0-2
<i>Agrostis sp.</i>	Bentgrass	0-25
<i>Amaranthus spinosus</i>	Spiny Amaranth	0-40
<i>Andropogon gerardii</i>	Big Bluestem	10-20
<i>Barbarea vulgaris</i>	Yellow Rocket	0-5
<i>Brassica rapa</i>	Field Mustard	0-2
<i>Carex sp.</i>	Sedge sp.	0-60
<i>Chasmanthium latifolium</i>	Indian Woodoats	0-30
<i>Conoclinium coelestinum</i>	Blue Mistflower	0-1
<i>Convolvulus arvensis</i>	Field Bindweed	0-2
<i>Conyza canadensis</i>	Horseweed	0-5
<i>Coreopsis sp.</i>	Tickseed sp.	0-2
<i>Cynodon dactylon</i>	Bermuda grass	0-2
<i>Cyperus esculentus</i>	Yellow Nutsedge	0-5
<i>Daucus carota</i>	Queen Anne's Lace	0-1
<i>Dichanthelium clandestinum</i>	Deertongue Grass	0-5
<i>Elymus riparius</i>	Riverbank Wildrye	5-10
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	0-1
<i>Eupatorium perfoliatum</i>	Boneset	0-2
<i>Euphorbia cyparissias</i>	Cypress Spurge	0-1

Attachment B - Table 2 (continued)
2022 Leaf-off Riparian Vegetation Plots
City Shops BMA
Former DuPont Waynesboro Site, Area of Concern 4

<i>Eurybia divaricata</i>	White Wood Aster	10-25
<i>Fallopia japonica</i>	Japanese Knotweed	0-5
<i>Galium sp.</i>	Bedstraw	0-5
<i>Lepidium vrginicum</i>	Virginia Pepperweed	0-1
<i>Lespedeza sp.</i>	Lespedeza sp.	0-5
<i>Linaria vulgaris</i>	Butter-and-Eggs	0-5
<i>Oxalis stricta</i>	Common Yellow Woodsorrel	0-1
<i>Panicum virgatum</i>	Switchgrass	5-10
<i>Persicaria sp.</i>	Jumpseed (pink flower)	0-20
<i>Phytolacca americana</i>	Pokeberry	0-5
<i>Poa annua</i>	Annual Bluegrass	0-5
<i>Potentilla recta</i>	Sulphur Cinquefoil	0-1
<i>Ranunculus recurvatus</i>	Blisterwort	0-1
<i>Rumex spp.</i>	Sorrells/Docks	0-3
<i>Saponaria officinalis</i>	Soapwort	0-3
<i>Securigera varia</i>	Crownvetch	0-5
<i>Senna marilandica</i>	Maryland Senna	2-25
<i>Sonchus arvensis</i>	Perennial Sow-Thistle	0-2
<i>Trifolium repens</i>	White Clover	0-15
<i>Verbascum virgatum</i>	Wand Mullein	0-2
<i>Verbesina alternifolia</i>	Wingstem	0-15
<i>Vernonia noveboracensis</i>	New York Ironweed	0-2
<i>Vicia americana</i>	Purple Vetch	5-10
Notes:		
1. Represents the range observed between two riparian vegetative survey plots at the City Shops BMA.		

Attachment B - Waynesboro Off-Site Cap Areas
 Inspection Record Sheet
 Maintenance Plan

Location and property owner name: City Shops BMA		
Item	Status/Maintenance Needs	Repairs Needed?
Access Roads	NA	NA
Trails	Stairs are intact.	1
Drainage Structures	Drainage structures are intact.	1
Outfall Structures	Outfalls and proximal rip rap are intact and in good condition.	1
Rip-Rap Protection	Rip-rap is intact.	1
Cap System Vegetative Cover	Plantings are healthy and have been effective in preventing the colonization of invasive plants. The cap system is primarily covered in vegetation. Many (mostly younger) trees have been cut by beavers but roots remain intact. Japanese knotweed is still present throughout the BMA.	1
Cap System Geosynthetics	There are multiple areas with minimal geocell exposed, but the overall cap system is intact and functioning as designed.	1
Cap System Slope Stability	Slope is consistent and stable along remediated sections.	1
Cap System Subsidence	None observed.	1
Fencing and Gates	Fencing and gates are intact.	1

Notes:

- 1 - Functioning properly; no repairs needed
- 2 - Repairs needed (describe why, what, and where), but not time critical
- 3 - Time critical repair needed (describe what and where)

Comments:

- LWD shifted downstream at 400' and 880' but both remain intact
- Recommended herbicide of Japanese knotweed in late summer/early fall 2023

Inspected by: Rich Judge and Becca Indeck Date: 01/19/2023

Attachment C
Allied Ready Mix BMA

Attachment C - Table 1
2022 Leaf-off Maintenance Inspection Log
Allied Ready Mix BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft) ¹	Photo # (Attachment C)	Undercutting			Exposed Roots		At-Risk Trees		Installed Stabilization Features Intact				Local Scour		Overall Change Since Previous Inspection	
		Approximate Bank Angle (Degrees)	Consistent Grade (Y/N) ²	Notes	Exposed Roots (L/M/H) ³	Notes	At-Risk Trees Present (Y/N) ⁴	Notes	Rock Toe/LWD (Y/N) ⁵	Geocell Exposed (Y/N) ⁶	Erosion Control Fabric Visible (Y/N) ⁶	Notes	Scour Present (Y/N) ⁷	Notes	(Y/N)	Notes
00 + 20	1, 2	20	Y	Upstream of remediated section	NA	No woody vegetation established adjacent to water; native herbaceous vegetation fully established	N	No woody plants adjacent to edge of water	NA	NA	NA	No fabric or geocell installed here	Y	Evidence of moderate foot traffic; path present along bank down from access road to bank toe/area under the bridge with minimal associated scour	N	None
00 + 00	3	45	Y	Start of first remediated section	NA	Native herbaceous vegetation mostly established; grasses are a bit sparse along mid-upper bank	N	None	Y (Rock Toe)	Y	N	Rock toe intact	Y	Foot traffic present along bank, sand deposition above rock toe	N	None
00 + 50	4	50	Y	None	NA	Native herbaceous vegetation fully established	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	Sand deposition at toe of bank	N	None
00 + 100	5, 6	50	Y	None	NA	Native herbaceous vegetation fully established	N	None	Y (Rock Toe)	Y	N	Rock toe intact, geocell minimally exposed	N	None	Y	Improvised weir is no longer present in the river
00 + 150	7, 8	50	Y	None	NA	Native herbaceous vegetation fully established	N	None	Y (Rock Toe)	Y	N	Geocell is minimally exposed along upper bank	N	Light sand deposition at toe of bank	Y	Geocell exposed
00 + 200	9, 10	50	Y	None	NA	Native vegetation established, some exposed bank soil/sparse grass coverage	N	None	Y (Rock Toe)	Y	N	Rock toe intact, geocell minimally exposed	N	Sand/sediment deposition at toe of bank	Y	None
00 + 250	11, 12	50	Y	None	NA	Native herbaceous vegetation fully established, footpath present down from top of bank	N	None	Y (Rock Toe)	Y	N	Rock toe intact, geocell minimally exposed	N	Sand/sediment deposition at toe of bank filling between boulders	Y	None
00 + 300	13	40	Y	None	NA	Native herbaceous vegetation fully established, grasses colonizing deposited soil/sediment on rock toe	N	None	Y (Rock Toe)	N	N	Rock toe intact; Footpath from top of bank down to toe	N	Sand deposition at toe of bank	N	None
00 + 350	14	50	Y	None	NA	Native herbaceous vegetation fully established	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	Sand deposition at toe of bank	N	None
00 + 400	15	50	Y	None	NA	Native herbaceous vegetation fully established	N	None	Y (Rock Toe)	N	N	Rock toe intact; outfall drainage structure intact	N	Sand deposition at toe of bank	Y	Geocell exposed
00 + 450	16, 17, 18	60	Y	None	NA	Native herbaceous vegetation fully established	N	None	Y (Rock Toe)	Y	N	Geocell is minimally exposed	N	Sediment deposition at toe of bank	Y	Geocell exposed
00 + 500	19	60	Y	None	NA	Native herbaceous vegetation fully established, footpath observed above rock toe	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	Sediment deposition at toe of bank and above rock toe	N	None
00 + 550	20, 21	50	N	Lower bank: -30° Upper bank: -50°	NA	Native herbaceous vegetation fully established	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	Sediment deposition at toe of bank; debris on plateau between lower and upper bank due to flooding	N	None
00 + 600	22	45	N	Lower bank: -30° Upper bank: -45°	NA	Native herbaceous vegetation fully established	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	None	N	None
00 + 650	23	45	N	Lower bank: -30° Upper bank: -45°	NA	Native herbaceous vegetation fully established, footpath present above rock toe	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	None	N	None

Attachment C - Table 1
2022 Leaf-off Maintenance Inspection Log
Allied Ready Mix BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft) ¹	Photo # (Attachment C)	Undercutting			Exposed Roots		At-Risk Trees		Installed Stabilization Features Intact				Local Scour		Overall Change Since Previous Inspection	
		Approximate Bank Angle (Degrees)	Consistent Grade (Y/N) ²	Notes	Exposed Roots (L/M/H) ³	Notes	At-Risk Trees Present (Y/N) ⁴	Notes	Rock Toe/LWD (Y/N) ⁵	Geocell Visible (Y/N) ⁶	Erosion Control Fabric Visible (Y/N) ⁶	Notes	Scour Present (Y/N) ⁷	Notes	(Y/N)	Notes
00 + 700	24, 25, 26	45	N	Lower bank: -30° Upper bank: -45°	NA	Native herbaceous vegetation fully established, footpath present above rock toe	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	None	N	None
00 + 750	27	45	N	End of first remediated section Lower bank: -30° Upper bank: -45°	NA	Native herbaceous vegetation fully established	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	Sand deposition at rock toe, footpath above rock toe causing minor sediment/sand erosion, minor sediment erosion behind bedrock	N	None
00 + 1250	28, 29, 30	20	N	Start of second remediated section Non-remediated upstream section: -80° Remediated section: -40°	H	Exposed roots just upstream of remediated bank; native herbaceous vegetation fully established	Y	One large at-risk tree just upstream of remediated bank	Y (Rock Toe)	NA	NA	Entirely rip rap portion of bank in good condition; remediation downstream	N	Sand deposition at rock toe, major scour upstream of remediated section around large tree	N	None
00 + 1300	31	20	Y	Fortified tributary channel	NA	No exposed roots; native herbaceous vegetation fully established	N	None	Y (Rock Toe)	NA	NA	Entirely rip-rap portion of bank, fortified tributary channel is in good condition with no major changes to surface water hydrology	N	None	N	None
00 + 1350	32	50	Y	None	NA	Native herbaceous vegetation fully established	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	None	N	None
00 + 1400	33, 34	50	Y	None	NA	Native herbaceous vegetation fully established	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	Light sediment deposition above rock toe	N	None
00 + 1450	35	80	N	Lower bank: -45° Upper bank: -80°	NA	Native herbaceous vegetation fully established	N	None	Y (Rock Toe)	N	N	Rip-rap fortified bank abutment intact	Y	Scoured bank just beyond end of rip rap, upper bank slightly undercut	N	None
00 + 1500	36, 37, 38	90	Y	Bank heavily undercut downstream of remediation	H	Severe root exposure downstream of remediated bank; native herbaceous vegetation fully established	Y	Multiple at-risk trees downstream of remediated bank	NA	NA	NA	No fabric or geocell installed; downstream of remediation	Y	Significant scour and bank erosion present downstream of remediated section	N	None

Notes:

- Inspection station is described as the distance (feet) upstream (-) or downstream (+) from the start of the BMA (00); for example, Station 00 + 50' is 50 feet downstream from the start of the BMA
- A significant deviation from continuous bank slope or break in grade may be used as an indicator of undercutting; consistent bank grade is evaluated as Y (yes) or N (no)
- The extent to which roots are exposed may provide a relative measure of the magnitude of apparent erosion; extent of exposed roots is evaluated as L (low), M (moderate), H (high), or NA (not applicable- no exposed roots)
- At-risk trees (i.e., trees that lean towards the river) typically have a greater potential to fall into the river and dislodge the bank soil and erosion-control products immediately around and above the tree; presence of at-risk trees is evaluated as Y (yes) or N (no)
- Installed rock toe and large woody debris (LWD) features are monitored to ensure that they are anchored and determine whether material has sloughed, or been eroded, or moved downstream; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
- Installed geocell and erosion control fabric are monitored to ensure that they are intact and determine whether material is exposed or visible; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor). As of Spring 2022 almost all of the fabric and geocell is either degraded or fully covered by vegetation
- The presence of local scour is assessed at the toe and center of the bank, per inspection station, as well as approximately 25 feet upstream and downstream of the start and end of the BMA; the presence of scour is evaluated as Y (yes) or N (no)
- Grey shaded cells are portions of the bank that were not remediated

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 01	Location: 00 - 20'
Date: 01/18/2023	<p style="text-align: center;">North West Elevation</p> <p style="text-align: center;">☀ 141°SE (T) ● 38°4'43"N, 78°52'32"W ±13ft ▲ 1258ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 16:05:45</p>
Direction: Southeast	
<p>Description: ~35° bank angle; no woody plants adjacent to edge of water; upstream of remediation; heavy foot traffic along bank and under bridge is evident.</p>	

Photo Number: 02	Location: 00 - 20'
Date: 01/18/2023	<p style="text-align: center;">West Elevation</p> <p style="text-align: center;">☀ 82°E (T) ● 38°4'43"N, 78°52'32"W ±13ft ▲ 1267ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 16:06:05</p>
Direction: East	
<p>Description: Downstream view from non-remediated section; no woody vegetation established adjacent to water; native herbaceous vegetation fully established.</p>	

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 03	Location: 00 + 00'
Date: 01/18/2023	<h3>North West Elevation</h3> <p>☀️ 145°SE (T) ● 38°4'44"N, 78°52'32"W ±13ft ▲ 1250ft</p>
Direction: Southeast	
<p>Description: ~55° bank angle; start of remediated bank; few live stakes observed; native vegetation fully established; no at-risk trees present; rock toe intact with sand deposition; trampled, sparse grass cover associated with foot traffic along bank, minimal geocell exposed</p>	
00+00'	South River Leaf Off BMA-STM-08 18 Jan 2023, 16:04:01

Photo Number: 04	Location: 00 + 50'
Date: 01/18/2023	<h3>North West Elevation</h3> <p>☀️ 144°SE (T) ● 38°4'44"N, 78°52'31"W ±13ft ▲ 1261ft</p>
Direction: Southeast	
<p>Description: ~50° bank angle; few live stakes observed; vegetation fully established; no at-risk trees present; rock toe intact; sand deposition at toe of bank.</p>	
00+50'	South River Leaf Off BMA-STM-08 18 Jan 2023, 16:01:29

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection



Photo Number: 05	Location: 00 + 100'
Date: 01/18/2023	<h3 style="margin: 0;">North West Elevation</h3> <div style="background-color: #e0e0e0; padding: 2px; margin: 2px 0;"> ☀ 135°SE (T) ● 38°4'44"N, 78°52'31"W ±13ft ▲ 1238ft </div>  <div style="display: flex; justify-content: space-between; margin-top: 5px;"> 00+100' South River Leaf Off BMA-STM-08 18 Jan 2023, 15:57:35 </div>
Direction: Southeast	
Description: ~50° bank angle; few live stakes observed; herbaceous vegetation fully established; no at-risk trees present; rock toe intact, no improvised weir observed, minimal geocell exposed	

Photo Number: 06	Location: 00 + 100'
Date: 01/18/2023	<h3 style="margin: 0;">South West Elevation</h3> <div style="background-color: #e0e0e0; padding: 2px; margin: 2px 0;"> ☀ 64°NE (T) ● 38°4'44"N, 78°52'31"W ±9ft ▲ 1239ft </div>  <div style="display: flex; justify-content: space-between; margin-top: 5px;"> 00+100' South River Leaf Off BMA-STM-08 18 Jan 2023, 15:57:31 </div>
Direction: Northeast	
Description: Downstream view of remediated bank; vegetation fully established; no at-risk trees present.	

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection



Photo Number: 07	Location: 00 + 150'
Date: 01/18/2023	 <p>North West Elevation ☀ 137°SE (T) ● 38°4'44"N, 78°52'31"W ±13ft ▲ 1259ft</p> <p>00+150' South River Leaf Off BMA-STM-08 18 Jan 2023, 15:54:19</p>
Direction: Southeast	
Description: ~50° bank angle; live stakes 60% established; herbaceous vegetation mostly established; no at-risk trees present; rock toe intact; sand deposition at toe of bank, minimal geocell exposed.	

Photo Number: 08	Location: 00 + 150'
Date: 01/18/2023	 <p>North West Elevation ☀ 124°SE (T) ● 38°4'44"N, 78°52'30"W ±9ft ▲ 1253ft</p> <p>00+150' geocell South River Leaf Off BMA-STM-08 18 Jan 2023, 15:55:36</p>
Direction: Southeast	
Description: Minimal geocell exposed, vegetation mostly established.	

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 09	Location: 00 + 200'
Date: 01/18/2023	<p style="text-align: center;">North West Elevation</p> <p style="text-align: center;">☀️ 140°SE (T) 🌐 38°4'45"N, 78°52'30"W ±13ft ▲ 1278ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 15:51:39</p>
Direction: Southeast	
<p>Description: ~50° bank angle; live stakes 70% established; native vegetation mostly established, some exposed bank soil; no at-risk trees present; rock toe intact; sand deposition at toe of bank.</p>	
00+200'	

Photo Number: 10	Location: 00 + 200'
Date: 01/18/2023	<p style="text-align: center;">West Elevation</p> <p style="text-align: center;">☀️ 113°E (T) 🌐 38°4'44"N, 78°52'30"W ±9ft ▲ 1262ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 15:52:28</p>
Direction: East	
<p>Description: Minimally exposed geocell and sparse grass cover</p>	
00+200' exposed geocell	

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 11	Location: 00 + 250'
Date: 01/18/2023	<p style="text-align: center;">North West Elevation</p> <p style="text-align: center;">☼ 137°SE (T) ● 38°4'45"N, 78°52'29"W ±13ft ▲ 1268ft</p>
Direction: Southeast	
<p>Description: ~50° bank angle; live stakes 60% established; herbaceous vegetation fully established; no at-risk trees present; rock toe intact; sand deposition at toe of bank, filling between cobble.</p>	
00+250'	South River Leaf Off BMA-STM-08 18 Jan 2023, 15:48:10

Photo Number: 12	Location: 00 + 250'
Date: 01/18/2023	<p style="text-align: center;">North West Elevation</p> <p style="text-align: center;">☼ 127°SE (T) ● 38°4'45"N, 78°52'29"W ±9ft ▲ 1273ft</p>
Direction: Southeast	
<p>Description: Exposed geocell on mid- and upper bank where footpath leads down to toe.</p>	
00+250' exposed geocell	South River Leaf Off BMA-STM-08 18 Jan 2023, 15:49:21

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 13	Location: 00 + 300'
Date: 01/18/2023	
Direction: Southeast	
Description: ~35° bank angle; few live stakes observed; herbaceous vegetation fully established; no at-risk trees present; rock toe intact; footpath present; soil deposition at toe of bank with grasses colonizing.	
00+300'	South River Leaf Off BMA-STM-08 18 Jan 2023, 15:44:08

Photo Number: 14	Location: 00 + 350'
Date: 01/18/2023	
Direction: Southeast	
Description: ~30° bank angle; no live stakes observed; herbaceous vegetation fully established; no at-risk trees present; rock toe intact; sand deposition at toe of bank.	
00+350'	South River Leaf Off BMA-STM-08 18 Jan 2023, 15:39:48

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 15	Location: 00 + 400'
Date: 01/18/2023	
Direction: Southeast	
<p>Description: ~50° bank angle; no live stakes observed; herbaceous vegetation fully established; no at-risk trees present; rock toe intact; outfall drainage structure intact; sand deposition at toe of bank.</p>	
South River Leaf Off BMA-STM-08 18 Jan 2023, 15:36:44	

Photo Number: 16	Location: 00 + 450'
Date: 01/18/2023	
Direction: Southeast	
<p>Description: ~50° bank angle; no live stakes observed; herbaceous vegetation fully established; no at-risk trees present; sand deposition at toe of bank.</p>	
South River Leaf Off BMA-STM-08 18 Jan 2023, 15:31:04	

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

<p>Photo Number: 17</p>	<p>Location: 00 + 450'</p>
<p>Date: 01/18/2023</p>	
<p>Direction: Southeast</p>	
<p>Description: Sparse grass cover and footpath present down the bank. Toe slightly eroded.</p>	

<p>Photo Number: 18</p>	<p>Location: 00 + 450'</p>
<p>Date: 01/18/2023</p>	
<p>Direction: Southeast</p>	
<p>Description: Light sand deposition present around rock toe.</p>	

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection


Photo Number: 19	Location: 00 + 500'
Date: 01/18/2023	
Direction: Southeast	
<p>Description: ~30° bank angle; no live stakes observed; herbaceous vegetation fully established; no at-risk trees present; rock toe intact; sand deposition at toe of bank and above rock toe, footpath observed above rock toe.</p>	
	<p>00+500'</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 15:22:08</p>

Photo Number: 20	Location: 00 + 550'
Date: 01/18/2023	
Direction: Southeast	
<p>Description: Lower bank ~20°; upper bank ~40°; no live stakes observed; herbaceous vegetation fully established; no at-risk trees present; rock toe intact; sand deposition at toe of bank.</p>	
	<p>00+550'</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 15:20:17</p>

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 21	Location: 00 + 550'
Date: 01/18/2023	<h3 style="margin: 0;">West Elevation</h3> <div style="background-color: #e0e0e0; padding: 5px; margin: 5px 0;"> ☀ 86°E (T) ● 38°4'47"N, 78°52'26"W ±22ft ▲ 1267ft </div> 
Direction: East	
<p>Description: Downstream view of remediated bank; debris on plateau above rock toe due to flooding; plateau above rock toe becoming more pronounced.</p>	
00+550'	South River Leaf Off BMA-STM-08 18 Jan 2023, 15:20:32

Photo Number: 22	Location: 00 + 600'
Date: 01/18/2023	<h3 style="margin: 0;">North West Elevation</h3> <div style="background-color: #e0e0e0; padding: 5px; margin: 5px 0;"> ☀ 151°SE (T) ● 38°4'47"N, 78°52'26"W ±13ft ▲ 1257ft </div> 
Direction: Southeast	
<p>Description: Lower bank ~20°; upper bank ~40°; no live stakes observed; herbaceous vegetation fully established; no at-risk trees present; rock toe intact.</p>	
00+600'	South River Leaf Off BMA-STM-08 18 Jan 2023, 15:18:11

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 23	Location: 00 + 650'
Date: 01/18/2023	
Direction: Southeast	
<p>Description: Lower bank ~20'; upper bank ~40'; live stakes 20% established; herbaceous vegetation fully established; no at-risk trees present; rock toe intact; sand deposition at toe of bank; footpath present above rock toe.</p>	
	<p style="text-align: center;">North West Elevation</p> <p style="text-align: center;">☼ 146°SE (T) ● 38°4'47"N, 78°52'25"W ±13ft ▲ 1263ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 15:12:19</p> <p>00+650'</p>

Photo Number: 24	Location: 00 + 700'
Date: 01/18/2023	
Direction: Southeast	
<p>Description: Lower bank ~20'; upper bank ~40'; live stakes 20% established; herbaceous vegetation fully established; no at-risk trees present; rock toe intact; sand deposition at toe of bank.</p>	
	<p style="text-align: center;">North West Elevation</p> <p style="text-align: center;">☼ 144°SE (T) ● 38°4'47"N, 78°52'25"W ±13ft ▲ 1263ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 15:09:09</p> <p>00+700'</p>

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 25	Location: 00 + 700'
Date: 01/18/2023	<p style="text-align: center;">North East Elevation</p> <p style="text-align: center;">☀ 203°SW (T) ● 38°4'47"N, 78°52'25"W ±13ft ▲ 1258ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 15:09:24</p>
Direction: Southwest	
<p>Description: Upstream view of remediated bank; herbaceous vegetation fully established; no at-risk trees present; rock toe intact; sediment deposition at toe of bank.</p>	

Photo Number: 26	Location: 00 + 700'
Date: 01/18/2023	<p style="text-align: center;">West Elevation</p> <p style="text-align: center;">☀ 86°E (T) ● 38°4'47"N, 78°52'25"W ±13ft ▲ 1262ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 15:10:21</p>
Direction: East	
<p>Description: Downstream view.</p>	

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 27	Location: 00 + 750'
Date: 01/18/2023	<p style="text-align: center;">North West Elevation</p> <p style="text-align: center;">☀ 151°SE (T) 🕒 38°4'47"N, 78°52'24"W ±13ft ▲ 1238ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 15:07:53</p>
Direction: Southeast	
<p>Description: End of 1st remediated section; lower bank ~10°; upper bank ~40°; no live stakes observed; herbaceous vegetation fully established; no at-risk trees in remediated area; rock toe intact; sand deposition at rock toe, footpath above rock toe causing minor sediment/sand erosion.</p>	

Photo Number: 28	Location: 00 + 1250'
Date: 01/18/2023	<p style="text-align: center;">North West Elevation</p> <p style="text-align: center;">☀ 125°SE (T) 🕒 38°4'50"N, 78°52'19"W ±13ft ▲ 1245ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 14:52:01</p>
Direction: Southeast	
<p>Description: Start of 2nd remediated section; bank angle non-remediated upstream section ~70°; remediated section ~30°; exposed roots and scour just upstream of remediated bank; upper bank slightly undercut; one large at-risk tree upstream of remediated bank, rock toe intact.</p>	

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 29	Location: 00 + 1250'
Date: 01/18/2023	<p style="text-align: center;">North Elevation</p> <p style="text-align: center;">☼ 180°S (T) ● 38°4'50"N, 78°52'19"W ±13ft ▲ 1256ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 14:52:36</p>
Direction: South	
<p>Description: Upstream view from start of 2nd remediated bank; scour upstream of remediated section.</p>	
00+1250'	

Photo Number: 30	Location: 00 + 1250'
Date: 01/18/2023	<p style="text-align: center;">West Elevation</p> <p style="text-align: center;">☼ 72°E (T) ● 38°4'50"N, 78°52'19"W ±26ft ▲ 1258ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 14:52:27</p>
Direction: East	
<p>Description: Downstream view of start of 2nd remediated bank; entirely rip rap portion of bank; remediation downstream.</p>	
00+1250'	

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 31	Location: 00 + 1300'
Date: 01/18/2023	<p style="text-align: center;">North West Elevation</p> <p style="text-align: center;">☀ 120°SE (T) ● 38°4'50"N, 78°52'19"W ±13ft ▲ 1244ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 14:50:14</p>
Direction: Southeast	
<p>Description: ~10° bank angle; fortified tributary channel; no exposed roots; herbaceous vegetation fully established around channel; no at-risk trees present; entirely rip rap portion of bank.</p>	

Photo Number: 32	Location: 00 + 1350'
Date: 01/18/2023	<p style="text-align: center;">North West Elevation</p> <p style="text-align: center;">☀ 114°SE (T) ● 38°4'51"N, 78°52'18"W ±13ft ▲ 1253ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 14:46:49</p>
Direction: Southeast	
<p>Description: ~30° bank angle; live stakes 20% established; herbaceous vegetation fully established; no at-risk trees present; rock toe intact.</p>	

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 33		Location: 00 + 1400'	
Date: 01/18/2023	<p>West Elevation</p> <p>☀️ 110°E (T) 🌐 38°4'51"N, 78°52'18"W ±13ft ▲ 1243ft</p>		
Direction: East			
<p>Description: ~70° bank angle; live stakes 50% established; herbaceous vegetation fully established; no at-risk trees present; rock toe intact; light sediment deposition above rock toe.</p>	<p>00+1400'</p> <p>South River Leaf Off BMA-STM-08 18 Jan 2023, 14:43:49</p>		

Photo Number: 34		Location: 00 + 1400'	
Date: 01/18/2023	<p>North Elevation</p> <p>☀️ 185°S (T) 🌐 38°4'51"N, 78°52'18"W ±13ft ▲ 1240ft</p>		
Direction: South			
<p>Description: Upstream view of remediated bank; herbaceous vegetation fully established; no at-risk trees present; rock toe intact.</p>	<p>00+1400'</p> <p>South River Leaf Off BMA-STM-08 18 Jan 2023, 14:44:50</p>		

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 35	Location: 00 + 1450'
Date: 01/18/2023	<p style="text-align: center;">North West Elevation</p> <p style="text-align: center;">☀ 114°SE (T) ● 38°4'51"N, 78°52'18"W ±13ft ▲ 1251ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 14:41:01</p>
Direction: Southeast	
<p>Description: ~70° bank angle; live stakes 50% established; herbaceous vegetation fully established; no at-risk trees present; rip rap bank abutment intact; scoured bank just beyond end of rip rap; upper bank slightly undercut.</p>	
00+1450'	

Photo Number: 36	Location: 00 + 1500'
Date: 01/18/2023	<p style="text-align: center;">West Elevation</p> <p style="text-align: center;">☀ 108°E (T) ● 38°4'51"N, 78°52'18"W ±13ft ▲ 1257ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-08 18 Jan 2023, 14:34:11</p>
Direction: East	
<p>Description: ~90° bank angle; end of 2nd remediated section; herbaceous vegetation established; bank heavily undercut with significant erosion., high root exposure, several at risk trees.</p>	
00+1500'	

South River Photo Log

Allied Ready Mix BMA
2022 Leaf-off Inspection

Photo Number: 37	Location: 00 + 1500'
Date: 01/18/2023	<div style="background-color: #333333; color: white; padding: 5px; text-align: center;"> <h3>North Elevation</h3> <p>☉ 166°S (T) ● 38°4'52"N, 78°52'18"W ±13ft ▲ 1253ft</p> </div> <div style="position: absolute; bottom: 5px; right: 5px; font-size: small;"> South River Leaf Off BMA-STM-08 18 Jan 2023, 14:35:09 </div>
Direction: South	
<p>Description: Upstream view of remediated bank from 00 + 1500'</p>	

Photo Number: 38	Location: 00 + 1500'
Date: 01/18/2023	<div style="background-color: #333333; color: white; padding: 5px; text-align: center;"> <h3>South West Elevation</h3> <p>☉ 58°NE (T) ● 38°4'51"N, 78°52'18"W ±13ft ▲ 1248ft</p> </div> <div style="position: absolute; bottom: 5px; right: 5px; font-size: small;"> South River Leaf Off BMA-STM-08 18 Jan 2023, 14:35:02 </div>
Direction: Northeast	
<p>Description: Downstream view of end of 2nd remediated section; bank heavily undercut downstream of remediation; severe root exposure downstream of remediated bank; high density of at-risk trees downstream of remediated bank.</p>	

Attachment C - Table 2
2022 Leaf-off Riparian Vegetation Plots
Allied Ready Mix BMA
Former DuPont Waynesboro Site, Area of Concern 4

Vegetative Species		Absolute % Cover ¹
Scientific Name	Common Name	Fall
Tree/Vine Stratum		
<i>Acer saccharinum</i>	Silver Maple	40-55
<i>Celastrus orbiculatus</i>	Oriental Bittersweet	15-2
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	0-20
<i>Platanus occidentalis</i>	American Sycamore	0-5
<i>Toxicodendron radicans</i>	Poison Ivy	0-10
Sapling/Shrub Stratum		
<i>Acer rubrum</i>	Red Maple	0-15
<i>Acer saccharinum</i>	Silver Maple	1-15
<i>Ailanthus altissima</i>	Tree of Heaven	0-2
<i>Albizia julibrissin</i>	Persian Silktree	0-2
<i>Betula nigra</i>	River Birch	0-5
<i>Betula pendula</i>	Silver Birch	0-5
<i>Cornus alba</i>	White Dogwood	0-15
<i>Cornus racemosa</i>	Gray Dogwood	0-5
<i>Elaeagnus umbellata</i>	Autumn Olive	0-5
<i>Lonicera japonica</i>	Japanese Honeysuckle	0-5
<i>Lonicera tatarica</i>	Tatarian Honeysuckle	20-30
<i>Physocarpus opulifolius</i>	Atlantic Ninebark	1-5
<i>Platanus occidentalis</i>	American Sycamore	5-30
<i>Populus deltoides</i>	Eastern Cottonwood	0-10
<i>Prunus sp.</i>	Cherry sp.	0-2
<i>Rubus fruticosus</i>	Blackberry	0-5
<i>Rubus spp.</i>	Raspberry	0-3
<i>Salix nigra</i>	Black Willow	0-20
<i>Sambucus spp.</i>	Elderberry	0-40
<i>Ulmus pumila</i>	Siberian Elm	0-5
Herbaceous Stratum		
<i>Acer rubrum</i>	Red Maple	0-5
<i>Alliaria petiolata</i>	Garlic Mustard	0-5
<i>Amaranthus spinosus</i>	Spiny Amaranth	0-2
<i>Andropogon gerardii</i>	Big Bluestem	2
<i>Arctium minus</i>	Lesser Burdock	2-25
<i>Axonopus spp.</i>	Carpet Grass	10-20
<i>Carex sp.</i>	Sedge sp.	0-3
<i>Chasmanthium latifolium</i>	Indian Woodoats	20-30
<i>Cirsium spp.</i>	Thistle sp.	0-1
<i>Dichanthelium clandestinum</i>	Deertongue Grass	1-5
<i>Elymus riparius</i>	Riverbank Wildrye	0-20
<i>Eupatorium perfoliatum</i>	Common Boneset	0-5
<i>Eurybia divaricata</i>	White Wood Aster	0-2
<i>Eutrochium purpureum</i>	Joe-Pye Weed	2
<i>Fallopia japonica</i>	Japanese Knotweed	0-60
<i>Galium aparine</i>	Bedstraw	0-40
<i>Impatiens capensis</i>	Jewelweed	15-70
<i>Lepidium campestre</i>	Field Pepperweed	0-1

Attachment C - Table 2 (continued)
2022 Leaf-off Riparian Vegetation Plots
Allied Ready Mix BMA
Former DuPont Waynesboro Site, Area of Concern 4

<i>Lespedeza thunbergii</i>	Thunberg's Lespedeza	0-1
<i>Microstegium vimineum</i>	Japanese Stiltgrass	0-10
<i>Panicum virgatum</i>	Switchgrass	0-5
<i>Perilla frutescens</i>	Beefsteak Plant	0-40
<i>Persicaria pensylvanica</i>	Pennsylvania Smartweed	1-25
<i>Phytolacca americana</i>	Pokeberry	0-2
<i>Pilea pumila</i>	Clearweed	0-2
<i>Rosa multiflora</i>	Multiflora Rose	0-2
<i>Rumex obtusifolius</i>	Broad-Leaved Dock	0-3
<i>Salix spp. (live stakes)</i>	Willow sp.	1-5
<i>Securigera varia</i>	Crownvetch	0-10
<i>Senna marilandica</i>	Maryland Senna	0-20
<i>Solidago spp.</i>	Goldenrod sp.	1-2
<i>Sorghastrum nutans</i>	Indiangrass	0-2
<i>Tridens flavus</i>	Purpletop Grass	0-10
<i>Trifolium repens</i>	White Clover	0-10
<i>Ulmus parvifolia</i>	Chinese Elm	0-5
<i>Verbascum thapsus</i>	Great Mullein	0-5
<i>Verbesina alternifolia</i>	Wingstem	5
<i>Vicia americana</i>	Purple Vetch	1-5
<i>Vicia sativa</i>	Common Vetch	0-1

Notes:

1. Represents the range observed between two riparian vegetative survey plots at the Allied Ready Mix BMA.

Attachment C - Waynesboro Off-Site Cap Areas
 Inspection Record Sheet
 Maintenance Plan

Location and property owner name: Allied Ready Mix BMA		
Item	Status/Maintenance Needs	Repairs Needed?
Access Roads	Access roads are in good condition.	1
Trails	Some improvised civilian pathways present near the far upstream and downstream portions of the BMA.	1
Drainage Structures	Drainage structures are intact.	1
Outfall Structures	Outfalls structures are intact.	1
Rip-Rap Protection	Rip-rap is intact.	1
Cap System Vegetative Cover	Some live stakes have established along the bank and others are gone. Native vegetative cover has increased particularly near the upstream section of the BMA.	1
Cap System Geosynthetics	Erosion control fabric is not exposed in any areas, geocell is minimally exposed along the upper bank in the upstream section.	1
Cap System Slope Stability	Slope is consistent and stable along remediated sections.	1
Cap System Subsidence	No cap system subsidence observed.	1
Fencing and Gates	Fencing and gates are intact.	1

Notes:

- 1 - Functioning properly; no repairs needed
- 2 - Repairs needed (describe why, what, and where), but not time critical
- 3 - Time critical repair needed (describe what and where)

Comments:

- Will continue to monitor geocell exposure in 2023
- Recommended herbicide treatment of Japanese knotweed in late summer/early fall 2023

Inspected by: Rich Judge and Becca Indeck Date: 01/18/2023

Attachment D
Shiloh Baptist Church BMA

Attachment D - Table 1
2022 Leaf-off Maintenance Inspection Log
Shiloh Baptist Church BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft)	Photo # (Attachment D)	Undercutting			Exposed Roots		At-Risk Trees		Installed Stabilization Features Intact				Local Scour		Overall Change Since Previous Inspection	
		Approximate Bank Angle (Degrees)	Consistent Grade (Y/N) ²	Notes	Exposed Roots (L/M/H) ¹	Notes	At-Risk Trees Present (Y/N) ⁴	Notes	Rock Toe/LWD (Y/N) ⁵	Geocell Exposed (Y/N) ⁶	Erosion Control Fabric Viable (Y/N) ⁸	Notes	Scour Present (Y/N) ⁷	Notes	Y/N	Notes
00 - 25	1	30	Y	None	M	Some vegetation; exposed roots along bank around small trees and large Sycamore; access pathways present; vegetation 50% cover	Y	Large Sycamore with exposed roots is partially rooted in the river and leaning slightly	NA	NA	NA	Upstream of remediation. Some large boulders have been installed along the bank on the downstream end of the railroad bridge abutment	Y	Minimal scour present	Y	New boulders have been placed along the downstream end of the railroad bridge abutment
00 + 00	2	30	Y	None	M	Grasses and herbaceous and woody vegetation established; vegetation 90% cover	N	None	Y (Rock Toe)	N	N	No exposure, culvert just upstream of remediation	Y	Concrete by culvert is slightly undercut but in fair condition	N	None
00 + 50	3, 4, 5	25	Y	None	NA	Increased grass cover, vegetation 95% cover	N	None	Y (Rock Toe)	Y	N	No exposure, rock toe intact	N	Evidence of sediment deposition in rock toe	Y	Footpaths and exposed geocell in limited areas
00 + 100	6	30	Y	None	NA	Grasses established, footpaths present, vegetation 95% cover	N	None	Y (Rock Toe)	Y	N	No exposure, rock toe intact, footpath present	N	Evidence of sediment deposition in rock toe	Y	Geocell minimally exposed
00 + 150	7, 8	50	N	Lower bank: -40° Upper bank: -60° Above greenway: -60°	NA	Grasses established, small footpath present from fence to rock toe, vegetation 95% cover	N	None	Y (Rock Toe)	N	N	Evidence of surface water runoff above greenway	N	Evidence of sediment deposition in rock toe	N	None
00 + 200	9	50	N	Lower bank: -40° Upper bank: -60° Above greenway: -60°	NA	Vegetation 95% cover	N	None	Y (Rock Toe)	N	N	No exposure; rock toe intact; plastic corrugated pipe exposed on bank above greenway but in good condition	N	Evidence of sediment deposition in rock toe	N	None
00 + 250	10, 11	55	N	Lower bank: -45° Upper bank: -65° Above greenway: -70°	NA	Increased native herbaceous vegetation cover, plantings installed above and below greenway intact, 40% of area above greenway is exposed, vegetation 95% cover otherwise	N	None	Y (Rock Toe)	Y	Y	Fabric and geocell minimally exposed above and below the greenway, rock toe intact	N	Evidence of sediment deposition in rock toe	N	None
00 + 300	12, 13	65	N	Lower bank: -45° Upper bank: -80° Above greenway: -70°	NA	Plantings intact but some missing above greenway; live stakes not established some grass cover; vegetation 95% cover	N	None	Y (Rock Toe)	N	Y	Erosion control fabric degraded, geocell exposed above the greenway, drainage pipe across greenway in good condition, rock toe intact, geocell also exposed on lower bank just downstream	N	Evidence of sediment deposition in rock toe	Y	Geocell minimally exposed below greenway
00 + 350	14, 15, 16, 17	50	N	Lower bank: -20° Upper bank: -70°	NA	Plantings intact downstream of culvert and grasses fully established upstream of culvert, vegetation 95% cover	N	None	Y (Rock Toe)	N	N	Entirely rip-rap; large plastic corrugated pipe and Armorflex mat installed and in good condition	N	Gravel deposition at outfall	N	None
00 + 400	18	50	N	Lower bank: -45° Upper bank: -50°	NA	Grasses established, vegetation 95% cover	N	None	Y (Rock Toe)	N	N	Rock toe intact, couch (flat portion of bank) present between top of rip rap and upper bank	N	Evidence of sediment deposition in rock toe	Y	Grasses and vegetation are better established
00 + 450	19, 20	50	N	Lower bank: -45° Upper bank: -55°	NA	Grasses established, vegetation and tree growth in rock toe, vegetation 95% cover	N	None	Y (Rock Toe)	Y	N	Rock toe intact; Some evidence of erosion from runoff from Riverside Drive, couch present between top of rip rap and upper bank	N	Evidence of sediment deposition in rock toe, increased scour along mid-bank where couch is	Y	Erosion control fabric no longer viable, upper bank has one minor rill erosion channel with exposed geocell likely due to surface runoff from above
00 + 500	21, 22	55	N	Lower bank: -45° Upper bank: -65°	NA	Grasses and herbaceous vegetation establishing with sparse patches of bare soil, vegetation 85% cover	N	None	Y (Rock Toe)	Y	N	Rock toe intact, couch present between top of rip rap and upper bank, geocell minimally exposed	N	Evidence of sediment deposition in rock toe	N	None
00 + 550	23, 24, 25	60	N	Lower bank: -75° Upper bank: -45°	NA	Reseeded grasses are more established on failed bank section, 70% grass cover	N	None	Y (Rock Toe)	N	N	Rock toe intact, repaired bank intact, couch present between top of rip rap and upper bank	N	Evidence of sediment deposition in rock toe	Y	Grasses and vegetation are better established on failed bank section
00 + 600	26	60	N	Lower bank: -45° Upper bank: -75°	NA	Reseeded grasses are more established on failed bank section with sparse patches of exposed soil, 90% grass and herbaceous vegetation cover	N	None	Y (Rock Toe)	N	N	Rock toe intact, couch present between top of rip rap and upper bank	N	Evidence of sediment deposition in rock toe	N	None
00 + 650	27, 28	65	N	Lower bank: -60° Upper bank: -70° End of repaired section	NA	Grasses are more established, vegetation 80% cover with sparse patches of exposed soil	N	None	Y (Rock Toe)	N	N	Rock toe intact, couch present between top of rip rap and upper bank	N	Evidence of sediment deposition in rock toe	N	None

Attachment D - Table 1
2022 Leaf-off Maintenance Inspection Log
Shiloh Baptist Church BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft) ¹	Photo # (Attachment D)	Undercutting			Exposed Roots		At-Risk Trees		Installed Stabilization Features Intact				Local Scour		Overall Change Since Previous Inspection	
		Approximate Bank Angle (Degrees)	Consistent Grade (Y/N) ²	Notes	Exposed Roots (L/M/H) ³	Notes	At-Risk Trees Present (Y/N) ⁴	Notes	Rock Toe/LWD (Y/N) ⁵	Geocell Exposed (Y/N) ⁶	Erosion Control Fabric Exposed (Y/N) ⁶	Notes	Scour Present (Y/N) ⁷	Notes	Y/N	Notes
00 + 700	29	50	Y	None	NA	Grasses well established, vegetation 95% cover	N	None	Y (Rock Toe)	N	N	Rock toe intact; erosion and foot traffic by memorial on side of greenway; minor soil subsidence around guardrail vertical supports at top of bank; couch present between top of rip rap and upper bank	N	Evidence of sediment deposition in rock toe	Y	Minor subsidence around guardrail vertical supports at the top of the bank, some evidence of foot traffic
00 + 750	30	45	Y	None	NA	Grasses are well established, vegetation 95% cover	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	Evidence of sediment deposition in rock toe	N	None
00 + 800	31	45	Y	None	NA	Grasses and one woody shrub are established, vegetation 100% cover	N	None	Y (Rock Toe)	N	N	Rock toe intact, couch on top of bank	N	Evidence of sediment deposition in rock toe	N	None
00 + 850	32, 33	45	Y	None	NA	Grasses are mostly established, one patch of exposed soil just above rock toe; vegetation 80% cover	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	Evidence of sediment deposition in rock toe	N	None
00 + 900	34, 35, 36	45	Y	None	NA	Grasses established, vegetation 85% cover	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	Evidence of sediment deposition in rock toe	Y	Increased vegetation cover
00 + 950	37	45	Y	None	NA	Grasses are well established, vegetation 90% cover	N	None	Y (Rock Toe)	N	N	Rock toe intact	N	Evidence of sediment deposition in rock toe from 2021 inspection appears to have washed out	Y	Sediment deposition washed out from rock toe
00 + 975	38, 39, 40	45	Y	End of remediation	NA	Grasses are well established along upper bank, vegetation 90% cover	Y	Exposed roots and at-risk trees present downstream of remediation	Y (Rock Toe)	N	N	Rock toe intact, rip-rap installed at top of bank	Y	Evidence of sediment deposition, moderate scour present downstream of remediation	Y	New rip rap section installed on upper bank

Notes:

- Inspection station is described as the distance (feet) upstream (-) or downstream (+) from the start of the BMA (00); for example, Station 00 + 50' is 50 feet downstream from the start of the BMA
- A significant deviation from continuous bank slope or break in grade may be used as an indicator of undercutting; consistent bank grade is evaluated as Y (yes) or N (no)
- The extent to which roots are exposed may provide a relative measure of the magnitude of apparent erosion; extent of exposed roots is evaluated as L (low), M (moderate), H (high), or NA (not applicable- no exposed roots)
- At-risk trees (i.e., trees that lean towards the river) typically have a greater potential to fall into the river and dislodge the bank soil and erosion-control products immediately around and above the tree; presence of at-risk trees is evaluated as Y (yes) or N (no)
- Installed rock toe and large woody debris (LWD) features are monitored to ensure that they are anchored and determine whether material has sloughed, or been eroded, or moved downstream; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
- Installed geocell and erosion control fabric are monitored to ensure that they are intact and determine whether material is exposed or visible; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor). As of Spring 2022 almost all of the fabric and geocell is either degraded or fully covered by vegetation
- The presence of local scour is assessed at the toe and center of the bank, per inspection station, as well as approximately 25 feet upstream and downstream of the start and end of the BMA; the presence of scour is evaluated as Y (yes) or N (no)
- Grey shaded cells are portions of the bank that were not remediated

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 01	Location: 00 - 25'
Date: 01/19/2023	<p style="text-align: center;">North East Elevation</p> <p style="text-align: center;">☀ 247°SW (T) ● 38°4'15"N, 78°53'7"W ±13ft ▲ 1258ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 11:53:40</p>
Direction: Southwest	
<p>Description: Upstream of remediation; ~30° bank angle; 50% vegetation; exposed roots along bank around small trees and large Sycamore (not pictured); access pathway has been covered by large boulders placed just downstream of bridge abutment; minimal scour present.</p>	
00-25'	

Photo Number: 02	Location: 00 + 00'
Date: 01/19/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☀ 294°NW (T) ● 38°4'15"N, 78°53'7"W ±13ft ▲ 1264ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 11:51:22</p>
Direction: Northwest	
<p>Description: ~30° bank angle; vegetation 90% cover: grasses, herbaceous and woody vegetation; culvert just upstream of remediation in fair condition with minimal proximal scour.</p>	
00+ 00'	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 03	Location: 00 + 50'
Date: 01/19/2023	<h3>East Elevation</h3> <p>☉ 285°W (T) ● 38°4'15"N, 78°53'7"W ±13ft ▲ 1259ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 11:48:26</p>
Direction: West	
<p>Description: ~25° bank angle; increased grass cover; some grass has been tamped down by foot traffic; no trees adjacent to edge of water; minimal geocell exposed; rock toe intact; evidence of sediment deposition in rock toe.</p>	
00+ 50'	

Photo Number: 04	Location: 00 + 50'
Date: 01/19/2023	<h3>North East Elevation</h3> <p>☉ 208°SW (T) ● 38°4'15"N, 78°53'7"W ±13ft ▲ 1259ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 11:48:40</p>
Direction: Southwest	
<p>Description: Upstream view of non-remediated portion; large Sycamore tree with exposed roots leaning slightly toward river.</p>	
00+ 50'	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 05		Location: 00 + 50'	
Date: 01/19/2023	South Elevation		
Direction: North	☀ 341°N (T) ● 38°4'15"N, 78°53'7"W ±13ft ▲ 1261ft		
Description: Downstream view of remediated bank; grasses well established along upper bank; rock toe intact; railing was recently installed from 00 + 00' to convergence of Greenway and Shiloh Church parking lot.			
	00+ 50'	South River Leaf Off BMA-STM-03 19 Jan 2023, 11:48:56	

Photo Number: 06		Location: 00 + 100'	
Date: 01/19/2023	East Elevation		
Direction: West	☀ 287°W (T) ● 38°4'16"N, 78°53'7"W ±16ft ▲ 1241ft		
Description: Grasses and one live stake are established; vegetation 95% cover; no trees adjacent to edge of water; rock toe intact; footpath present; evidence of sediment deposition in rock toe, geocell minimally exposed.			
	00+ 100'	South River Leaf Off BMA-STM-03 19 Jan 2023, 11:44:56	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 07	Location: 00 + 150'
Date: 01/19/2023	<h3>East Elevation</h3> <p>☉ 289°W (T) ● 38°4'16"N, 78°53'7"W ±13ft ▲ 1257ft</p>
Direction: West	
<p>Description: ~ 50° bank angle; lower bank ~40°; upper bank ~60°; Above GW ~60°; vegetation 95% cover; no trees adjacent to edge of water; evidence of sediment deposition in rock toe; surface water runoff above greenway.</p>	
00+ 150'	South River Leaf Off BMA-STM-03 19 Jan 2023, 11:42:40

Photo Number: 08	Location: 00 + 150'
Date: 01/19/2023	<h3>South East Elevation</h3> <p>☉ 298°NW (T) ● 38°4'16"N, 78°53'7"W ±13ft ▲ 1271ft</p>
Direction: Northwest	
<p>Description: Footpath present with exposed soil above rock toe.</p>	
00+ 150'	South River Leaf Off BMA-STM-03 19 Jan 2023, 11:42:59

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 09	Location: 00 + 200'
Date: 01/19/2023	
Direction: West	
<p>Description: ~ 50° bank angle; grasses and vegetation fully established: 95% cover, including one sapling that has established within rock toe; rock toe intact; plastic corrugated pipe exposed on bank above GW in good condition.</p>	
<p>East Elevation ☼ 285°W (T) ● 38°4'17"N, 78°53'7"W ±9ft ▲ 1263ft</p>	
<p>South River Leaf Off BMA-STM-03 19 Jan 2023, 11:39:18</p>	

Photo Number: 10	Location: 00 + 250'
Date: 01/19/2023	
Direction: West	
<p>Description: ~ 55° bank angle; lower bank ~45°; upper bank ~65°; above GW ~70°; no trees adjacent to edge of water; evidence of sediment deposition in rock toe; Erosion control fabric and geocell minimally exposed above greenway.</p>	
<p>East Elevation ☼ 278°W (T) ● 38°4'17"N, 78°53'6"W ±13ft ▲ 1267ft</p>	
<p>South River Leaf Off BMA-STM-03 19 Jan 2023, 11:34:40</p>	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

<p>Photo Number: 11</p>	<p>Location: 00 + 250'</p>
<p>Date: 01/19/2023</p>	<p style="text-align: center;">East Elevation</p> <p style="text-align: center;">☀ 285°W (T) ● 38°4'17"N, 78°53'7"W ±13ft ▲ 1264ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023 11:34:57</p>
<p>Direction: West</p>	
<p>Description: Native herbaceous vegetation well established. Geocell is minimally exposed above greenway.</p>	

<p>Photo Number: 12</p>	<p>Location: 00 + 300'</p>
<p>Date: 01/19/2023</p>	<p style="text-align: center;">East Elevation</p> <p style="text-align: center;">☀ 272°W (T) ● 38°4'18"N, 78°53'6"W ±13ft ▲ 1288ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023 11:30:53</p>
<p>Direction: West</p>	
<p>Description: ~ 65° bank angle; lower bank ~45°; upper bank ~80°; above GW ~70°; vegetation 90% cover; erosion control fabric degraded, geocell minimally exposed above and below the GW; drainage pipe across GW in good condition; rock toe intact with evidence of sediment deposition.</p>	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

<p>Photo Number: 13</p> <hr/> <p>Date: 01/19/2023</p> <hr/> <p>Direction: West</p> <hr/> <p>Description: Corrugated drainage pipe from church parking lot in good condition.</p>	<p style="text-align: center;">Location: 00 + 300'</p> <div style="text-align: center; background-color: #333; color: white; padding: 5px;"> <p>East Elevation</p> <p>☀ 262°W (T) ● 38°4'18"N, 78°53'7"W ±13ft ▲ 1265ft</p> </div>  <p style="text-align: right; font-size: small;">South River Leaf Off BMA-STM-03 01/19/2023, 11:35:49 EST</p>
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<p>Photo Number: 14</p> <hr/> <p>Date: 01/19/2023</p> <hr/> <p>Direction: West</p> <hr/> <p>Description: ~50° bank angle; vegetation 95% cover; entirely riprap; large plastic corrugated pipe and Armorflex mat installed and in good condition; gravel deposition at outfall; no erosion control fabric or geocell exposed.</p>	<p style="text-align: center;">Location: 00 + 350'</p> <div style="text-align: center; background-color: #333; color: white; padding: 5px;"> <p>East Elevation</p> <p>☀ 272°W (T) ● 38°4'18"N, 78°53'6"W ±13ft ▲ 1260ft</p> </div>  <p style="text-align: right; font-size: small;">South River Leaf Off BMA-STM-03 19 Jan 2023, 11:27:28</p>
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South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 15	Location: 00 + 350'
Date: 01/19/2023	<h3>North East Elevation</h3> <p>☀ 224°SW (T) ● 38°4'18"N, 78°53'6"W ±13ft ▲ 1259ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 11:27:43</p>
Direction: Southwest	
<p>Description: Upstream view of remediated bank; grasses are well established upstream of culvert.</p>	
00+ 350'	

Photo Number: 16	Location: 00 + 350'
Date: 01/19/2023	<h3>South Elevation</h3> <p>☀ 348°N (T) ● 38°4'18"N, 78°53'6"W ±13ft ▲ 1263ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 11:27:50</p>
Direction: North	
<p>Description: Downstream view of remediated bank; grasses are well established and rock toe is intact.</p>	
00+ 350'	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

<p>Photo Number: 17</p>	<p>Location: 00 + 350'</p>
<p>Date: 01/19/2023</p>	<p style="text-align: center;">East Elevation</p> <p style="text-align: center;">☀ 277°W (T) ● 38°4'18"N, 78°53'7"W ±13ft ▲ 1268ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 01/19/2023 11:31:04 EST</p>
<p>Direction: West</p>	
<p>Description: View of culvert and placed rip rap. Rip rap and Armorflex concrete mattress working as designed. No erosion observed in or around mattress.</p>	

<p>Photo Number: 18</p>	<p>Location: 00 + 400'</p>
<p>Date: 01/19/2023</p>	<p style="text-align: center;">East Elevation</p> <p style="text-align: center;">☀ 277°W (T) ● 38°4'19"N, 78°53'6"W ±13ft ▲ 1257ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 11:20:43</p>
<p>Direction: West</p>	
<p>Description: ~ 50° bank angle; lower bank ~45°; upper bank ~50°; grasses, woody, and herbaceous vegetation is well established; vegetation 95% cover; no at-risk trees present; rock toe intact; couch (flat area) present between top of rip rap and upper bank.</p>	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 19	Location: 00 + 450'
Date: 01/19/2023	<p>East Elevation</p> <p>☉ 282°W (T) ● 38°4'19"N, 78°53'6"W ±13ft ▲ 1256ft</p> <p>00+ 450'</p> <p>South River Leaf Off BMA-STM-03 19 Jan 2023, 11:17:50</p>
Direction: West	
<p>Description: ~ 50° bank angle; lower bank ~45°; upper bank ~55°; vegetation is well established, couch present between top of rock toe and upper bank with evidence of scour, erosion control fabric has degraded, evidence of minor rill erosion from surface runoff from Riverside Drive, geocell exposed.</p>	

Photo Number: 20	Location: 00 + 450'
Date: 01/19/2023	<p>East Elevation</p> <p>☉ 286°W (T) ● 38°4'19"N, 78°53'6"W ±13ft ▲ 1265ft</p> <p>00+ 450'</p> <p>South River Leaf Off BMA-STM-03 19 Jan 2023, 11:18:35</p>
Direction: West	
<p>Description: Some evidence of erosion from runoff from Riverside Drive; evidence of sediment deposition in rock toe; erosion control fabric no longer visible.</p>	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 21	Location: 00 + 500'
Date: 01/19/2023	<p>East Elevation</p> <p>☀ 285°W (T) ● 38°4'19"N, 78°53'6"W ±13ft ▲ 1262ft</p>  <p>00+ 500'</p> <p>South River Leaf Off BMA-STM-03 19 Jan 2023, 11:15:11</p>
Direction: West	
<p>Description: ~ 55° bank angle; lower bank; ~45°; upper bank; ~65°; vegetation is well established; no at-risk trees present; rock toe intact; evidence of sediment deposition in rock toe; erosion control fabric no longer visible, geocell minimally exposed.</p>	

Photo Number: 22	Location: 00 + 500'
Date: 01/19/2023	<p>East Elevation</p> <p>☀ 287°W (T) ● 38°4'19"N, 78°53'7"W ±13ft ▲ 1267ft</p>  <p>00+ 500'</p> <p>South River Leaf Off BMA-STM-03 01/19/2023, 11:21:41 EST</p>
Direction: West	
<p>Description: Bank erosion caused by runoff from Riverside Drive. Exposed geocell clearly visible in the rill.</p>	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 23	Location: 00 + 550'
Date: 01/19/2023	<h3>East Elevation</h3> <p>☉ 288°W (T) ● 38°4'20"N, 78°53'6"W ±13ft ▲ 1260ft</p> <p>00+ 550' South River Leaf Off BMA-STM-03 19 Jan 2023, 11:11:00</p>
Direction: West	
<p>Description: ~60° bank angle; lower bank; ~75°; upper bank; ~45°; reseeded grasses are establishing on failed bank section that was repaired, rip rap along upper bank in good condition.</p>	

Photo Number: 24	Location: 00 + 550'
Date: 01/19/2023	<h3>North East Elevation</h3> <p>☉ 225°SW (T) ● 38°4'20"N, 78°53'6"W ±13ft ▲ 1262ft</p> <p>00+ 550' South River Leaf Off BMA-STM-03 19 Jan 2023, 11:11:14</p>
Direction: Southwest	
<p>Description: Upstream view of remediated bank; no trees adjacent to edge of water; rock toe intact; repaired bank intact; evidence of sediment deposition in rock toe.</p>	

South River Photo Log

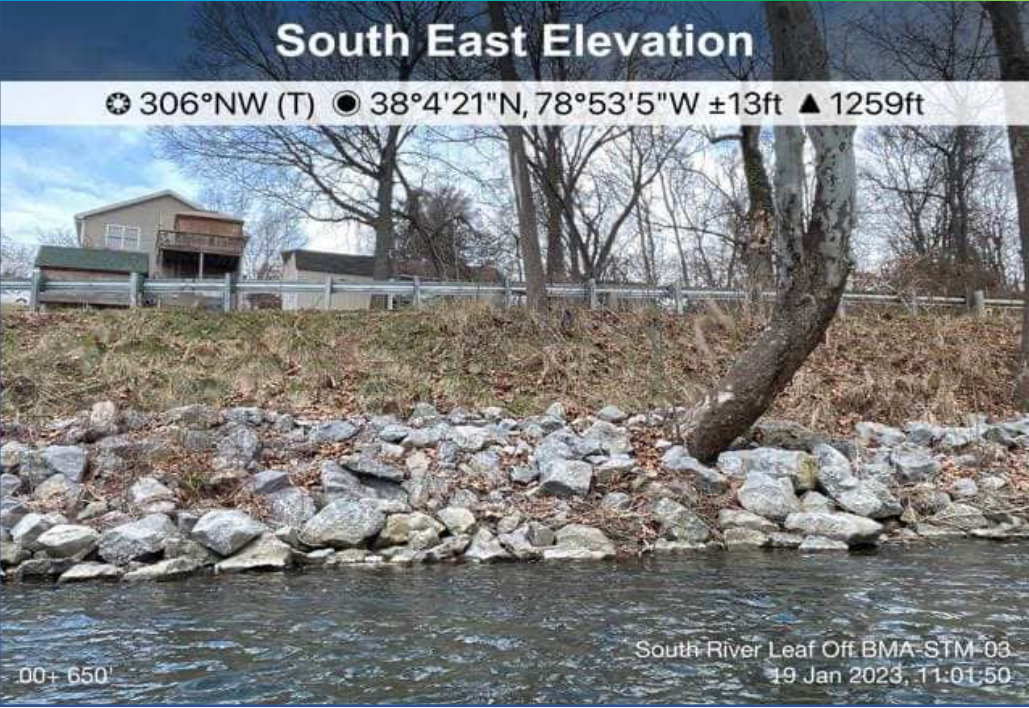
Shiloh Baptist Church BMA
2022 Leaf-off Inspection


Photo Number: 25	Location: 00 + 550'
Date: 01/19/2023	<p style="text-align: center;">South Elevation</p> <p style="text-align: center;">☀ 359°N (T) ● 38°4'20"N, 78°53'6"W ±13ft ▲ 1270ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 11:11:22</p>
Direction: North	
<p>Description: Downstream view of remediated bank; reseeded grasses are well established on failed bank section; rock toe intact; repaired bank intact.</p>	
	00+ 550'

Photo Number: 26	Location: 00 + 600'
Date: 01/19/2023	<p style="text-align: center;">East Elevation</p> <p style="text-align: center;">☀ 283°W (T) ● 38°4'21"N, 78°53'6"W ±13ft ▲ 1270ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 11:03:39</p>
Direction: West	
<p>Description: ~60° bank angle; vegetation is better established on failed bank section: 90% cover; some small patches of exposed soil.</p>	
	00+ 600'

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

<p>Photo Number: 27</p>	<p>Location: 00 + 650'</p>
<p>Date: 01/19/2023</p>	<div style="text-align: center;"> <h3>South East Elevation</h3> <p>☼ 306°NW (T) ● 38°4'21"N, 78°53'5"W ±13ft ▲ 1259ft</p>  <p style="font-size: small;">00+ 650' South River Leaf Off BMA-STM-03 19 Jan 2023, 11:01:50</p> </div>
<p>Direction: Northwest</p>	
<p>Description: End of repaired section; vegetation 80% cover with sparse patches of exposed soil. Rock toe in good condition. Sycamore tree is firmly rooted in rock toe.</p>	

<p>Photo Number: 28</p>	<p>Location: 00 + 650'</p>
<p>Date: 01/19/2023</p>	<div style="text-align: center;"> <h3>South East Elevation</h3> <p>☼ 310°NW (T) ● 38°4'21"N, 78°53'6"W ±114ft ▲ 1284ft</p>  <p style="font-size: small;">00+650' South River Leaf Off BMA-STM-03 01/19/2023, 11:05:34 EST</p> </div>
<p>Direction: Northwest</p>	
<p>Description: Small patches of exposed soil present along upper bank.</p>	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 29	Location: 00 + 700'
Date: 01/19/2023	<p style="text-align: center;">East Elevation</p> <p style="text-align: center;">☀ 286°W (T) ● 38°4'22"N, 78°53'5"W ±13ft ▲ 1241ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 10:55:47</p>
Direction: West	
<p>Description: ~50° bank angle; 95% vegetation cover; grasses well established. Minimal erosion/subsidence around guardrail vertical supports, and foot traffic by the memorial at the top of bank (see photo #41).</p>	
00+ 700'	

Photo Number: 30	Location: 00 + 750'
Date: 01/19/2023	<p style="text-align: center;">East Elevation</p> <p style="text-align: center;">☀ 290°W (T) ● 38°4'22"N, 78°53'5"W ±13ft ▲ 1263ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 10:52:41</p>
Direction: West	
<p>Description: ~45° bank angle; 95% vegetation cover; no at-risk trees present; rock toe intact; sediment deposition in rock toe.</p>	
00+ 750'	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 31	Location: 00 + 800'
Date: 01/19/2023	
Direction: West	
<p>Description: ~45° bank angle; grasses well established; vegetation 80% cover; no trees adjacent to edge of water; rock toe intact; couch on top of bank; evidence of sediment deposition in rock toe.</p>	
<p>South River Leaf Off BMA-STM-03 19 Jan 2023, 10:50:02</p>	

Photo Number: 32	Location: 00 + 850'
Date: 01/19/2023	
Direction: Northwest	
<p>Description: ~45° bank angle; grasses established; vegetation 80% cover with one patch of exposed soil just above rock toe; no at-risk trees present (large tree is firmly rooted); rock toe intact; evidence of sediment deposition in rock toe.</p>	
<p>South River Leaf Off BMA-STM-03 19 Jan 2023, 10:47:32</p>	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 33	Location: 00 + 850'
Date: 01/19/2023	
Direction: West	
Description: Patch of exposed, bare soil above rock toe.	
South River Leaf Off BMA-STM-03 01/19/2023 10:48:42 EST	

Photo Number: 34	Location: 00 + 900'
Date: 01/19/2023	
Direction: West	
Description: ~45° bank angle, grasses well established (85% cover), rock toe intact and trapping sediment.	
South River Leaf Off BMA-STM-03 19 Jan 2023, 10:45:18	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 35	Location: 00 + 900'
Date: 01/19/2023	<p style="text-align: center;">North East Elevation</p> <p style="text-align: center;">☀ 231°SW (T) ● 38°4'23"N, 78°53'4"W ±13ft ▲ 1255ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 10:45:29</p>
Direction: Southwest	
<p>Description: Upstream view of remediated bank. Rock toe in good condition with vegetation mostly well established throughout.</p>	

Photo Number: 36	Location: 00 + 900'
Date: 01/19/2023	<p style="text-align: center;">South Elevation</p> <p style="text-align: center;">☀ 352°N (T) ● 38°4'23"N, 78°53'4"W ±13ft ▲ 1255ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 10:45:36</p>
Direction: North	
<p>Description: Downstream view of the end of the remediated bank. Rock toe intact and vegetation well established throughout.</p>	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 37	Location: 00 + 950'
Date: 01/19/2023	 <p>South East Elevation</p> <p>☀ 297°NW (T) ● 38°4'23"N, 78°53'4"W ±13ft ▲ 1271ft</p> <p>00+950' South River Leaf Off BMA-STM-03 19 Jan 2023, 10:43:11</p>
Direction: Northwest	
<p>Description: ~45° bank angle; vegetation and tall grasses are well established, sediment deposition observed from 2021 inspection has washed out.</p>	

Photo Number: 38	Location: 00 + 975'
Date: 01/19/2023	 <p>South East Elevation</p> <p>☀ 299°NW (T) ● 38°4'24"N, 78°53'3"W ±13ft ▲ 1257ft</p> <p>00+975' South River Leaf Off BMA-STM-03 19 Jan 2023, 10:40:45</p>
Direction: Northwest	
<p>Description: Last section of remediated bank: bank angle ~45°, rock toe intact, vegetation well established, newly installed rip rap present along upper bank in good condition.</p>	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 39	Location: 00 + 975'
Date: 01/19/2023	<p style="text-align: center;">North East Elevation</p> <p style="text-align: center;">☉ 231°SW (T) ● 38°4'24"N, 78°53'3"W ±13ft ▲ 1259ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 10:41:02</p>
Direction: Southwest	
<p>Description: Upstream view of remediated bank with Shiloh Baptist Church in the distance.</p>	
00+975'	

Photo Number: 40	Location: 00 + 975'
Date: 01/19/2023	<p style="text-align: center;">South Elevation</p> <p style="text-align: center;">☉ 345°N (T) ● 38°4'24"N, 78°53'3"W ±9ft ▲ 1273ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-03 19 Jan 2023, 10:41:43</p>
Direction: North	
<p>Description: Downstream view from the end of the remediated bank: moderate scour present just downstream of remediated section with some exposed roots and at-risk trees.</p>	
00+975'	

South River Photo Log

Shiloh Baptist Church BMA
2022 Leaf-off Inspection

Photo Number: 41	Location: 00 + 700' Greenway
Date: 01/19/2023	
Direction: Southwest	
<p>Description: Minor subsidence observed around newly installed guardrail posts.</p>	

Photo Number: 42	Location: 00 + 50' Greenway
Date: 01/19/2023	
Direction: North	
<p>Description: View of recently paved greenway with new wooden railing installed. Tall grass to the right of the railing has been matted down due to foot traffic.</p>	

Attachment D - Table 2
2022 Leaf-off Riparian Vegetation Plots
Shiloh Baptist Church BMA
Former DuPont Waynesboro Site, Area of Concern 4

Vegetative Species		Absolute % Cover ¹
Scientific Name	Common Name	Fall
Tree/Vine Stratum		
<i>Catalpa speciosa</i>	Northern Catalpa	5
<i>Convolvulus arvensis</i>	Field Bindweed	2
<i>Juglans nigra</i>	Black Walnut	0-30
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	0-10
<i>Paulownia tomentosa</i>	Princess Tree	0-30
<i>Platanus occidentalis</i>	American Sycamore	20-60
<i>Toxicodendron radicans</i>	Poison Ivy	0-15
<i>Vitis vulpina</i>	Frost Grape	0-10
Sapling/Shrub Stratum		
<i>Acer negundo</i>	Box Elder	0-2
<i>Acer rubrum</i>	Red Maple	1.5-10
<i>Acer saccharinum</i>	Silver Maple	0-5
<i>Acer saccharum</i>	Sugar Maple	5-10
<i>Betula nigra</i>	River Birch	0-2
<i>Juglans nigra</i>	Black Walnut	5
<i>Lonicera maackii</i>	Amur Honeysuckle	0-2
<i>Lonicera tatarica</i>	Tatarian Honeysuckle	0-10
<i>Morus alba</i>	White Mulberry	5
<i>Morus rubra</i>	Red Mulberry	0-1
<i>Paulownia tomentosa</i>	Princess Tree	0-15
<i>Platanus occidentalis</i>	American Sycamore	0-5
<i>Populus deltoides</i>	Eastern Cottonwood	0-1
Herbaceous Stratum		
<i>Andropogon gerardii</i>	Big Bluestem	0-10
<i>Carex sp.</i>	Sedge sp.	0-2
<i>Chasmanthium latifolium</i>	Indian Woodoats	0-50
<i>Conyza canadensis</i>	Horseweed	2
<i>Daucus carota</i>	Wild Carrot	0-1
<i>Elymus riparius</i>	Riverbank Wildrye	0-30
<i>Eupatoreum purpureum</i>	Joe-Pye Weed	0-10
<i>Eupatorium perfoliatum</i>	Common Boneset	0-10
<i>Fallopia japonica</i>	Japanese Knotweed	0-50
<i>Galium sp.</i>	Bedstraw	5-15
<i>Glechoma hederacea</i>	Ground Ivy	0-1
<i>Helenium autumnale</i>	Sneezeweed	0-2
<i>Impatiens capensis</i>	Jewelweed	20
<i>Lactuca virosa</i>	Bitter Lettuce	2
<i>Melilotus officinalis</i>	Yellow Sweetclover	0-3
<i>Mentha spp.</i>	Mint	0-1
<i>Panicum virgatum</i>	Switchgrass	5-10
<i>Persicaria pensylvanica</i>	Pennsylvania Smartweed	2-15
<i>Phytolacca americana</i>	Pokeberry	5-45

Attachment D - Table 2 (continued)
2022 Leaf-off Riparian Vegetation Plots
Shiloh Baptist Church BMA
Former DuPont Waynesboro Site, Area of Concern 4

<i>Rosa multiflora</i>	Multiflora Rose	0-5
<i>Sambucus nigra</i>	Elderberry	0-15
<i>Securigera varia</i>	Crownvetch	1-20
<i>Senna marilandica</i>	Maryland Senna	0-2
<i>Solidago spp.</i>	Goldenrod	0-2
<i>Sonchus spp.</i>	Sow Thistle	0-5
<i>Symphyotrichum ericoides</i>	White Aster	0-5
<i>Symphyotrichum novae-angliae</i>	New England Aster	0-3
<i>Tridens flavus</i>	Purpletop Grass	20-70
<i>Trifolium repens</i>	White Clover	10
<i>Verbascum blattaria</i>	Moth Mullein	0-1
<i>Verbesina alternifolia</i>	Wingstem	0-5
<i>Vernonia noveboracensis</i>	New York Ironweed	0-2

Notes:

1. Represents the range observed between two riparian vegetative survey plots at the Shiloh BMA.

Attachment D - Waynesboro Off-Site Cap Areas
 Inspection Record Sheet
 Maintenance Plan

Location and property owner name: Shiloh Baptist Church BMA		
Item	Status/Maintenance Needs	Repairs Needed?
Access Roads	NA	NA
Trails	In good condition: greenway was recently paved, railing recently installed near the church and guardrail installed downriver.	1
Drainage Structures	Drainage structures are intact with new corrugated piping recently installed beneath greenway in good condition.	1
Outfall Structures	Outfalls structures are intact.	1
Rip-Rap Protection	Rip-rap is intact.	1
Cap System Vegetative Cover	Most vegetation has fully established, including on the repaired section of bank at 00+550'.	1
Cap System Geosynthetics	Most erosion control fabric has fully deteriorated. Some isolated spots of minimally exposed geocell are present.	1
Cap System Slope Stability	Slope is consistent and stable along remediated sections. The new rip-rap placed at 00+550' and 00+975' is in good condition.	1
Cap System Subsidence	Minor soil subsidence around vertical guardrail posts was observed near 00+700'. Cap is in good condition otherwise.	1
Fencing and Gates	Fencing and gates are intact.	1

Notes:

- 1 - Functioning properly; no repairs needed
- 2 - Repairs needed (describe why, what, and where), but not time critical
- 3 - Time critical repair needed (describe what and where)

Comments:

- AECOM will continue to monitor erosional impact of surface runoff from Riverside Drive, especially now that the greenway has been paved with emphasis on the areas with minor erosion at 00+450' and 00+500'.
- Recommended herbicide treatment of Japanese knotweed in late summer/early fall 2023

Inspected by: Rich Judge and Becca Indeck Date: 01/19/2023

Attachment E
North Park BMA

Attachment E - Table 1
2022 Leaf-off Maintenance Inspection Log
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft)	Station Photo # (Attachment E)	Undercutting			Exposed Roots		At-Risk Trees		Installed Stabilization Features Intact				Local Scour		Overall Change Since Previous Inspection	
		Approximate Bank Angle (Degrees)	Consistent Grade (Y/N) ²	Notes	Exposed Roots (L/M/H) ³	Notes	At-Risk Trees Present (Y/N) ⁴	Notes	Rock Toe/LWD (Y/N) ⁵	Geocell Exposed (Y/N) ⁶	Erosion Control Fabric Exposed (Y/N) ⁷	Notes	Scour Present (Y/N) ⁷	Notes	Y/N	Notes
00 - 25	1, 2, 3	65	Y	Vertical drop at toe of bank	M	Undercut bank with moderately exposed roots	N	No woody vegetation	NA	NA	NA	Upstream of remediation.	Y	Minimal scour present; bank undercut	N	Fence was recently installed at top of bank along greenway
00 + 00	4, 5, 6	60	Y	Start of 1st remediated section	NA	No woody vegetation; vegetation 60% cover	N	None	Y (Rock toe)	N	N	Footpath at edge of remediation; Erosion control fabric and coir log have fully deteriorated; Rock toe intact	N	Minimal sediment deposition	Y	Erosion control fabric has deteriorated; vegetation is more well established
00 + 50	7	60	Y	None	NA	No woody vegetation; vegetation 90% cover	N	Large trees are stable and in good condition	Y (Rock toe)	N	N	Erosion control fabric and coir log have fully deteriorated; Rock toe intact	N	Fine sediment deposition	Y	Erosion control fabric has fully deteriorated; vegetation has established
00 + 100	8, 9, 10	60	Y	None	NA	No woody vegetation; vegetation growing in rock toe; vegetation 90% cover	N	None	Y (Rock toe)	N	N	Erosion control fabric and coir log have fully deteriorated; Rock toe intact	N	Moderate sediment deposition	N	None
00 + 150	11	60	Y	None	NA	No woody vegetation; vegetation 80% cover; exposed soil near foot path, large log present at base of rock toe	N	Tree on upper bank by GW has damaged bark but not "at-risk"	Y (Rock toe)	N	N	Rock toe intact; coir log slumping and mostly deteriorated; animal burrow is present below tree	N	Moderate sediment deposition	N	None
00 + 200	12	50	Y	None	NA	No woody vegetation; vegetation 95% cover	N	Trees present mid bank	Y (Rock toe)	N	N	Rock toe intact, new rip rap installed along the upper bank is in good condition	N	Moderate sediment deposition	Y	New rip rap section installed along upper bank
00 + 250	13, 14, 15	60	Y	None	NA	Live stakes have established; vegetation 90% cover; some patches of bare soil near top of bank	N	None	Y (Rock toe)	N	N	Rock toe intact	N	Minimal sediment deposition	Y	Vegetation is establishing; some isolated patches of bare soil are still present
00 + 300	16	50	Y	None	NA	No woody vegetation; vegetation 95% cover	N	None	Y (Rock toe)	N	N	Rock toe intact	N	Minimal sediment deposition	N	None
00 + 350	17	50	Y	None	NA	One live stake has established; vegetation 90% cover; new footpath and animal burrow present	N	None	Y (Rock toe) geocell	N	N	Rock toe intact	N	Minimal sediment deposition	Y	Animal burrow has been dug through
00 + 400	18, 19, 20	45	Y	None	NA	One live stake is established; vegetation 90% cover; footpath from GW present	N	Trees near rock toe are stable and in good condition	Y (Rock toe)	Y	N	Rock toe intact; coir log mostly deteriorated; geocell is exposed between the two trees; animal burrow is present above rock toe where the geocell is exposed	N	Minimal sediment deposition	Y	Geocell is exposed
00 + 450	21, 22, 23	40	Y	None	NA	One new live stake has established; vegetation 70% cover	N	None	Y (Rock toe)	Y	N	Erosion control fabric has fully degraded; Rock toe intact; Rip rap recently installed along top of bank in good condition	N	Minimal sediment deposition	Y	Erosion control fabric no longer exposed; geocell is minimally exposed; rip rap recently installed along upper bank
00 + 500	24, 25	40	Y	None	NA	No woody vegetation; vegetation 70% cover	N	None	Y (Rock toe)	N	N	Erosion control fabric has fully degraded; Rock toe intact	N	Minimal sediment deposition	Y	Erosion control fabric no longer exposed
00 + 550	26, 27, 28	40	Y	None	NA	No woody vegetation; vegetation 70% cover; new footpath present	N	None	Y (Rock toe)	Y	Y	A small patch of erosion control fabric is exposed above the rock toe but is deteriorating; Rock toe intact; coir log is partially deteriorated	N	Minimal sediment deposition	Y	Exposed soil present above rock toe; erosion control fabric is almost fully deteriorated
00 + 600	29, 30	40	Y	None	NA	No woody vegetation; some exposed soil and minimal vegetation below coir log and above rock toe; vegetation 70% cover	N	One tree near greenway in good condition	Y (Rock toe)	Y	N	Erosion control fabric is almost fully deteriorated; Rock toe intact; coir log is partially deteriorated	N	Minimal sediment deposition	Y	Geocell minimally exposed; erosion control fabric no longer exposed
00 + 650	31, 32, 33	40	Y	None	NA	No woody vegetation; some exposed soil and minimal vegetation below coir log and above rock toe; vegetation 70% cover	N	One tree above rock toe in good condition	Y (Rock toe)	Y	N	Geocell is minimally exposed; Rock toe intact; coir log deteriorated but highly visible - minor erosion between coir log and top of rock toe	N	Minimal sediment deposition	Y	Geocell minimally exposed; erosion control fabric no longer exposed

Attachment E - Table 1
2022 Leaf-off Maintenance Inspection Log
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft) ¹	Station Photo # (Attachment E)	Undercutting			Exposed Roots		At-Risk Trees		Installed Stabilization Features Intact				Local Scour		Overall Change Since Previous Inspection	
		Approximate Bank Angle (Degrees)	Consistent Grade (Y/N) ²	Notes	Exposed Roots (L/M/H) ³	Notes	At-Risk Trees Present (Y/N) ⁴	Notes	Rock Toe/LWD (Y/N) ⁵	Geocell Exposed (Y/N) ⁶	Erosion Control Fabric Exposed (Y/N) ⁷	Notes	Scour Present (Y/N) ⁸	Notes	Y/N	Notes
00 + 700	34, 35, 36	40	Y	None	NA	Saplings have established, vegetation 80% cover	N	2 trees near greenway have damaged bark but are stable	Y (Rock toe)	Y	N	Geocell exposed just above rock toe with exposed soil; erosion control fabric mostly deteriorated; Rock toe intact; coir log partially deteriorated - moderate erosion between coir log and top of rock toe.	N	Minimal sediment deposition	Y	Geocell is minimally exposed above rock toe; erosion control fabric has fully degraded
00 + 750	37	35	Y	None	NA	Saplings have established; vegetation 80% cover; minimal vegetation between coir log and rock toe	N	None	Y (Rock toe)	N	N	Erosion control fabric fully deteriorated; Rock toe intact; coir log deteriorated but highly visible - minimal erosion between coir log and top of rock toe	N	Minimal sediment deposition	Y	Erosion control fabric has fully deteriorated
00 + 800	38	30	Y	New footpath present	NA	Vegetation 80% cover; some exposed soil between coir log and rock toe	N	None	Y (Rock toe)	N	N	Erosion control fabric fully deteriorated; Rock toe intact; coir log deteriorated but highly visible - minimal erosion between coir log and top of rock toe	N	Minimal sediment deposition	Y	New footpath present; erosion control fabric has fully deteriorated
00 + 850	39	20	Y	None	NA	Vegetation 80% cover; grasses and herbs	N	Group of 4 trees near top of bank in good condition	Y (Rock toe)	N	N	Rock toe intact; exposed bare soil present above rock toe	N	Minimal sediment deposition	N	None
00 + 900	40	20	Y	None	NA	Grasses and herbaceous vegetation is well established; Vegetation 90% cover	N	Tree may be starting to die	Y (Rock toe)	N	N	Rock toe intact; coir log deteriorated	N	Minimal sediment deposition	N	None
00 + 950	41	30	Y	None	NA	Saplings and herbaceous vegetation is well established; vegetation 95% cover	N	None	Y (Rock toe)	N	N	Rock toe intact; coir log deteriorated but plastic mesh still present and embedded above rock toe	N	Minimal sediment deposition	N	None
00 + 1000	42	30	Y	None	NA	Few small saplings have established along with herbaceous plants; vegetation 95% cover	N	None	Y (Rock toe)	N	N	Rock toe intact	N	Minimal sediment deposition	N	None
00 + 1050	43, 44, 45	35	Y	End of first remediation area	NA	Vegetation 90% cover	N	None	Y (Rock toe)	N	N	Rock toe intact; coir log deteriorated; plastic mesh netting is minimally exposed in a few areas	N	Minimal sediment deposition	N	None
00 + 1100	46	40	Y	Start of non-remediated section	M	Vegetation 70% cover, slight undercutting, footpath present down from greenway	N	None	NA	NA	NA	None	N	Minimal scour at end of remediation	Y	New footpath present; slight bank undercut
00 + 1150	47, 48, 49	40	Y	Moderate undercutting at toe of bank beneath tree roots	M	Large fallen tree to upstream side has created a large woody jam, shrubs along mid and upper bank; vegetation 80% cover	N	1 tree mid-bank in good condition	NA	NA	NA	None	Y	Moderate scour present	N	Large woody jam and increased debris has built up
00 + 1200	50	40	N	Upper bank: 60° Lower bank: 50° Minimal undercutting at toe of bank	L	Minor exposed roots at bank toe; shrubs on upper bank; vegetation 50% cover	N	3 trees mid-bank in fair condition	NA	NA	NA	None	Y	Minimal scour behind log at bank toe	N	None
00 + 1250	51, 52	55	N	Lower bank ~70° Upper bank ~45°	M	Footpath from greenway is present; no vegetation at toe of bank; woody vegetation on mid and upper bank; vegetation 40% cover	N	2 trees along mid-bank are dying	NA	NA	NA	Wooden steps present from top of bank to mid bank then a mostly vertical drop from scour and erosion at the base of steps	Y	Scour present at base of wooden steps	N	Scour present at base of wooden steps
00 + 1300	53	45	Y	None	H	Woody vegetation on mid and upper bank; exposed roots on one tree at toe; vegetation 40% cover	Y	1 tree at toe (Sycamore) is leaning over, 1 tree at mid-bank appears to be dead	NA	NA	NA	Moderate undercutting mostly at tree at toe of bank	Y	Some scour at exposed roots at toe of bank	N	None
00 + 1350	54	45	Y	Slight undercutting at bank toe	M	Woody vegetation at water's edge, increased soil erosion between exposed roots; vegetation 40% cover	N	1 tree on lower bank is dead and 3 at mid-bank in good condition	NA	NA	NA	None	N	No scour	N	None
00 + 1400	55	45	Y	Slight undercutting at base of bank toe	M	Moderately exposed roots throughout bank; bank covered with woody vegetation; sparse grasses at toe; vegetation 50% cover	N	1 tree mid bank in good condition	NA	NA	NA	None	N	No scour	N	None

Attachment E - Table 1
2022 Leaf-off Maintenance Inspection Log
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft) ¹	Station Photo # (Attachment E)	Undercutting			Exposed Roots		At-Risk Trees		Installed Stabilization Features Intact				Local Scour		Overall Change Since Previous Inspection	
		Approximate Bank Angle (Degrees)	Consistent Grade (Y/N) ²	Notes	Exposed Roots (L/M/H) ³	Notes	At-Risk Trees Present (Y/N) ⁴	Notes	Rock Toe/LWD (Y/N) ⁵	Geocell Exposed (Y/N) ⁶	Erosion Control Fabric Exposed (Y/N) ⁷	Notes	Scour Present (Y/N) ⁸	Notes	Y/N	Notes
00 + 1450	56	40	Y	Slight undercutting at bank toe below the tree root	M	Footpath present from greenway to water's edge; exposed roots throughout bank with slight undercutting; bank covered with woody vegetation; sparse grasses at toe; vegetation 40% cover	N	1 tree mid-bank in good condition	NA	NA	NA	None	Y	Minimal scour	N	None
00 + 1500	57	40	Y	End of non-remediated section; footpath present, minimal undercut tree roots at bank toe	M	No vegetation mid bank to toe; shrubs along mid-bank are well established; vegetation 70% cover	N	1 tree at toe and 1 on upper bank in good condition	NA	NA	NA	Footpath; minimal undercutting at tree roots at toe of bank	Y	Minimal scour at exposed tree roots at toe	N	None
00 + 1550	58, 59, 60	35	N	Start of 2nd section of bank remediation Lower bank ~50° Upper bank ~75°	L	Vegetation 80% cover; some saplings have established, big tree root is slightly undercut	N	None	Y (Rock toe)	N	N	Rock toe intact, significant undercutting, with large exposed root, and bare ground just upstream of remediated section.	Y	Some scour and exposed soil above rock toe	N	None
00 + 1600	61	35	Y	None	NA	Vegetation 95% cover	N	None	Y (Rock toe)	N	N	Rock toe mostly intact but some small cobbles have tumbled into the river	N	Minimal sediment deposition	N	None
00 + 1650	62, 63, 64	30	Y	None	NA	Vegetation 95% cover	N	None	Y (Rock toe)	N	Y	Erosion control fabric 10% exposed; kayak launch and steps intact but slightly undercut at the bottom; path not level, gravel dust eroded away revealing larger blue gravel, some cobbles have tumbled into water	N	Minimal sediment deposition	Y	Geocell is minimally exposed
00 + 1700	65, 66, 67	30	Y	None	NA	Vegetation 95% cover	N	Group of 4 trees above gravel walking path in good condition	Y (Rock toe)	Y	Y	Erosion control fabric mat 10% exposed; rock toe intact; walking path above rock toe; path slanted, gravel dust eroded away revealing larger blue gravel, small boulders tumbled into water	N	Minimal sediment deposition	N	None
00 + 1750	68	30	Y	None	NA	Vegetation 95% cover	N	None	Y (Rock toe)	N	N	Rock toe intact; walking path above rock toe is slightly slanted, gravel dust eroded away revealing larger blue gravel, small boulders tumbled into water; geocell slightly exposed above large tree	N	Minimal sediment deposition	N	None
00 + 1800	69, 70, 71	30	Y	None	NA	Vegetation 95% cover	N	None	Y (Rock toe)	N	N	Rock toe intact; walking path above rock toe; path slanted, gravel dust eroded away revealing larger blue gravel, small boulders tumbled into water	N	Minimal sediment deposition	N	None
00 + 1850	72	30	Y	None	NA	Vegetation 95% cover	N	None	Y (Rock toe)	N	N	Rock toe intact; walking path above rock toe in good condition, gravel dust visible, small boulders tumbled into water but gravel around the big tree is still in place	N	Minimal scour above the path	N	None
00 + 1900	73, 74, 75, 76	30	Y	None	NA	Vegetation 95% cover	N	None	Y (Rock toe)	N	Y	Constructed wooden staircase intact; walking path above rock toe; gravel dust eroded away revealing larger blue gravel, small boulders tumbled into water, erosion control fabric is slightly exposed in some areas above the rock toe; slight erosion just starting to undercut the last stair	Y	None	Y	Erosion control fabric exposed in isolated spots along the path and above rock toe, slight erosion and undercutting around bottom of stairs; some small boulders around the steps have tumbled into the water
00 + 1950	77	40	Y	None	NA	Some exposed soil along mid-bank; some saplings have established, vegetation 95% cover	N	None	Y (Rock toe)	N	N	Concrete outfall pipe above rock toe still intact; rock toe intact	N	Minimal sediment deposition	N	None
00 + 2000	78, 79	45	Y	None	NA	Vegetation 95% cover	N	None	Y (Rock toe)	N	N	Rock toe intact	N	Minimal sediment deposition	Y	Animal burrow dug through geocell
00 + 2050	80	45	Y	None	NA	Vegetation 95% cover	N	None	Y (Rock toe)	N	N	Rock toe intact	N	Minimal scour just above rock toe	Y	New footpath present above rock toe
00 + 2100	81	45	Y	None	NA	Vegetation 95% cover	N	None	Y (Rock toe)	N	N	Erosion control fabric is no longer exposed	N	Minimal sediment deposition	Y	New footpath present above rock toe
00 + 2150	82	45	Y	None	NA	Two small saplings have established, vegetation 95% cover	N	None	Y (Rock toe)	N	N	Rock toe intact	N	Minimal sediment deposition	N	None

Attachment E - Table 1
2022 Leaf-off Maintenance Inspection Log
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft) ¹	Station Photo # (Attachment E)	Undercutting			Exposed Roots		At-Risk Trees		Installed Stabilization Features Intact				Local Scour		Overall Change Since Previous Inspection	
		Approximate Bank Angle (Degrees)	Consistent Grade (Y/N) ²	Notes	Exposed Roots (L/M/H) ³	Notes	At-Risk Trees Present (Y/N) ⁴	Notes	Rock Toe/LWD (Y/N) ⁵	Geocell Exposed (Y/N) ⁶	Erosion Control Fabric Exposed (Y/N) ⁶	Notes	Scour Present (Y/N) ⁷	Notes	Y/N	Notes
00 + 2200	83, 84, 85	45	Y	None	NA	Grasses have established, one small tree has established above rock toe; vegetation 95% cover	N	1 tree mid-bank in good condition	Y (Rock toe)	N	N	Rock toe intact	N	Minimal sediment deposition	N	None
00 + 2250	86	45	Y	End of 2nd remediated section	NA	Vegetation 95% cover; mostly grasses	N	1 tree mid-bank in good condition and growing	Y (Rock toe)	N	N	Footpath at end of remediation; rock toe intact; higher rock toe in this section	N	Minimal sediment deposition	N	None
00 + 2300	87	65	N	Start of non-remediated section Lower bank -70° Upper bank -30°	H	Woody vegetation throughout bank; medium exposed roots mid to lower bank; sparse vegetation	N	None	NA	NA	NA	None	Y	Some scour present at bank toe	N	None
00 + 2350	88, 89	65	N	Lower bank -50° Upper bank -20° Significant bank undercutting around the large tree	H	Woody vegetation mid to upper bank; highly exposed roots; no vegetation established adjacent to water's edge	Y	Several trees on upper bank in good condition, one large overhanging tree is at-risk	NA	NA	NA	None	Y	Scour mid to lower bank by exposed roots	Y	One large overhanging tree is "at-risk" but was not previously noted
00 + 2380	90, 91, 92	65	N	Lower bank -50° Upper bank -20°	H	Sparse vegetative cover; multiple undercut trees present with highly exposed roots	Y	Several trees on upper bank in good condition but roots are severely exposed	NA	NA	NA	None	Y	Moderate bank scour around tree roots	Y	Increased undercutting and scour
North Park	93, 94	NA	NA	Flat	NA	Large trees and grass present across greenspace in North Park in good condition	N	None	NA	NA	NA	Greenway is now paved and in good condition; there is no exposed erosion control fabric and no vehicle ruts in the grass	N	NA	Y	Greenway trail has been paved, no erosion control fabric, no vehicle ruts present

Notes:

- Inspection station is described as the distance (feet) upstream (-) or downstream (+) from the start of the BMA (00); for example, Station 00 + 50' is 50 feet downstream from the start of the BMA
- A significant deviation from continuous bank slope or break in grade may be used as an indicator of undercutting; consistent bank grade is evaluated as Y (yes) or N (no)
- The extent to which roots are exposed may provide a relative measure of the magnitude of apparent erosion; extent of exposed roots is evaluated as L (low), M (moderate), H (high), or NA (not applicable- no exposed roots)
- At-risk trees (i.e., trees that lean towards the river) typically have a greater potential to fall into the river and dislodge the bank soil and erosion-control products immediately around and above the tree; presence of at-risk trees is evaluated as Y (yes) or N (no)
- Installed rock toe and large woody debris (LWD) features are monitored to ensure that they are anchored and determine whether material has sloughed, or been eroded, or moved downstream; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
- Installed geocell and erosion control fabric are monitored to ensure that they are intact and determine whether material is exposed or visible; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor). As of Spring 2022 almost all of the fabric and geocell is either degraded or fully covered by vegetation, except the most recently installed features
- The presence of local scour is assessed at the toe and center of the bank, per inspection station, as well as approximately 25 feet upstream and downstream of the start and end of the BMA; the presence of scour is evaluated as Y (yes) or N (no)
- Grey shaded cells are portions of the bank that were not remediated

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 01	Location: 00 - 25'
Date: 01/18/2023	
Direction: North	
<p>Description: Upstream of remediation; ~65° bank angle; vertical drop at toe; undercut bank with moderately exposed roots; minimal scour present, fence recently installed along top of bank next to greenway.</p>	
South River Leaf Off BMA-STM-05 18 Jan 2023, 12:40:47	

Photo Number: 02	Location: 00 - 25'
Date: 01/18/2023	
Direction: Northeast	
<p>Description: Downstream view of start of remediated section; rock toe intact.</p>	
South River Leaf Off BMA-STM-05 18 Jan 2023, 12:41:11	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 03	Location: 00 - 25'
Date: 01/18/2023	
Direction: West	
<p>Description: Upstream view of non-remediated bank; bank slightly undercut with exposed roots; minimal scour present, newly installed fence along greenway.</p>	

Photo Number: 04	Location: 00 + 00'
Date: 01/18/2023	
Direction: Northwest	
<p>Description: Start of 1st remediated section; ~60° bank angle; 60% vegetation cover; no at-risk trees present; footpath at edge of remediation; erosion control fabric and coir log have fully degraded.</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 05	Location: 00 + 00'
Date: 01/18/2023	
Direction: Northeast	
<p>Description: Downstream view of 1st remediated section; rock toe intact; coir logs deteriorated; minimal sediment deposition; vegetation establishing.</p>	

Photo Number: 06	Location: 00 + 00'
Date: 01/18/2023	
Direction: North	
<p>Description: Rock toe intact; minimal sediment deposition and some drift lines present along cobbles.</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 07	Location: 00 + 50'
Date: 01/18/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☼ 330°NW (T) ● 38°4'31"N, 78°52'57"W ±13ft ▲ 1256ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 12:35:48</p>
Direction: Northwest	
<p>Description: ~60° bank angle; 90% vegetation cover (increased); no at-risk trees present; erosion control fabric and coir log have deteriorated as designed; rock toe is intact and trapping sediment and debris.</p>	

Photo Number: 08	Location: 00 + 100'
Date: 01/18/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☼ 324°NW (T) ● 38°4'32"N, 78°52'57"W ±13ft ▲ 1236ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 12:31:58</p>
Direction: Northwest	
<p>Description: ~60° bank angle; vegetation is well established (90% cover); large trees are in stable condition; erosion control fabric and coir log are fully deteriorated.</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 09	Location: 00 + 100'
Date: 01/18/2023	<p style="text-align: center;">East Elevation</p> <p style="text-align: center;">☀ 269°W (T) ● 38°4'32"N, 78°52'57"W ±13ft ▲ 1237ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 12:32:09</p>
Direction: West	
<p>Description: Upstream view of remediated area; rock toe intact with fine sediment deposition and organic debris filling the interstices.</p>	
00+100'	00+100'

Photo Number: 10	Location: 00 + 100'
Date: 01/18/2023	<p style="text-align: center;">South Elevation</p> <p style="text-align: center;">☀ 16°N (T) ● 38°4'32"N, 78°52'57"W ±13ft ▲ 1258ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 12:32:17</p>
Direction: North	
<p>Description: Downstream view of remediated area: large log deposited along rock toe. Rock toe is intact and upper bank in good condition.</p>	
00+100'	00+100'

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 11	Location: 00 + 150'
Date: 01/18/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☀ 324°NW (T) ● 38°4'32"N, 78°52'56"W ±13ft ▲ 1228ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 12:25:48</p>
Direction: Northwest	
<p>Description: ~60° bank angle; vegetation is well established (80% cover); tree on upper bank near greenway has damaged bark but is not yet "at-risk"; rock toe intact; coir log slumping and is mostly deteriorated; animal burrow present below one of the large trees.</p>	

Photo Number: 12	Location: 00 + 200'
Date: 01/18/2023	<p style="text-align: center;">W 270 NW 300 330 30 NE 60 E 90</p> <p style="text-align: center;">☀ 1°N (T) ● 38°4'33"N, 78°52'56"W ±59ft ▲ 1268ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 01/18/2023 12:27:45 EST</p>
Direction: North	
<p>Description: ~50° bank angle; no woody vegetation, but herbaceous vegetation is well established (95% cover); new rip rap installed along upper bank is in good condition.</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 13	Location: 00 + 250'
Date: 01/18/2023	
Direction: Northwest	
<p>Description: ~60° bank angle; live stakes and plantings are established; some isolated patches of bare soil present near top of bank, rock toe intact and trapping sediment and organic debris.</p>	
<p>South River Leaf Off BMA-STM-05 18 Jan 2023, 12:20:04</p>	

Photo Number: 14	Location: 00 + 250'
Date: 01/18/2023	
Direction: Northwest	
<p>Description: Increased herbaceous vegetative cover; some footpaths present.</p>	
<p>South River Leaf Off BMA-STM-05 01/18/2023 12:26:30 EST</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 15	Location: 00 + 250'
Date: 01/18/2023	
Direction: Southeast	
Description: Fine sediment and organic matter deposition present along rock toe.	

Photo Number: 16	Location: 00 + 300'
Date: 01/18/2023	
Direction: Northwest	
Description: ~50° bank angle; 95% vegetation cover; no at-risk trees present; rock toe in good condition.	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 17	Location: 00 + 350'
Date: 01/18/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☉ 308°NW (T) ● 38°4'33"N, 78°52'55"W ±13ft ▲ 1224ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 12:11:08</p>
Direction: Northwest	
<p>Description: ~50° bank angle; one live stake has established; 90% vegetation cover; no at-risk trees present; rock toe intact; new footpaths and animal burrow present (dug through geocell).</p>	
00+350'	

Photo Number: 18	Location: 00 + 400'
Date: 01/18/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☉ 310°NW (T) ● 38°4'34"N, 78°52'54"W ±13ft ▲ 1251ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 12:06:22</p>
Direction: Northwest	
<p>Description: ~45° bank angle; 90% vegetation cover; trees near rock toe in good condition; rock toe intact and trapping sediment and debris; coir log deteriorated; geocell is visible between the two trees on left with animal burrow present.</p>	
00+400'	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 19	Location: 00 + 400'
Date: 01/18/2023	
Direction: North	
Description: Patch of exposed soil present above rock toe due to foot traffic.	

Photo Number: 20	Location: 00 + 400'
Date: 01/18/2023	
Direction: Northwest	
Description: Animal burrow and exposed geocell.	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 21	Location: 00 + 450'
Date: 01/18/2023	
Direction: Northwest	
Description: ~40° bank angle; one new live stake has established; 70% vegetation cover with patches of bare soil, animal burrows, and exposed geocell; no at-risk trees present; rock toe is intact and erosion control fabric has fully deteriorated; new rip rap long upper bank is in good condition.	

Photo Number: 22	Location: 00 + 450'
Date: 01/18/2023	
Direction: West	
Description: Some exposed soil and an animal burrow present.	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 23	Location: 00 + 450'
Date: 01/18/2023	
Direction: West	
Description: Geocell is minimally exposed around the base of this tree but still in stable condition.	

Photo Number: 24	Location: 00 + 500'
Date: 01/18/2023	
Direction: Northwest	
Description: ~40° bank angle; 70% vegetation cover; no at-risk trees present; erosion control fabric has fully degraded; rock toe in good condition.	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 25		Location: 00 + 500'	
Date: 01/18/2023			
Direction: North			
<p>Description: Footpath present along upper bank down from greenway. Dormant grasses are matted down.</p>			
00+500'		South River Leaf Off BMA-STM-05 01/18/2023 12:01:08 EST	

Photo Number: 26		Location: 00 + 550'	
Date: 01/18/2023			
Direction: Northwest			
<p>Description: ~40° bank angle; 70% herbaceous vegetation cover; no at-risk trees present; erosion control fabric is mostly deteriorated; coir log is partially deteriorated; rock toe intact.</p>			
00+550'		South River Leaf Off BMA-STM-05 18 Jan 2023 11:56:14	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 27	Location: 00 + 550'
Date: 01/18/2023	
Direction: Northwest	
Description: Patch of bare soil due to foot traffic down from greenway.	

Photo Number: 28	Location: 00 + 550'
Date: 01/18/2023	
Direction: Northwest	
Description: Geocell is minimally exposed but in stable condition.	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 29	Location: 00 + 600'
Date: 01/18/2023	
Direction: Northwest	
<p>Description: ~40° bank angle; 70% vegetation cover; tree present near greenway in good condition; erosion control fabric has deteriorated; some patches of bare soil present between coir log and top of rock toe.</p>	
South River Leaf Off BMA-STM-05 18 Jan 2023, 11:53:04	

Photo Number: 30	Location: 00 + 600'
Date: 01/18/2023	
Direction: Northwest	
<p>Description: Bare soil and minimally exposed geocell.</p>	
South River Leaf Off BMA-STM-05 01/18/2023, 11:55:26 EST	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection


Photo Number: 31	Location: 00 + 650'
Date: 01/18/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☼ 317°NW (T) ● 38°4'35"N, 78°52'52"W ±13ft ▲ 1256ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 11:47:58</p>
Direction: Northwest	
<p>Description: ~40° bank angle; some bare soil present between top of rock toe and coir log; 70% vegetation cover, geocell is minimally exposed; erosion control fabric has deteriorated.</p>	
00+650'	

Photo Number: 32	Location: 00 + 650'
Date: 01/18/2023	<p style="text-align: center;">South West Elevation</p> <p style="text-align: center;">☼ 28°NE (T) ● 38°4'35"N, 78°52'52"W ±13ft ▲ 1260ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 11:48:11</p>
Direction: Northeast	
<p>Description: Downstream view of remediated bank; rock toe intact and trapping debris and sediment; vegetation along upper bank is well established.</p>	
00+650'	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 33	Location: 00 + 650'
Date: 01/18/2023	<h3 style="color: white; background-color: #003366; padding: 5px;">East Elevation</h3> <div style="background-color: #cccccc; padding: 5px; font-weight: bold;"> ☀ 258°W (T) ● 38°4'35"N, 78°52'52"W ±13ft ▲ 1256ft </div> 
Direction: West	
<p>Description: Upstream view of remediated bank; rock toe in good condition; vegetation is well established along upper bank.</p>	
00+650'	South River Leaf Off BMA-STM-05 18 Jan 2023, 11:48:17

Photo Number: 34	Location: 00 + 700'
Date: 01/18/2023	<h3 style="color: white; background-color: #003366; padding: 5px;">South East Elevation</h3> <div style="background-color: #cccccc; padding: 5px; font-weight: bold;"> ☀ 320°NW (T) ● 38°4'36"N, 78°52'52"W ±13ft ▲ 1247ft </div> 
Direction: Northwest	
<p>Description: ~40° bank angle; vegetation 80% cover; two trees near the greenway have damaged bark but are stable. Geocell is exposed just above rock toe with some exposed/eroded soil; erosion control fabric has mostly deteriorated.</p>	
00+700'	South River Leaf Off BMA-STM-05 18 Jan 2023, 11:44:47

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 35	Location: 00 + 700'
Date: 01/18/2023	
Direction: Northeast	
Description: Partially degraded coir log and erosion above rock toe.	
South River Leaf Off BMA-STM-05 01/18/2023, 11:47:47 EST	

Photo Number: 36	Location: 00 + 700'
Date: 01/18/2023	
Direction: Northwest	
Description: Exposed soil and geocell present along upper bank.	
South River Leaf Off BMA-STM-05 01/18/2023, 11:46:56 EST	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 37	Location: 00 + 750'
Date: 01/18/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☀ 319°NW (T) ● 38°4'36"N, 78°52'51"W ±13ft ▲ 1251ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 11:42:46</p>
Direction: Northwest	
<p>Description: ~35° bank angle; saplings and herbaceous vegetation has established (80% cover); some bare soil between top of rock toe and coir log; erosion control fabric has fully deteriorated.</p>	

Photo Number: 38	Location: 00 + 800'
Date: 01/18/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☀ 326°NW (T) ● 38°4'36"N, 78°52'51"W ±9ft ▲ 1251ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 11:31:49</p>
Direction: Northwest	
<p>Description: ~30° bank angle; some exposed soil between top of rock toe and coir log; footpath present from greenway to rock toe; erosion control fabric has fully deteriorated; rock toe intact with minimal sediment deposition.</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 39	Location: 00 + 850'
Date: 01/18/2023	
Direction: Northwest	
<p>Description: ~20° bank angle; live stakes and plantings not established; 80% vegetation cover; group of 4 trees near top of bank in good condition; rock toe intact; some bare soil above rock toe.</p>	
<p>00+850' South River Leaf Off BMA-STM-05 18 Jan 2023, 11:29:05</p>	

Photo Number: 40	Location: 00 + 900'
Date: 01/18/2023	
Direction: North	
<p>Description: ~20° bank angle; grasses and herbaceous vegetation well established (90% cover); rock toe in good condition.</p>	
<p>00+900' South River Leaf Off BMA-STM-05 18 Jan 2023, 11:26:21</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection



Photo Number: 41	Location: 00 + 950'
Date: 01/18/2023	<h3>South East Elevation</h3> <p>☼ 333°NW (T) ● 38°4'37"N, 78°52'49"W ±13ft ▲ 1275ft</p>  <p style="font-size: small; text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 11:23:49</p>
Direction: Northwest	
<p>Description: ~30° bank angle; vegetation is well established (95% cover); no at-risk trees present; rock toe intact.</p>	
00+950'	

Photo Number: 42	Location: 00 + 1000'
Date: 01/18/2023	<h3>South East Elevation</h3> <p>☼ 336°NW (T) ● 38°4'38"N, 78°52'48"W ±13ft ▲ 1266ft</p>  <p style="font-size: small; text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 11:21:44</p>
Direction: Northwest	
<p>Description: ~30° bank angle; a few saplings have established; 95% vegetation cover; no at-risk trees present; rock toe intact.</p>	
00+1000'	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection



Photo Number: 43	Location: 00 + 1050'
Date: 01/18/2023	<h3>South East Elevation</h3> <p>☼ 331°NW (T) ● 38°4'38"N, 78°52'48"W ±13ft ▲ 1260ft</p>  <p style="text-align: right; font-size: small;">South River Leaf Off BMA-STM-05 18 Jan 2023, 11:18:13</p>
Direction: Northwest	
<p>Description: ~35° bank angle; end of 1st remediated section; 90% vegetation cover; plastic mesh netting from coir logs is exposed in a few areas.</p>	
00+1050'	

Photo Number: 44	Location: 00 + 1050'
Date: 01/18/2023	<h3>East Elevation</h3> <p>☼ 261°W (T) ● 38°4'38"N, 78°52'48"W ±13ft ▲ 1266ft</p>  <p style="text-align: right; font-size: small;">South River Leaf Off BMA-STM-05 18 Jan 2023, 11:18:28</p>
Direction: West	
<p>Description: Upstream view of remediated bank; live stakes and plantings not established; no at-risk trees present; vegetation establishing.</p>	
00+1050'	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 45	Location: 00 + 1050'
Date: 01/18/2023	
Direction: Northeast	
<p>Description: Downstream view from end of first remediated bank with a large woody jam to the right of picture.</p>	
<p>South West Elevation ☀ 30°NE (T) ● 38°4'38"N, 78°52'48"W ±13ft ▲ 1265ft</p>	
<p>00+1050' South River Leaf Off BMA-STM-05 18 Jan 2023, 11:18:36</p>	

Photo Number: 46	Location: 00 + 1100'
Date: 01/18/2023	
Direction: North	
<p>Description: Start of non-remediated section; ~40° bank angle; roots are moderately exposed; no at-risk trees present; slight undercutting at toe of bank; new footpath present.</p>	
<p>South Elevation ☀ 338°N (T) ● 38°4'38"N, 78°52'48"W ±13ft ▲ 1257ft</p>	
<p>00+1100' South River Leaf Off BMA-STM-05 18 Jan 2023, 11:16:23</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 47	Location: 00 + 1150'
Date: 01/18/2023	<p style="text-align: center;">South Elevation</p> <p style="text-align: center;">☀ 341°N (T) ● 38°4'38"N, 78°52'47"W ±13ft ▲ 1273ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 11:12:46</p>
Direction: North	
<p>Description: Non-remediated section; ~40° bank angle, moderate undercutting at toe of bank; large fallen tree present has created a large woody jam with increased build-up since the last visit.</p>	
00+1150'	00+1150'

Photo Number: 48	Location: 00 + 1150'
Date: 01/18/2023	<p style="text-align: center;">South East Elevation</p> <p style="text-align: center;">☀ 312°NW (T) ● 38°4'38"N, 78°52'47"W ±13ft ▲ 1261ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 11:13:07</p>
Direction: Northwest	
<p>Description: Non-remediated section; fallen tree providing LWD along bank.</p>	
00+1150'	00+1150'

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 49	Location: 00 + 1150'
Date: 01/18/2023	
Direction: Northeast	
<p>Description: Downstream view of non-remediated section with the large woody debris obstruction.</p>	
South River Leaf Off BMA-STM-05 18 Jan 2023, 11:14:47	

Photo Number: 50	Location: 00 + 1200'
Date: 01/18/2023	
Direction: Northwest	
<p>Description: Non-remediated section; ~40° bank angle; minimal undercutting at toe; shrubs on upper bank; 50% vegetation cover; 3 trees mid bank in fair condition; minimal undercutting at toe of bank; LWD present; no scour.</p>	
South River Leaf Off BMA-STM-05 18 Jan 2023, 11:10:15	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 51		Location: 00 + 1250'	
Date: 01/18/2023			
Direction: North			
<p>Description: Non-remediated section; no vegetation at toe; woody vegetation on mid and upper bank; 40% vegetation cover; trees mid bank in good condition; footpath present with scour at the bottom.</p>			
00+1250'		South River Leaf Off BMA-STM-05 18 Jan 2023, 11:05:25	

Photo Number: 52		Location: 00 + 1250'	
Date: 01/18/2023			
Direction: North			
<p>Description: View of the footpath with scour at the bank toe.</p>			
00+1250'		South River Leaf Off BMA-STM-05 18 Jan 2023, 11:07:50	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 53	Location: 00 + 1300'
Date: 01/18/2023	<p style="text-align: center;">South Elevation</p> <p style="text-align: center;">☀ 2°N (T) ● 38°4'38"N, 78°52'46"W ±13ft ▲ 1252ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 11:03:04</p>
Direction: North	
<p>Description: Non-remediated section; ~ 45° bank angle; roots are exposed along toe of bank; tree mid bank appears to be dead; Sycamore near the toe is leaning slightly.</p>	
00+1300'	

Photo Number: 54	Location: 00 + 1350'
Date: 01/18/2023	<p style="text-align: center;">South Elevation</p> <p style="text-align: center;">☀ 351°N (T) ● 38°4'39"N, 78°52'45"W ±13ft ▲ 1271ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:55:55</p>
Direction: North	
<p>Description: 45° bank angle; roots are moderately exposed; increased soil erosion around roots since the last visit; one tree along lower bank is dead.</p>	
00+1350'	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 55	Location: 00 + 1400'
Date: 01/18/2023	
Direction: North	
<p>Description: Non-remediated section; ~45° bank angle; moderately exposed roots throughout bank; 50% vegetation cover.</p>	
<p>00+1400' South River Leaf Off BMA-STM-05 18 Jan 2023, 10:54:05</p>	

Photo Number: 56	Location: 00 + 1450'
Date: 01/18/2023	
Direction: North	
<p>Description: Non-remediated section; ~40° bank angle; exposed roots throughout bank; footpath present from greenway.</p>	
<p>00+1450' South River Leaf Off BMA-STM-05 18 Jan 2023, 10:49:30</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 57		Location: 00 + 1500'	
Date: 01/18/2023	<p style="text-align: center;">South Elevation</p> <p style="text-align: center;">☀ 355°N (T) ● 38°4'39"N, 78°52'43"W ±13ft ▲ 1275ft</p>		
Direction: North			
<p>Description: End of non-remediated section; ~40° bank angle; footpath is present; 70% vegetation cover; one tree at toe and one on upper bank in good condition; footpath present; minimal undercutting and scour around tree roots at base.</p>	<p style="text-align: right;">00+1500'</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:46:28</p>		

Photo Number: 58		Location: 00 + 1550'	
Date: 01/18/2023	<p style="text-align: center;">South Elevation</p> <p style="text-align: center;">☀ 358°N (T) ● 38°4'39"N, 78°52'42"W ±13ft ▲ 1257ft</p>		
Direction: North			
<p>Description: Start of 2nd remediated section; 35° bank angle some bare soil and scour just upstream of beginning of rock toe; 80% vegetation cover.</p>	<p style="text-align: right;">00+1550'</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:42:07</p>		

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 59	Location: 00 + 1550'
Date: 01/18/2023	<p style="text-align: center;">East Elevation</p> <p style="text-align: center;">☀ 283°W (T) ● 38°4'39"N, 78°52'42"W ±13ft ▲ 1267ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:43:07</p>
Direction: West	
<p>Description: Upstream view of non-remediated bank; erosion and undercutting on non-remediated bank section.</p>	
00+1550'	

Photo Number: 60	Location: 00 + 1550'
Date: 01/18/2023	<p style="text-align: center;">West Elevation</p> <p style="text-align: center;">☀ 81°E (T) ● 38°4'39"N, 78°52'42"W ±13ft ▲ 1266ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:42:27</p>
Direction: East	
<p>Description: Downstream view of remediated bank; minimal sediment deposition; herbaceous vegetation is well established along upper bank, large trees are stable.</p>	
00+1550'	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 61	Location: 00 + 1600'
Date: 01/18/2023	<h3 style="background-color: #003366; color: white; padding: 5px;">South Elevation</h3> <div style="background-color: #cccccc; padding: 2px;"> ⊗ 356°N (T) ● 38°4'39"N, 78°52'42"W ±13ft ▲ 1265ft </div>
Direction: North	
<p>Description: ~35° bank angle; 95% vegetation cover; no at-risk trees present; some small cobbles have tumbled into the water but rock toe is mostly intact; minimal sediment deposition.</p>	
South River Leaf Off BMA-STM-05 18 Jan 2023, 10:39:53	

Photo Number: 62	Location: 00 + 1650'
Date: 01/18/2023	<h3 style="background-color: #003366; color: white; padding: 5px;">South Elevation</h3> <div style="background-color: #cccccc; padding: 2px;"> ⊗ 358°N (T) ● 38°4'39"N, 78°52'41"W ±13ft ▲ 1266ft </div>
Direction: North	
<p>Description: ~30° bank angle; 95% vegetation cover; no at-risk trees present; erosion control fabric is slightly exposed around kayak launch; stone dust eroded revealing larger gravel, cobbles from rock toe moved into river; minimal sediment deposition.</p>	
South River Leaf Off BMA-STM-05 18 Jan 2023, 10:37:54	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 63	Location: 00 + 1650'
Date: 01/18/2023	<div style="text-align: center;"> <h3>East Elevation</h3> <p>☉ 274°W (T) ● 38°4'39"N, 78°52'41"W ±13ft ▲ 1258ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:38:08</p> </div>
Direction: West	
<p>Description: Upstream view of remediated bank and riffle; grasses are well established along upper bank.</p>	
00+1650'	

Photo Number: 64	Location: 00 + 1650'
Date: 01/18/2023	<div style="text-align: center;"> <h3>West Elevation</h3> <p>☉ 71°E (T) ● 38°4'39"N, 78°52'41"W ±13ft ▲ 1254ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:38:16</p> </div>
Direction: East	
<p>Description: Downstream view of remediated bank; minimal sediment deposition; cobbles from kayak launch area moved farther into river.</p>	
00+1650'	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 65	Location: 00 + 1700'
Date: 01/18/2023	<h2 style="background-color: #003366; color: white; padding: 5px;">South Elevation</h2> <p style="background-color: #cccccc; padding: 2px;"> 📍 351°N (T) 📍 38°4'39"N, 78°52'41"W ±13ft ▲ 1258ft </p>  <p style="font-size: small; text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:35:21</p>
Direction: North	
<p>Description: ~30° bank angle; 95% vegetation cover; group of four trees above gravel walking path in good condition; erosion control fabric slightly exposed along gravel path; rock toe mostly intact but some cobbles have tumbled into water; path is slightly slanted.</p>	

Photo Number: 66	Location: 00 + 1700'
Date: 01/18/2023	<h2 style="background-color: #003366; color: white; padding: 5px;">East Elevation</h2> <p style="background-color: #cccccc; padding: 2px;"> 📍 293°W (T) 📍 38°4'39"N, 78°52'41"W ±13ft ▲ 1257ft </p>  <p style="font-size: small; text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:35:12</p>
Direction: West	
<p>Description: Upstream view of remediated bank; stone dust eroded revealing larger grade gravel, some cobbles and small boulders have tumbled into the water.</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 67	Location: 00 + 1700'
Date: 01/18/2023	
Direction: North	
<p>Description: Small patch of exposed soil around base of trees; stone dust from path has shifted slightly.</p>	
<p>00+1700' South River Leaf Off BMA-STM-05 18 Jan 2023, 10:34:37</p>	

Photo Number: 68	Location: 00 + 1750'
Date: 01/18/2023	
Direction: North	
<p>Description: ~30° bank angle; 95% vegetation cover; no at-risk trees present; rock toe intact; walking path is slightly slanted and geocell is slightly exposed above the large tree (not pictured).</p>	
<p>00+1750' South River Leaf Off BMA-STM-05 18 Jan 2023, 10:32:05</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection


Photo Number: 69	Location: 00 + 1800'
Date: 01/18/2023	<p style="text-align: center;">South Elevation</p> <p style="text-align: center;">☀ 345°N (T) ● 38°4'39"N, 78°52'39"W ±13ft ▲ 1262ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:27:52</p>
Direction: North	
<p>Description: ~30° bank angle; live stakes and plantings not established; 95% vegetation cover; no at-risk trees present; path is slightly slanted, some small cobbles have tumbled into the water.</p>	
00+1800'	00+1800'

Photo Number: 70	Location: 00 + 1800'
Date: 01/18/2023	<p style="text-align: center;">East Elevation</p> <p style="text-align: center;">☀ 275°W (T) ● 38°4'39"N, 78°52'39"W ±13ft ▲ 1266ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:28:13</p>
Direction: West	
<p>Description: Upstream view of remediated bank; rock toe is mostly stable with some gravel erosion.</p>	
00+1800'	00+1800'

South River Photo Log

North Park BMA
2022 Leaf-off Inspection


Photo Number: 71	Location: 00 + 1800'
Date: 01/18/2023	<h2 style="margin: 0;">South West Elevation</h2> <p style="margin: 0;">☀ 53°NE (T) ● 38°4'40"N, 78°52'39"W ±13ft ▲ 1264ft</p> 
Direction: Northeast	
Description: Downstream view of remediated bank; grasses are well established and rock toe is continuous and in stable condition.	
00+1800'	South River Leaf Off BMA-STM-05 18 Jan 2023, 10:28:06

Photo Number: 72	Location: 00 + 1850'
Date: 01/18/2023	<h2 style="margin: 0;">South Elevation</h2> <p style="margin: 0;">☀ 343°N (T) ● 38°4'40"N, 78°52'39"W ±13ft ▲ 1277ft</p> 
Direction: North	
Description: ~30° bank angle; 95% vegetation cover; no at-risk trees present; rock toe and gravel intact and walking path in good condition.	
00+1850'	South River Leaf Off BMA-STM-05 18 Jan 2023, 10:24:32

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 73	Location: 00 + 1900'
Date: 01/18/2023	<h3 style="color: white; background-color: #003366; padding: 5px;">South Elevation</h3> <div style="background-color: #cccccc; padding: 2px;"> ☀ 346°N (T) ● 38°4'40"N, 78°52'38"W ±13ft ▲ 1280ft </div>  <div style="display: flex; justify-content: space-between; font-size: 0.8em; margin-top: 5px;"> 00+1900' South River Leaf Off BMA-STM-05 18 Jan 2023, 10:16:04 </div>
Direction: North	
<p>Description: ~30° bank angle; 95% vegetation cover; no at-risk trees present; constructed wooden staircase intact; some exposed erosion control fabric at the bottom of the stairs; slight undercutting under bottom stair but still stable; some cobbles have tumbled into water.</p>	

Photo Number: 74	Location: 00 + 1900'
Date: 01/18/2023	<h3 style="color: white; background-color: #003366; padding: 5px;">East Elevation</h3> <div style="background-color: #cccccc; padding: 2px;"> ☀ 266°W (T) ● 38°4'40"N, 78°52'38"W ±13ft ▲ 1269ft </div>  <div style="display: flex; justify-content: space-between; font-size: 0.8em; margin-top: 5px;"> 00+1900' South River Leaf Off BMA-STM-05 18 Jan 2023, 10:16:23 </div>
Direction: West	
<p>Description: Upstream view of remediated bank; vegetation is well established; rock toe and walking path are intact.</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection



Photo Number: 75	Location: 00 + 1900'
Date: 01/18/2023	<h2 style="background-color: #003366; color: white; padding: 5px;">South West Elevation</h2> <p style="background-color: #cccccc; padding: 2px;">☉ 29°NE (T) ☉ 38°4'40"N, 78°52'38"W ±13ft ▲ 1268ft</p>  <p style="font-size: small; text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:16:16</p>
Direction: Northeast	
<p>Description: Downstream view of remediated bank.</p>	
00+1900'	

Photo Number: 76	Location: 00 + 1900'
Date: 01/18/2023	<h2 style="background-color: #003366; color: white; padding: 5px;">South East Elevation</h2> <p style="background-color: #cccccc; padding: 2px;">☉ 326°NW (T) ☉ 38°4'40"N, 78°52'38"W ±13ft ▲ 1282ft</p>  <p style="font-size: small; text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:22:33</p>
Direction: Northwest	
<p>Description: Last stair is slightly undercut with some exposed erosion control fabric.</p>	
00+1900' undercutting	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 77	Location: 00 + 1950'
Date: 01/18/2023	<h3>South East Elevation</h3> <p>☉ 330°NW (T) ● 38°4'40"N, 78°52'38"W ±13ft ▲ 1264ft</p> <p style="text-align: right; font-size: small;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:13:02</p>
Direction: Northwest	
<p>Description: ~40° bank angle; 95% vegetation cover; some patches of exposed soil; concrete outfall pipe above rock toe and rock toe are intact.</p>	
00+1950'	

Photo Number: 78	Location: 00 + 2000'
Date: 01/18/2023	<div style="display: flex; justify-content: space-between; font-size: x-small; margin-bottom: 5px;"> W NW N NE </div> <div style="display: flex; justify-content: space-between; font-size: x-small; margin-bottom: 5px;"> 240 270 300 330 0 30 </div> <p>☉ 323°NW (T) ● 38°4'41"N, 78°52'37"W ±13ft ▲ 1267ft</p> <p style="text-align: right; font-size: small;">South River Leaf Off BMA-STM-05 18 Jan 2023, 10:08:25</p>
Direction: Northwest	
<p>Description: ~45° bank angle; 95% vegetation cover; no at-risk trees present; rock toe intact; animal burrow through geocell is present.</p>	
00+2000'	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 79	Location: 00 + 2000'
Date: 01/18/2023	
Direction: Northwest	
<p>Description: Exposed soil with animal burrows present.</p>	
<p>00+2000' animal burrow through geocell</p> <p>South River Leaf Off BMA-STM-05 18 Jan 2023, 10:11:03</p>	

Photo Number: 80	Location: 00 + 2050'
Date: 01/18/2023	
Direction: Northwest	
<p>Description: ~45° bank angle; 95% vegetation cover; no at-risk trees present; rock toe intact; minimal sediment deposition; vegetation is well established along upper bank; new footpath is present above rock toe.</p>	
<p>00+2050'</p> <p>South River Leaf Off BMA-STM-05 18 Jan 2023, 10:03:18</p>	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 81	Location: 00 + 2100'
Date: 01/18/2023	
Direction: Northwest	
Description: ~45° bank angle; live stakes and plantings not established; 95% vegetation cover; erosion control fabric has fully degraded; new footpath is present above rock toe.	<p>☀ 319°NW (T) ● 38°4'41"N, 78°52'36"W ±13ft ▲ 1278ft</p> <p>00+2100' South River Leaf Off BMA-STM-05 18 Jan 2023, 10:01:27</p>

Photo Number: 82	Location: 00 + 2150'
Date: 01/18/2023	
Direction: Northwest	
Description: ~45° bank angle; two saplings have established; 95% vegetation cover; rock toe in good condition.	<p>☀ 329°NW (T) ● 38°4'41"N, 78°52'36"W ±13ft ▲ 1252ft</p> <p>00+2150' South River Leaf Off BMA-STM-05 18 Jan 2023, 09:59:32</p>

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 83	Location: 00 + 2200'
Date: 01/18/2023	
Direction: Northwest	
Description: ~45° bank angle; grasses are well established; 95% vegetation cover; no at-risk trees present.	
321°NW (T) 38°4'42"N, 78°52'35"W ±13ft ▲ 1290ft	
00+2200'	South River Leaf Off BMA-STM-05 18 Jan 2023, 09:55:34

Photo Number: 84	Location: 00 + 2200'
Date: 01/18/2023	
Direction: Northwest	
Description: Upstream view of remediated bank; rock toe is in good condition and grasses have fully established.	
242°SW (T) 38°4'42"N, 78°52'36"W ±13ft ▲ 1261ft	
00+2200'	South River Leaf Off BMA-STM-05 18 Jan 2023, 09:56:11

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 85		Location: 00 + 2200'	
Date: 01/18/2023			
Direction: Northeast	24°NE (T) ● 38°4'42"N, 78°52'35"W ±19ft ▲ 1264ft		
Description: Downstream view of remediated bank; rock toe in good condition; new fence present along top of bank next to greenway trail.			
	00+2200'	South River Leaf Off BMA-STM-05 18 Jan 2023, 09:56:00	

Photo Number: 86		Location: 00 + 2250'	
Date: 01/18/2023			
Direction: Northwest	319°NW (T) ● 38°4'42"N, 78°52'35"W ±13ft ▲ 1248ft		
Description: End of remediated section: ~45° bank angle; 95% vegetation cover; no at-risk trees; rock toe is in good condition.			
	00+2250'	South River Leaf Off BMA-STM-05 18 Jan 2023, 09:51:34	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 87	Location: 00 + 2300'
Date: 01/18/2023	
Direction: Northwest	
<p>Description: ~65° bank angle; start of non-remediated section; lower bank ~70° upper bank ~30°; significant soil erosion and evidence of scour beyond end of rock toe; significant exposed roots.</p>	
South River Leaf Off BMA-STM-05 18 Jan 2023, 09:49:14	

Photo Number: 88	Location: 00 + 2350'
Date: 01/18/2023	
Direction: Northwest	
<p>Description: ~65° bank angle; lower bank ~50° upper bank ~20°; highly exposed roots throughout; one large "at-risk" tree present.</p>	
South River Leaf Off BMA-STM-05 18 Jan 2023, 09:46:10	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 89	Location: 00 + 2350'
Date: 01/18/2023	
Direction: Southwest	
Description: Upstream view looking toward remediated section.	
South River Leaf Off BMA-STM-05 18 Jan 2023, 09:46:27	

Photo Number: 90	Location: 00 + 2380'
Date: 01/18/2023	
Direction: Northwest	
Description: Lower bank ~50°; Upper bank ~20°; Highly exposed tree roots throughout, significant erosion, scour, and undercutting observed; several trees with exposed roots are "at-risk".	
South River Leaf Off BMA-STM-05 18 Jan 2023, 09:32:25	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 91	Location: 00 + 2380'
Date: 01/18/2023	
Direction: Southwest	
Description: Upstream view with "at-risk" tree at 00 + 2350 pictured.	
South River Leaf Off BMA-STM-05 18 Jan 2023, 09:32:15	

Photo Number: 92	Location: 00 + 2380'
Date: 01/18/2023	
Direction: Northeast	
Description: Downstream view looking toward 2 nd Street bridge.	
South River Leaf Off BMA-STM-05 18 Jan 2023, 09:31:43	

South River Photo Log

North Park BMA
2022 Leaf-off Inspection

Photo Number: 93	Location: North Park
Date: 01/18/2023	<p style="text-align: center;">North East Elevation</p> <p style="text-align: center;">☀ 236°SW (T) ● 38°4'38"N, 78°52'50"W ±13ft ▲ 1257ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 12:59:03</p>
Direction: Southwest	
Description: Greenway trail recently paved and in good condition.	

Photo Number: 94	Location: North Park
Date: 01/18/2023	<p style="text-align: center;">E 150 S 180 SW 210 240 W 270 300 NW</p> <p style="text-align: center;">☀ 231°SW (T) ● 38°4'43"N, 78°52'35"W ±13ft ▲ 1272ft</p> <p style="text-align: right;">South River Leaf Off BMA-STM-05 18 Jan 2023, 09:18:27</p>
Direction: Southwest	
Description: Greenway along downstream end of remediated bank. Fence on left recently installed during trail paving.	

Attachment E - Table 2
2022 Leaf-off Vegetation Plots
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Vegetative Species		Absolute % Cover ¹
Scientific Name	Common Name	Fall
Tree/Vine Stratum		
<i>Acer saccharum</i>	Sugar Maple	0-10
<i>Ampelopsis brevipedunculata</i>	Porcelainberry	5
<i>Catalpa speciosa</i>	Northern Catalpa	0-25
<i>Cercis canadensis</i>	Eastern Redbud	0-25
<i>Clematis terniflora</i>	Sweet Autumn Virginbower	0-1
<i>Juglans nigra</i>	Black Walnut	15-20
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	5
<i>Platanus occidentalis</i>	American Sycamore	0-10
<i>Quercus montana</i>	Chestnut Oak	0-30
<i>Robinia pseudoacacia</i>	Black Locust	0-30
<i>Toxicodendron radicans</i>	Poison Ivy	5-35
<i>Vitis vulpina</i>	Frost Grape	5
Sapling/Shrub Stratum		
<i>Acer rubrum</i>	Red Maple	2-5
<i>Acer saccharinum</i>	Silver Maple	0-5
<i>Asimina spp.</i>	Pawpaw	0-1
<i>Carpinus caroliniana</i>	American Hornbeam	0-5
<i>Juglans nigra</i>	Black Walnut	0-25
<i>Lindera benzoin</i>	Spicebush	0-10
<i>Lonicera tatarica</i>	Tatarian Honeysuckle	10-30
<i>Robinia pseudoacacia</i>	Black Locust	0-5
<i>Rosa multiflora</i>	Multiflora Rose	5-10
<i>Sambucus spp.</i>	Elderberry	0-10
<i>Viburnum dentatum</i>	Arrowwood	0-2
Herbaceous Stratum		
<i>Acer platanoides</i>	Norway Maple	0-2
<i>Ambrosia spp.</i>	Ragweed	0-1
<i>Avena sativa</i>	Common Oats	0-95
<i>Carex vulpinoidea</i>	Fox Sedge	0-5
<i>Chamaenerion angustifolium</i>	Fireweed	0-1
<i>Chasmanthium latifolium</i>	Indian Woodoats	0-15
<i>Cirsium vulgare</i>	Bull Thistle	0-1
<i>Conyza canadensis</i>	Horseweed	0-1
<i>Cyperus esculentus</i>	Yellow Nutsedge	0-10
<i>Daucus carota</i>	Wild Carrot	0-2
<i>Elymus riparius</i>	Riverbank Wildrye	70-70
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	0-1
<i>Festuca rubra</i>	Red Fescue	0-5
<i>Glechoma hederacea</i>	Ground Ivy	0-10
<i>Lactuca virosa</i>	Bitter Lettuce	0-1
<i>Lindera benzoin</i>	Northern Spicebush	0-10
<i>Lonicera tatarica</i>	Tatarian Honeysuckle	0-3
<i>Melilotus officinalis</i>	Yellow Sweetclover	0-1
<i>Rubus idaeus</i>	Red Raspberry	0-5
<i>Solidago rugosa</i>	Wrinkleleaf Goldenrod	0-5

Attachment E - Table 2 (continued)
2022 Leaf-off Riparian Vegetation Plots
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

<i>Taraxacum spp.</i>	Dandelion	0-1
<i>Vicia americana</i>	Purple vetch	0-2
<u>Notes:</u> 1. Represents the range observed between two riparian vegetative survey plots at North Park BMA.		

Attachment E - Waynesboro Off-Site Cap Areas
 Inspection Record Sheet
 Maintenance Plan

Location and property owner name: North Park BMA		
Item	Status/Maintenance Needs	Repairs Needed?
Access Roads	Parking lot and greenway in good condition.	1
Trails	In good condition: greenway was recently paved.	1
Drainage Structures	None.	NA
Outfall Structures	None.	NA
Rip-Rap Protection	Rip-rap is intact.	1
Cap System Vegetative Cover	Most vegetation has fully established.	1
Cap System Geosynthetics	Most erosion control fabric has fully deteriorated. Some isolated spots of minimally exposed geocell are present.	1
Cap System Slope Stability	Slope is consistent and stable along remediated sections.	1
Cap System Subsidence	None observed.	1
Fencing and Gates	Fencing and gates are intact. New wooden fence installed near downstream end of the BMA.	1

Notes:

- 1 - Functioning properly; no repairs needed
- 2 - Repairs needed (describe why, what, and where), but not time critical
- 3 - Time critical repair needed (describe what and where)

Comments:

- Recommended herbicide treatment of Japanese knotweed in late summer/early fall 2023

Inspected by: Rich Judge and Becca Indeck Date: 01/18/2023