Commonwealth of Virginia

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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,

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

cc: Michael Sherrier, DSP
Bill Reese, AECOM
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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	2023 Leaf-on Maintenance Inspection Former DuPont Waynesboro Site, Area of Concern 4	
From	Rich Judge, AECOM	
Date	September 18, 2023	

This memorandum summarizes the 2023 Leaf-on Maintenance Inspections (maintenance inspection) for the Constitution Park, City Shops, Allied Ready Mix, Shiloh Baptist Church, and North Park Bank Management Areas (BMAs), conducted on June 2nd, June 14th, and June 15th, 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 log (Table 1), photographic log, vegetation plot data (Table 2), and cap area inspection sheet 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

This memorandum also presents the summarized Rapid Bioassessment Protocol (RBP) results, discussed under the “Riparian and Aquatic Habitat” heading for each BMA. These results document changes in riparian and aquatic habitat provisions of each of the BMAs over time as defined in the Short-Term Monitoring Plan (URS, 2015).

As of November 2020, construction has been fully completed at all five of the Phase 1 BMAs.

FINDINGS

Constitution Park

The 2023 leaf-on maintenance inspection conducted at the Constitution Park BMA documented stable bank conditions with increased invasive species coverage compared to the previous leaf-on inspection conducted in spring 2022 (AECOM, 2023a). Evidence of

pedestrian traffic is present along improvised access paths but is reduced compared to the previous leaf-on inspection. Pedestrian traffic is not affecting the integrity of the bank treatment. Slightly increased erosion from high water and human activity has occurred around the installed staircase and gravel path but both are still intact. Almost all geocell is completely covered by vegetation and is thus not visible. Erosion control fabric and coir logs are almost completely degraded as designed and are being replaced by natural sediment deposition and vegetative growth, indicators that reflect long-term stability.

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

Vegetation

- Planted and natural recruitment of native vegetation remains present throughout the BMA. Herbaceous plugs continue to appear healthy. Estimated percent coverage of native vegetation throughout the BMA is 30%.
- Coverage of Japanese knotweed (*Fallopia japonica*) has increased, with numerous large patches present at, but not limited to: 00-25', +00', +50', +200', +250', +300', +400', +500', +525'.
- Estimated percent coverage of Japanese knotweed and other invasives (including *Ailanthus*) throughout the BMA is 70%.

Stability

- Consistent bank angles were documented, as constructed, throughout the BMA.
- Paths from foot traffic throughout the bank and along the toe of slope were noted, but do not appear to be affecting bank stability at this time. Evidence of foot traffic has remained the same since the most recent inspection.
- Limited areas of localized scour were documented. Minimal erosion was present in and around the bottom of the stone steps at 00+100'. Scour and undercutting in and around geocell was also noted around 00+300' to +400'.
- Evidence of two "at-risk" (i.e., may no longer be stable) trees: an American Sycamore (*Platanus occidentalis*) leaning heavily over the river between 00+50' and 00+100', and a previously noted Box Elder (*Acer negundo*) at 00+450'.

Installed Features

- Erosion control fabric has decomposed as designed throughout the BMA and is no longer visible in most areas.
- Rock toe features were intact with increased sediment deposition in the interstices.
- Large woody debris (LWD) were stable, and anchor chains were intact.
- Wooden coir log anchoring stakes remain in place.
- A slight depression caused by water erosion and human activity remains present, but stable at the bottom of the stairs.
- Stone steps are intact but partially overgrown. The lowest step is slightly undercut but remains stable.
- No animal burrows were observed.

Riparian and Aquatic Habitat

Rapid Bioassessment Protocol (RBP) scores in 2023 remained generally similar or improved compared to 2022 and reflect the influence of adjacent land use at Constitution Park. Most instream RBP habitat parameters were within the "sub-optimal" range, except for embeddedness which was "marginal". This may be due to low flows causing less substrate sorting on the South River over the winter and early spring. Most terrestrial (i.e., riparian) metric scores improved since 2022 as vegetative cover continues to increase. However, the left bank score decreased from "sub-optimal" to "marginal" due to the substantial increase in Japanese knotweed cover, which does a poor job of minimizing bank erosion. It is anticipated that the habitat and associated RBP scores will improve with ongoing management of invasive vegetation and as the vegetative community continues to mature and stabilize the bank.

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-on inspection conducted in spring 2022 (AECOM, 2023b). Native grasses, saplings, and herbaceous vegetation are fully established. Almost all geocell is completely covered by vegetation and is thus not visible.

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

Vegetation

- The upper portions of the bank continued to exhibit dense stands of native grasses, saplings, and shrubs. The estimated percent coverage of native vegetation throughout the BMA is 85%.
- Larger trees left in place during remediation along the BMA are healthy and show no signs of stress, except for the smallest existing mature sycamore tree at 00+300'.
- Patches of invasive Japanese knotweed are present throughout the BMA including, but not limited to: 00+50', +200', +450', +500', +880'.These localized areas will continue to be treated, as necessary.
- Estimated percent coverage of Japanese knotweed and other invasive vegetation (including *Ailanthus and L. tatarica*) throughout the BMA is 15%.

Stability

- Riverbanks 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 within the remediated areas other than the previously identified dead existing mature sycamore at 00+300'. Several "at-risk" trees are present in the non-remediated portion of the BMA (00-25' and 00+550' to 00+700').
- An area of erosion upstream of 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 has mostly degraded, as designed, throughout the BMA. One small patch remains visible at 00+880' but is mostly covered by vegetation.

- The installed rock toe was intact and is continuing to show evidence of desired sediment deposition throughout. Thick mats of grass have colonized and stabilized much of the deposited sediment along the lower rock toe.
- Previous inspections documented two installed LWD features that were displaced from their original positions; they remain stable with sediment filling in behind them.

Riparian and Aquatic Habitat

Riparian and aquatic habitat quality indicators (RBP metrics) have improved at the City Shops BMA since the last leaf-on inspection. Aquatic habitat scores have increased as the installed LWD features and rock toe have trapped sediment and provided good fish habitat. Embeddedness and pool substrate characterization scores have remained "marginal" possibly due to the low gradient profile of the reach. Vegetative community continues to mature as native plants have become fully established. All riparian habitat parameters ranked in the "sub-optimal" or "marginal" categories. RBP scores are expected to continue improving.

Allied Ready Mix

The findings of the maintenance inspection conducted at the Allied Ready Mix BMA documented stable conditions throughout with increased vegetation cover compared to the previous leaf-on inspection conducted in spring 2022 (AECOM, 2023c). Vegetation is fully established with extensive natural recruitment occurring and limited Japanese knotweed present. Japanese knotweed will continue to be treated with concentrated herbicide treatment, as necessary.

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

Vegetation

- Planted native vegetation is fully established. The estimated percent coverage of native vegetation throughout the BMA is 85%.
- Stations exhibiting increased cover of invasive knotweed include 00-20', +200', +400', +750', +1250', and +1300'.
- Estimated percent coverage of Japanese knotweed and other invasive vegetation throughout the BMA is 15%.

Stability

- As built riverbank angles remained unchanged and consistent bank angles were maintained throughout the BMA as constructed.
- One "at-risk" tree upstream of 00+1250' in non-remediated bank section.
- Areas of localized scour within the BMA, mostly associated with foot traffic, were limited to isolated areas in the upstream BMA including: 00-20', +00', +50', +100'.
- 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 rock toe was intact throughout the BMA, with sediment deposition filling 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

Allied Ready Mix BMA RBP scores have improved, with all scores being in the “optimal” or “sub-optimal” categories. Aquatic habitat substrate and water depth is varied across the remediated and non-remediated portions of the BMA which are providing improved conditions for fish.

The habitat metric scores for riparian vegetative zone have also improved since 2022. Vegetative protection improved from “marginal” to “sub-optimal” along the left bank due to increasing native vegetative growth and stayed consistent along the right bank. Riparian habitat will improve over time as vegetation continues to mature and as Japanese knotweed is treated with herbicide. The increased density of vegetation has also led to an observed reduction in human foot-traffic disturbance since the last inspection.

Shiloh Baptist Church

The maintenance inspection conducted at the Shiloh Baptist Church BMA documented mostly stable conditions with some new indicators of relatively minor erosion and subsidence that will continue to be monitored. Grasses and herbaceous vegetation are nearly fully established in all areas, including at 00+550’ where vegetation was not fully establishing as early as last year (Attachment D – Photolog, Photo #26). Almost all geocell is completely covered by vegetation and is thus not visible, except for along the slope above the greenway path but below the church parking lot, and at 00+600’ at the top of bank.

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

Vegetation

- Installed saplings, shrubs, and grasses appear healthy and are mostly fully established throughout the BMA. The estimated percent coverage of native vegetation throughout the BMA is 82%.
- Re-seeded grasses planted during reconstruction following the 2020 bank failure at 00+550’ have almost fully established.
- Larger patches of invasive Japanese knotweed are present, but not limited to the following locations: 00-25’, +00’, +150’, +250’, +300’, +350’, +400’, +500’, +550’, +600’, and throughout the bank above the greenway near the church.
- Estimated percent coverage of Japanese knotweed and other invasive vegetation throughout the BMA is 18%.
- “At-risk” trees include a sycamore at 00-25’, and several trees downstream of the end of the remediated area (00+975’).
- Possible future “at-risk” trees are located at stations 00+450’ (catalpa saplings) and 00+650’ (American sycamore). Roots are currently stable.

Stability

- Consistent bank slopes were documented throughout the BMA with no indication of any significant changes from the as-built condition.
- Slight scour was noted at stations 00-25’, and downstream of 00+975’, outside of the remediated area.
- An erosional rill that has minimally exposed underlying geocell was observed at 00+600’.

Installed Features

- The installed rock toe and two sections of the upper bank fortified with riprap were intact and showed no indication of movement.
- The armor-flex reinforced stormwater drain outlet at 00+350' was intact.
- Minor soil subsidence was observed around many of the newly installed metal guardrail posts between 00+600' and +900'.

Riparian and Aquatic Habitat

Shiloh Baptist Church BMA post-remediation RBP scores in 2023 generally stayed the same compared to 2022. Most instream RBP habitat parameters for the Shiloh Baptist Church BMA remained "sub-optimal". This sub-optimal score is expected to improve over time as the stabilization and recovery after the post-2020 bank failure continues. The bank features, including large boulders used in the rock toe, combined with variable natural stream bed topography provide a nice variety of fish and benthic invertebrate habitats along the reach. The habitat metric scores for vegetative protection and riparian vegetative zone generally stayed the same. It is expected that riparian habitat conditions will improve as vegetation growth increases, and patches of invasive Japanese knotweed are treated with herbicide, as necessary to allow native species to re-establish.

North Park

The maintenance inspection conducted at the North Park documented mostly stable conditions at the remediated bank with limited areas of minor erosion and subsidence. Minor erosion was present around the installed staircase and footpath near the kayak launch. Grasses and seed mix species have become fully established across most of the BMA. Occasional bare soil/dead grass remain between the rock toe and decomposing coir logs near the downriver end of the first remediated section. A shallow trench with exposed and torn geocell was observed running along the top of the bank (next to the greenway path) between 00+300' and 00+850'. This section does not appear to be at imminent risk of bank failure.

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

Vegetation

- Woody and herbaceous vegetation is fully established throughout the BMA. The estimated percent coverage of native vegetation throughout the BMA is 90%.
- Large trees left in place during remediation along the BMA appear healthy and show no signs of stress.
- Patches of invasive Japanese knotweed are present at, but not limited to: 00+400', 00+450', 00+1100' and 00+1750'.
- Estimated percent coverage of Japanese knotweed and other invasive vegetation is 10%.

Stability

- Consistent bank slopes were documented throughout the BMA with no indication of changes from the as-built condition.
- There was slight scour and/or exposed roots documented at station 00-25' at the toe of slope, throughout the non-remediated section, and at 00+1550', 00+1900' at the bottom of the stairs, and downstream of the end of the remediated section at 00+2300'.

- Some gravel and smaller pebbles on the walking path between 00+1600' and 00+1900' have washed down towards the river. Some small boulders in rock toe have tumbled into water along the same stretch. The path remains in fair condition.
- "At-risk" trees were identified and include several within the non-remediated portion of the bank, and the box elder at station 00+2300'.

Installed Features

- The installed rock toe remains intact in all areas outside of 00+1600' to 00+1900'.
- Erosion control fabric is no longer visible throughout most of the BMA due to dense vegetative cover.
- Geocell is exposed due to topsoil erosion, minor subsidence and/or animal burrows throughout most of the upstream remediated section. Geocell is not exposed along the downstream remediated section.
- Newly installed drainage swale at 00+800' remains in good condition but has minor geocell exposure and scour/trampled vegetation surrounding it.

Riparian and Aquatic Habitat

RBP scores at the North Park BMA improved compared to 2022 and continue to reflect the influence of adjacent land use. North Park RBP scores were all "optimal" or "sub-optimal". Aquatic habitat metrics improved as the bank seems to be working as designed. There is a variety of pool and riffle habitat throughout, with well-sorted substrate and a few submerged logs and boulders that are providing good habitat. Riparian habitat has improved as native vegetation continues to colonize and expand. Multiple animal burrows along the bank were observed during the inspection. Large trees remain stable, and the riparian zone width is significant. Habitat metrics are expected to improve as vegetation further establishes and bank erosion decreases.

RECOMMENDATIONS

The following monitoring and maintenance activities are recommended for each of the BMAs based on the findings of the 2023 leaf-on 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). Management is recommended for late summer/early fall.
- Add measures to stabilize undercut and exposed geocell between 00+300' and 00+400'.

City Shops

- Continue invasive species management (e.g., herbicide treatment or biocontrol) to meet preliminary success criteria in late summer/early fall.

Allied Ready Mix

- Continue invasive species management (e.g., herbicide treatment or biocontrol) to meet preliminary success criteria in late summer/early fall.
- Continue monitoring geocell exposure along upper bank in fall 2023.

Shiloh Baptist Church

- Continue invasive species management (e.g., herbicide treatment or biocontrol) to meet preliminary success criteria in late summer/early fall.
- Continued monitoring of bank stability around erosional rill at 00+600'. Improved drainage measures may need to be implemented if it worsens.
- Closely monitor soil subsidence around vertical metal guardrail posts between 00+600' and +900'. Holes may need to be filled in.

North Park

- Continue invasive species management (e.g., herbicide treatment or biocontrol) to meet preliminary success criteria in late summer/early fall.
- Replace and augment cobbles and gravel along walking path and rock toe between 00+1650' and +1900'.
- Monitor the subsidence and shallow trench observed along the top of bank between 00+300' and 00+850' to ensure it does not deteriorate further.

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.

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.

URS Corporation. 2015. Final AOC 4 Short-Term Monitoring Plan – Relative River Mile 0-2 of the South River, Virginia. February 2015.

Attachment A
Constitution Park BMA

Attachment A - Table 1
2023 Leaf-on 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 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**	55	N (see notes)	Lower bank: ~20 degrees Upper bank: ~55 degrees	L	Large patches of invasive knotweed present	N	No trees adjacent to edge of water	NA	NA	NA	None.	Y	Low presence of scour 5' upstream of 00 - 25 Slight erosion at waters edge	N	None
00 + 00	**3, 4**	55	N (see notes)	Lower bank: ~30 degrees Upper bank: ~55 degrees	NA	Large patches of invasive knotweed present (~65% cover); Sumac trees present	N	No trees adjacent to edge of water	NA	N	N	Coir logs decomposed, stakes that previously held coir log are visible protruding from river	N	Slight scour and undercutting	N	No erosion control fabric or geocell visible due to overgrown knotweed
00 + 50	**5, 6**	45	Y	Lower 3' of bank toe level	NA	Large patches of Japanese knotweed (~65% cover). Native Jewelweed, adult trees on bank include 2 Maples, Sumac, Sycamore	Y	Sycamore close to rock toe leaning heavily over river between 00+50' and 00+100'	NA	N	N	Coir logs decomposed	N	Evidence of foot traffic along the toe of slope	N	None
00 + 100	**7, 8, 9**	50	N (see notes)	Lower bank: ~20 degrees (rock toe); Upper bank: ~50 degrees	NA	Blue Flag Iris, Wing Stem, Nettle, Jewelweed, locust trees, catalpa sapling, and Sycamores present	N	No trees adjacent to edge of water	Y (Rock Toe)	N	N	Rock toe along bank and constructed river access steps intact with evidence of disturbance due to high water and/or human activity	Y	Sediment deposition adjacent to rock toe boulders, minimal scour under base of steps but they remain intact	Y	Increased erosion at bottom of stairs
00 + 150	**10, 11**	45	N (see notes)	Lower bank: ~15 degrees (rock toe); Upper bank: ~45 degrees	NA	Native vegetation is dominant - Soft Rush, Bulrush, Elderberry, Jewelweed, Maple, Sumac, Catalpa, Locust. Patch of invasive ailanthus	N	No trees adjacent to edge of water	Y (LWD and Rock Toe)	N	N	None	Y	Silt filling in behind LWD and in boulders; minimal scour and undercutting	N	None
00 + 200	**12**	55	Y	None	NA	Large patches of Japanese knotweed (~90% cover); Native vegetation includes - Pokeberry, Elderberry, Sycamore, Catalpa Saplings, and Jewelweed	N	Princess tree adjacent	Y (Rock Toe)	N	N	Coir logs decomposed, stakes that previously held coir log are visible protruding from river	Y	No evidence of foot traffic along the toe of slope; minimal scour and undercutting	Y	Increased knotweed cover and scour/undercutting
00 + 250	**13, 14**	55	Y	None	NA	Large patches of Japanese knotweed (~90% cover); Native vegetation includes: Pokeberry, Jewelweed, Maple, Sumac and Catalpa saplings that are fully established	N	No trees adjacent to edge of water	NA	N	N	Coir logs decomposed, evidence of foot traffic along toe of slope	N	Minimal undercutting	Y	Significant increase in knotweed cover
00 + 300	**15**	70	Y	None	NA	Large patches of Japenese knotweed (90% cover). Other vegetation includes: Staghorn Sumac, Crown Vetch, large adult Catalpa, large jewelweed patch at toe	N	Catalpa tree adjacent	NA	N	N	None	N	None	Y	Significant increase in knotweed cover
00 + 350	**16, 17, 18**	70	Y	None	NA	Invasive vegetation present: ~80% Japanese knotweed; Native bank vegetation includes: Jewelweed, Curly Dock, Dogbane, and Blue Flag Iris	N	No trees adjacent to edge of water	NA	N	N	Deck lookout on top of bank in good condition	Y	Minimal scour present at toe of slope	Y	Significant increase in knotweed cover (80%). Growth now covers overlook area. Possible large adjacent tree dying
00 + 400	**19, 20**	60	Y	None	NA	Native vegetation present along top of bank with small patches of invasive knotweed (~30% cover) at toe of slope; Native vegetation includes: Black Walnut, Willow, Jewelweed, Pokeberry, Poison Ivy, Box Elder, and Catalpa saplings	N	No trees adjacent to edge of water	NA	N	N	None	N	None	N	None
00 + 450	**21**	50	Y	None	NA	Japanese knotweed (~5% cover); Native vegetation present: Jewelweed, Box Elder, Locust, Curly Dock, Pokeberry	Y	Box Elder at risk, many dead limbs overhanging	NA	N	N	None	N	None	N	None
00 + 500	**22, 23, 24**	40	Y	The bank design has a decreased vertical bank height (~6') compared to upstream monitoring stations.	NA	Native vegetation present with patches of the invasive knotweed (~95% cover); Native vegetation observed: Jewelweed, Pokeberry, Wing Stem, and Catalpa	N	No trees adjacent to edge of water	NA	N	N	None	N	None	N	None
00 + 525	**25, 26, 27**	45	Y	Non-remediated section at end; Bank is 3 feet high	NA	Predominantly native vegetation cover; Japanese knotweed ~5% cover, Sycamore, Locust, American Elm, Jewelweed, Curly Dock, and Elderberry	N	No at risk trees adjacent to edge of water, Catalpa saplings establishing	NA	N	N	None	N	None	N	More lush native growth

Notes:

1. 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

2. 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)

3. 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)

4. 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)

5. 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)

6. 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

7. 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)

8. Grey shaded cells are portions of the bank that were not remediated

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 1	Location: 00 – 25’

Date: 6/5/2023

Direction: West

Description:

Lower bank ~20°; Upper bank ~55°

No woody plants or trees adjacent to edge of water; large patch of invasive knotweed along water’s edge

Photo Number: 2	Location: 00 – 25’

Date: 6/5/2023

Direction: Northwest

Description:

View from upstream of remediated bank; low presence of scour 5' upstream of 00 – 25’; slight erosion at waters edge

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 3	Location: 00 + 00'

Date: 6/5/2023

Direction: West

Description:

Lower bank ~30°; Upper bank ~55°

Invasive Japanese knotweed cover ~65%; coir logs deteriorated; slight scour and undercutting along toe

Photo Number: 4	Location: 00 + 00'

Date: 6/5/2023

Direction: Northwest

Description:

Downstream view from beginning of remediated bank

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 5	Location: 00 + 50′

Date: 6/5/2023

Direction: West

Description:

~45° consistent bank angle; 3' of bank toe is level; 65% invasive knotweed cover; at-risk adjacent sycamore 20 feet downstream

Photo Number: 6	Location: 00 + 50′

Date: 6/5/2023

Direction: Northwest

Description:

Downstream view of at-risk adjacent sycamore at 00+70′

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 7	Location: 00 + 100'

Date: 6/5/2023

Direction: West

Description:

Upper bank ~50°
Lower bank ~20°
(rock toe)

At-risk trees sycamore upstream at 00+70'; sediment deposition adjacent to rock toe boulders

Photo Number: 8	Location: 00 + 100'

Date: 6/5/2023

Direction: West

Description:

Rock toe along bank and constructed river access stairs remain intact; erosion from high water and human activity has caused several holes and divots on the path at the bottom of the stairs

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 9	Location: 00 + 100′

Date: 6/5/2023

Direction: West

Description:

Zoomed out view of river access stairs; stairs are slightly overgrown by vegetation but remain accessible

Photo Number: 10	Location: 00 + 150′

Date: 6/5/2023

Direction: West

Description:

Upper bank ~45°; Lower bank 15° (rock toe)

Native vegetation dominant; small patch of invasive ailanthus saplings and some knotweed present

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 11	Location: 00 + 150'

Date: 6/5/2023

Direction: Northwest

Description:

Downstream view of bank remediation

A continuous line of Japanese knotweed is present

Photo Number: 12	Location: 00 + 200'

Date: 6/5/2023

Direction: West

Description:

~55° bank angle (rock toe visible)

Invasive knotweed ~90% cover; coir logs deteriorated, but stakes that held logs visibly protruding from water; minimal scour along toe; princess tree adjacent

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 13	Location: 00 + 250'

Date: 6/5/2023

Direction: West

Description:

~55° bank angle

Significant line of continuous Japanese knotweed cover ~90%; slight undercutting along toe

Photo Number: 14	Location: 00 + 250'

Date: 6/5/2023

Direction: West

Description:

Upstream view of remediated bank

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 15	Location: 00 + 300′

Date: 6/5/2023

Direction: West

Description:

~70° bank angle

Large patches of invasive knotweed ~90% cover; large Catalpa tree adjacent to edge of water in good condition

Photo Number: 16	Location: 00 + 350′

Date: 6/5/2023

Direction: West

Description:

~70° bank angle

Large patches of invasive knotweed present: ~80% cover; large adjacent tree possibly dying

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 17	Location: 00 + 350'

Date: 6/5/2023

Direction: West

Description:

Upstream view of remediated bank

Photo Number: 18	Location: 00 + 350'

Date: 6/5/2023

Direction: Northwest

Description:

Downstream view of remediated bank (Main St. bridge to right of picture in the distance)

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 19	Location: 00 + 400'

Date: 6/5/2023

Direction: West

Description:

~60° bank angle

Small patch of invasive knotweed ~30%; mostly native vegetation along bank; dead tree limbs hanging over river

Photo Number: 20	Location: 00 + 400'

Date: 6/5/2023

Direction: Southwest

Description:

Upstream view of remediated bank with smokestack of former DuPont facility in the distance

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 21	Location: 00 + 450'

Date: 6/5/2023

Direction: West

Description:

~50° bank angle

Native vegetation present along top of bank with small patches of invasive knotweed at toe of slope; at-risk Box Elder tree with several dead limbs hanging over water

Photo Number: 22	Location: 00 + 500'

Date: 6/5/2023

Direction: West

Description:

~40° bank angle

Significant growth of invasive knotweed 95% cover

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 23	Location: 00 + 500'

Date: 6/5/2023

Direction: Southwest

Description:

Upstream view of bank remediation; at-risk tree present leaning over water, bark stripped from portion of trunk; slight undercutting observed

Photo Number: 24	Location: 00 + 500'

Date: 6/5/2023

Direction: Northwest

Description:

Downstream view from end of remediated bank; no trees or vegetation adjacent to water after remediated section

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 25 **Location:** 00 + 525'

Date: 6/5/2023

Direction: West

Description:

End of remediated section and beginning of non-remediated section

~45° bank angle

Bank is only ~3 ft in height; small patch of invasive knotweed; increased lush native growth; some cobbles are exposed due to low water level

Photo Number: 26 **Location:** 00 + 525'

Date: 6/5/2023

Direction: South

Description:

Upstream view from the end of the remediated section

South River Photo Log

Attachment A

Constitution Park BMA
2023 Leaf-on Inspection

Photo Number: 27	Location: 00 + 525’

Date: 6/5/2023

Direction: Northwest

Description:

Downstream view looking toward Main St. bridge from end of remediated bank

Greenway path, grass, and depositional bar remain in good condition

Attachment A - Table 2
2023 Leaf-on Riparian Vegetation Plots
Constitution Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Vegetative Species		Absolute % Cover[1]
Scientific Name	**Common Name**	**Spring**
Tree/Vine Stratum		
Acer rubrum	Red Maple	20-25
Catalpa speciosa	Northern Catalpa	0-5
Convolvulus arvensis	Field Bindweed	0-2
Platanus occidentalis	American Sycamore	10-0
Robinia pseudoacacia	Black Locust	40-0
Toxicodendron radicans	Poison Ivy	5
Sapling/Shrub Stratum		
Acer rubrum	Red Maple	0-30
Ailanthus altissima	Tree of Heaven	0-2
Catalpa speciosa	Northern Catalpa	0-15
Cornus amomum	Silky Dogwood	0-5
Lonicera japonica	Japanese Honeysuckle	0-15
Lonicera maackii	Amur Honeysuckle	0-5
Physocarpus opulifolius	Atlantic Ninebark	0-5
Platanus occidentalis	American Sycamore	0-15
Rhus typhina	Staghorn Sumac	20-5
Sambucus spp.	Elderberry	2-0
Herbaceous Stratum		
Amaranthus spinosus	Spiny Amaranth	0-10
Andropogon gerardii	Big Bluestem	0-15
Arctium minus	Lesser Burdock	0-2
Convolvulus arvensis	Field Bindweed	0-10
Cyperus esculentus	Yellow Nutsedge	0-2
Elymus riparius	Riverbank Wildrye	2-15
Fallopia japonica	Japanese Knotweed	70-85
Festuca rubra	Red Fescue	0-5
Galium sp.	Bedstraw	40-0
Impatiens capensis	Jewelweed	2-0
Iris versicolor	Blue Flag	0-2
Lactuca serriola	Prickly Lettuce	0-2
Microstegium vimineum	Japanese Stiltgrass	0-5
Phytolacca americana	Pokeberry	25-20
Poa annua	Annual Bluegrass	0-5
Rubus spp.	Raspberry	0-1
Schizachyrium scoparium	Little Bluestem	0-10
Taraxacum spp.	Dandelion	0-2
Trifolium pratense	Red Clover	0-1
Vicia americana	Purple Vetch	0-2

Notes:
1. Represents the range observed between two riparian vegetative survey plots per short-term monitoring station.

Attachment A - Waynesboro Off-Site Cap Areas

2023 Leaf-on 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 minimal trampled vegetation. Stairs are slightly undercut along bottom but remain 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. Estimated percent coverage of invasive knotweed is 70%. AECOM recommends concentrated herbicide treatment in late summer/early fall.	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 may need topsoil fill and/or other measures to stabilize.	2
Cap System Slope Stability	Slope is generally consistent and stable.	1
Cap System Subsidence	Slight erosion near the farthest upriver 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.
- Recommended stabilization of eroded and undercut geocell at 00+350'.

Inspected by: Rebecca Indeck, Jon Cosenza, Antonio Zarrelli Date: June 2, 2023

Attachment B
City Shops BMA

Attachment B - Table 1
2023 Leaf-on 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 - 25	**1**	85	Y	None	H	High quantity of exposed roots on the bank which is obstructed from view in picture by herbaceous vegetation. ~80% vegetated: ~50% Honeysuckle, Ailanthus saplings	Y	At-risk trees present: Box Elder, Tree of Heaven (ailanthus)	NA	NA	NA	None	Y	Scour present throughout	N	None
00 + 00	**2**	70	N (see notes)	Lower bank: ~60 degrees Upper bank: ~80 degrees	NA	No exposed roots	N	Princess tree adjacent	Y (Rock Toe)	N	N	None	N	Sediment deposition on rock toe; grass growing	Y	Increased sediment deposition and vegetative growth and reduced scour along bank toe
00 + 50	**3, 4, 5**	45	Y	None	NA	Japanese knotweed observed ~15% cover	N	None	Y (LWD and Rock Toe)	N	N	None	N	None	Y	Increased japanese knotweed coverage
00 + 100	**6, 7**	45	Y	None	NA	Predominantly native vegetation along top of rock toe - Sumac ~60% cover, grasses Sycamore saplings and jewelweed at toe; ~2% knotweed cover	N	None	Y (LWD and Rock Toe)	N	N	None	N	None	Y	Slight increase in invasive knotweed cover
00 + 150	**8, 9**	45	Y	None	NA	Predominantly native vegetation along top of rock toe - Sycamore saplings, Dogwoods, Sumac, Jewelweed at toe, Willow and Physocarpus; grasses fully established along rock toe; ~8% japanese knotweed cover	N	None	Y (LWD and Rock Toe)	N	N	No geocell observed, Could not check erosion control fabric due to poison ivy cover, LWD intact with increased adjacent sediment deposition	N	None	N	None
00 + 200	**10, 11**	45	Y	None	NA	Native vegetation along top of rock toe; Large patches of invasive knotweed present (~95% cover); sumac trees; access stairs covered by knotweed	N	None	Y (LWD and Rock Toe)	N	N	No geocell or erosion control fabric visible, Rock stairs and gate present on upper half of bank but covered in knotweed (unable to closely inspect condition)	N	None	N	None
00 + 250	**12, 13**	45	Y	None	NA	Predominantly native vegetation along top of rock toe - Sumacs 15-20' tall, Sycamore growth ~20 ft, Pokeberry, and Jewelweed	N	None	Y (LWD and Rock Toe)	Y	N	No erosion control fabric observed, LWD intact	N	None	Y	Geocell exposed
00 + 300	**14, 15**	45	Y	None	NA	Native vegetation above rock toe - Elderberry ~80% cover, Sycamore trees; Willow saplings; Periwinkle ~25%. Invasive knotweed ~2% cover	Y	Sycamore is leafing, might not be dead; angled over river	Y (LWD and Rock Toe)	Y	N	LWD intact	N	None	N	None
00 + 350	**16**	45	Y	None	NA	Native vegetation above and in rock toe - Sumac, Sycamore trees, Jewelweed ~80% cover, and Catalpa saplings	N	None	Y (LWD and Rock Toe)	Y	N	None	N	None	N	None
00 + 400	**17, 18, 19**	45	Y	None	NA	Predominantly native vegetation along top of rock toe - small Sycamores at toe of slope, Sumac, Silver Maple saplings. Invasive honeysuckle present; invasive knotweed present ~10% Jewelweed and grasses are dominant	N	None	Y (LWD moved and Rock Toe)	Y	N	LWD remains in shifted position downstream of 00+400'	N	None	N	None
00 + 450	**20, 21**	45	Y	None	NA	Native vegetation along top of rock toe - 4 Sycamores, and 1 Silver Maple; Some large trees present; Patches of invasive knotweed present (~40% cover)	N	None	Y (LWD and Rock Toe)	Y	N	Geocell exposed, Grasses present	N	None	Y	Increased japanese knotweed % cover; exposed geocell present
00 + 500	**22, 23, 24**	45	Y	None	NA	Native vegetation along top of Rock Toe - Jewelweed (~30% cover), Elderberry, Raspberry, Elm sapling; some large trees present - Sycamore. Invasive Japanese knotweed (~35% cover)	N	None	Y (Rock Toe)	Y	N	Geocell exposed	N	None	Y	Geocell exposed, increased knotweed % cover
00 + 550	**25**	70	Y	None	H	Lower bank consists mostly of exposed roots	Y	Several large trees with exposed roots hanging over the river - Silver Maple and Sycamore. Dead tree and invasive Honeysuckle remain "at-risk"	NA	NA	NA	Beginning of non-remediated section	Y	Entire lower bank shows large amounts of scour	N	None
00 + 600	**26**	75	Y	Significant undercutting	H	Lower bank consists mostly of exposed roots. Black Walnut, sycamores, dead locust tree	Y	Many exposed roots along the lower bank. At-risk trees include: dying Silver Maple, Hackberry, Sycamore	NA	NA	NA	None	Y	Entire lower bank shows large amounts of scour	N	None
00 + 650	**27**	85	Y	None	H	Bank consists mostly of exposed roots. Sycamore, locust, walnut tree. Strip of Jewelweed at toe of slope	Y	At-risk trees present along the upper bank - Hackberry, invasive Honeysuckle and Black Locust.	NA	NA	NA	None	Y	Entire bank shows large amounts of scour, exposed soil at toe	N	None

Attachment B - Table 1
2023 Leaf-on 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	**28, 29**	85	Y	None; animal burrows present	H	Bank consists mostly of exposed roots, with some vegetation growing on slope	Y	At-risk trees present along the upper bank: Hackberry, invasive Honeysuckle and Black Locust	NA	NA	NA	None	Y	Entire bank shows large amounts of scour, exposed soil at toe	N	None
00 + 750	**30, 31, 32**	45	N (see notes)	Beginning of second remediated area. Upstream bank: ~80 degrees Downstream bank: ~45 degrees	M	Upper bank upstream of the remediation consists mostly of exposed roots. Invasive Japanese Knotweed ~2% cover, also present is Black Locust, Jewelweed ~10% cover, Willow ~25% cover, and Pokeweed ~20% cover	N	No at-risk trees present	Y (Rock Toe)	N	N	Beginning of second remediated section; no geocell or erosion control fabric visible	Y	Moderate amounts of scour above rock toe	N	None
00 + 800	**33, 34**	45	Y	None	NA	Planted vegetation well established above Rock Toe, vegetation establishing throughout Rock Toe - no invasive Knotweed observed. Elms sapling ~15% cover, Sycamore sapling at toe, Wing Stem and grasses also observed	N	No at-risk trees present	Y (LWD and Rock Toe)	N	N	LWD and rock toe in good condition	N	None	N	None
00 + 850	**35, 36, 37**	30	Y	None	NA	Planted vegetation well established above Rock Toe. Box Elder and Red Maple saplings, invasive Ailanthus sapling observed, invasive knotweed 25% cover. Jewelweed becoming established	N	No at-risk trees present	Y (Rock Toe)	N	N	No geocell or erosion control fabric visible, LWD originally placed here remains in shifted position at 00+880'	N	None	Y	Increased japanese knotweed cover
00 + 880	**38, 39**	20	Y	None	NA	Planted vegetation well established above rock toe, Catalpa and Sycamore saplings and large Sycamore, invasive knotweed ~ 35% cover, Large patch of knotweed downstream of remediated area	N	No woody plants adjacent to edge of water	Y (moved LWD and Rock Toe)	Y	Y	Erosion control fabric covered in vegetation, sediment filling around shifted LWD from 00+850', downstream end of shifted LWD is at a 45 degree angle from bank about 10-15 feet from the water's edge	N	None	Y	Increased japanese knotweed cover

Notes:

1. 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

2. 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)

3. 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)

4. 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)

5. 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)

6. 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

7. 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)

8. Grey shaded cells are portions of the bank that were not remediated.

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 1	Location: 00 – 25’

Date: 6/15/2023

Direction: Northwest

Description:
Upstream of remediated bank

~85° bank angle; high quantity of exposed roots on the bank; at-risk tree; 80% vegetated; scour present throughout

Photo Number: 2	Location: 00 + 00’

Date: 6/15/2023

Direction: Northwest

Description:

Beginning of 1st remediated bank; lower bank ~60°; upper bank ~80°

Vegetation fully established and grass continuing to grow; good sediment deposition on rock toe

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 3	Location: 00 + 50’

Date: 6/15/2023

Direction: Northwest

Description:
~45° bank angle

Predominantly native vegetation along top of rock toe; vegetation fully established; grasses growing along rock toe; invasive knotweed coverage ~15%

Photo Number: 4	Location: 00 + 50’

Date: 6/15/2023

Direction: Southwest

Description:

Upstream view of remediated bank

2nd St. bridge pictured in the background

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 5	Location: 00 + 50’

Date: 6/15/2023

Direction: Northeast

Description:
Downstream view of remediated bank

Rock toe intact; LWD intact; sediment filling behind LWD; no scour present along rock toe

Photo Number: 6	Location: 00 + 100’

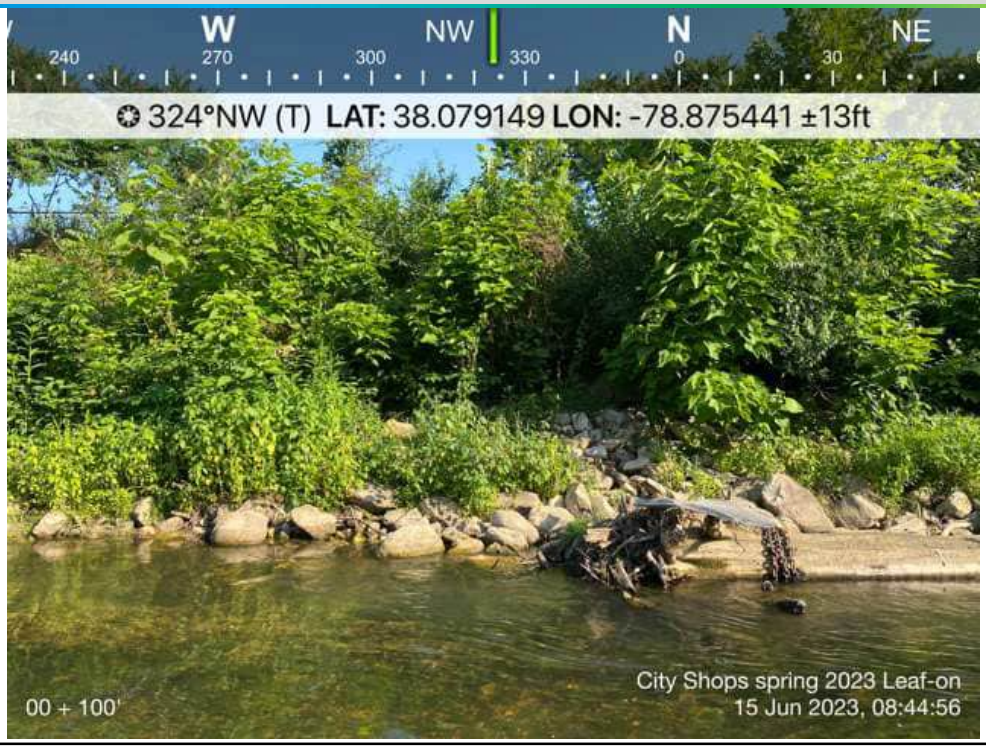
Date: 6/15/2023

Direction: Northwest

Description:

~45° bank angle

Predominantly native vegetation along top of rock toe; vegetation fully established; grasses established along rock toe; invasive Japanese knotweed ~2% cover; rock toe and LWD intact; no scour present along rock toe



South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 7	Location: 00 + 100'

Date: 6/15/2023

Direction: Southeast

Description:
View of center of river and opposite bank (STM-08) from remediated bank

Water levels are significantly lower than last inspection due to lack of recent precipitation

Photo Number: 8	Location: 00 + 150'

Date: 6/15/2023

Direction: Northwest

Description:

~45° bank angle

Predominantly native vegetation; invasive Japanese knotweed coverage ~8%; grasses established on rock toe; no scour present along rock toe and outfall pipe present within. LWD fully intact

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 9	Location: 00 + 150′

Date: 6/15/2023

Direction: West

Description:

Upstream view of remediated bank; rock toe intact; LWD intact; sediment filling behind LWD; no scour present along rock toe; vegetation established in and around rock toe

No extremely large trees are present from this point to the beginning of the BMA upriver

Photo Number: 10	Location: 00 + 200′

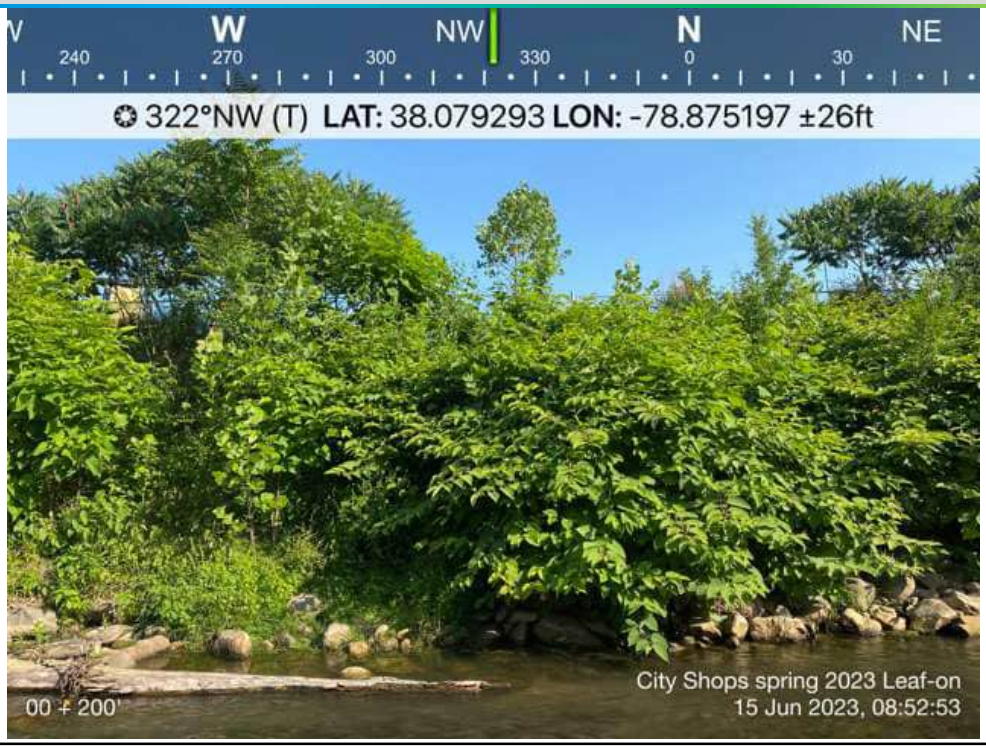
Date: 6/15/2023

Direction: Northwest

Description:

~45° bank angle

Invasive Japanese knotweed ~95% cover; completely covers rock stairs and gate present on upper half of bank; LWD intact; sediment filling behind LWD; no scour present along rock toe



South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 11	Location: 00 + 200′

Date: 6/15/2023

Direction: Northeast

Description:

Downstream view of remediated bank

Rock toe intact; LWD intact; sediment filling behind LWD; no scour present along rock toe

Photo Number: 12	Location: 00 + 250′

Date: 6/15/2023

Direction: Northwest

Description:

~45° bank angle

Predominately native vegetation along top of rock toe; Sycamore tree nearby ~20 ft tall; LWD intact; sediment filling in behind LWD, no scour present along rock toe; geocell exposed

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 13	Location: 00 + 250′

Date: 6/15/2023

Direction: Northwest

Description:

View of minimally exposed geocell along upper bank

Photo Number: 14	Location: 00 + 300′

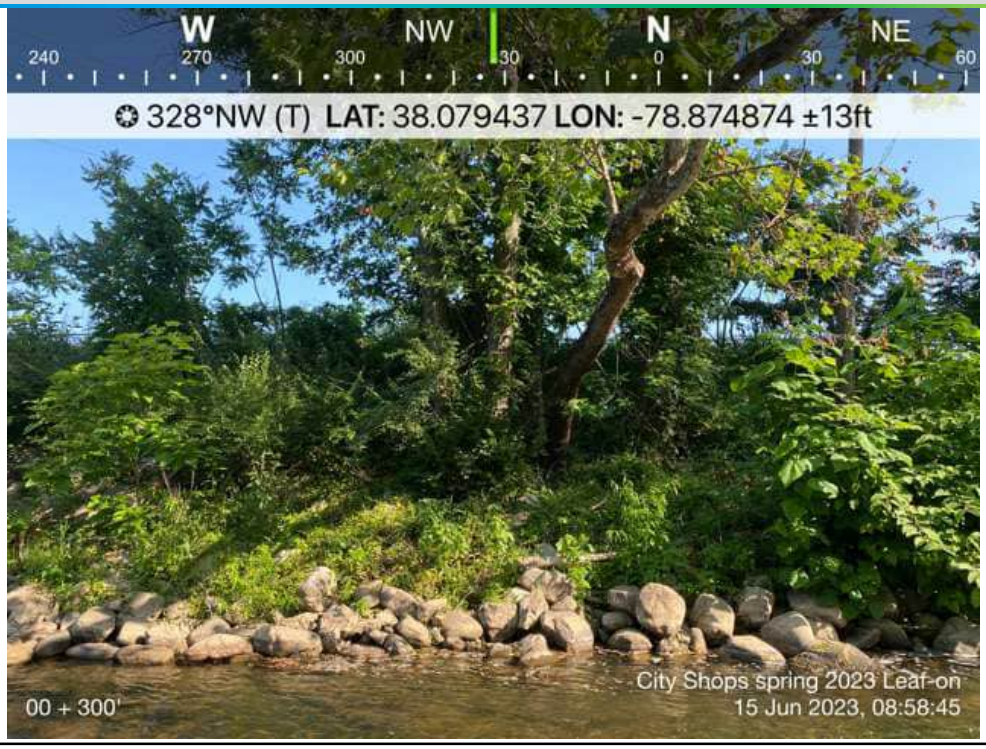
Date: 6/15/2023

Direction: Northwest

Description:

~45° bank angle; predominantly native vegetation along top of rock toe; invasive knotweed present ~2% cover

At-risk Sycamore is in poor health but leafing; exposed geocell present



South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 15	Location: 00 + 300′

Date: 6/15/2023

Direction: North

Description:

Small patch of bare soil and exposed geocell along upper bank

Photo Number: 16	Location: 00 + 350′

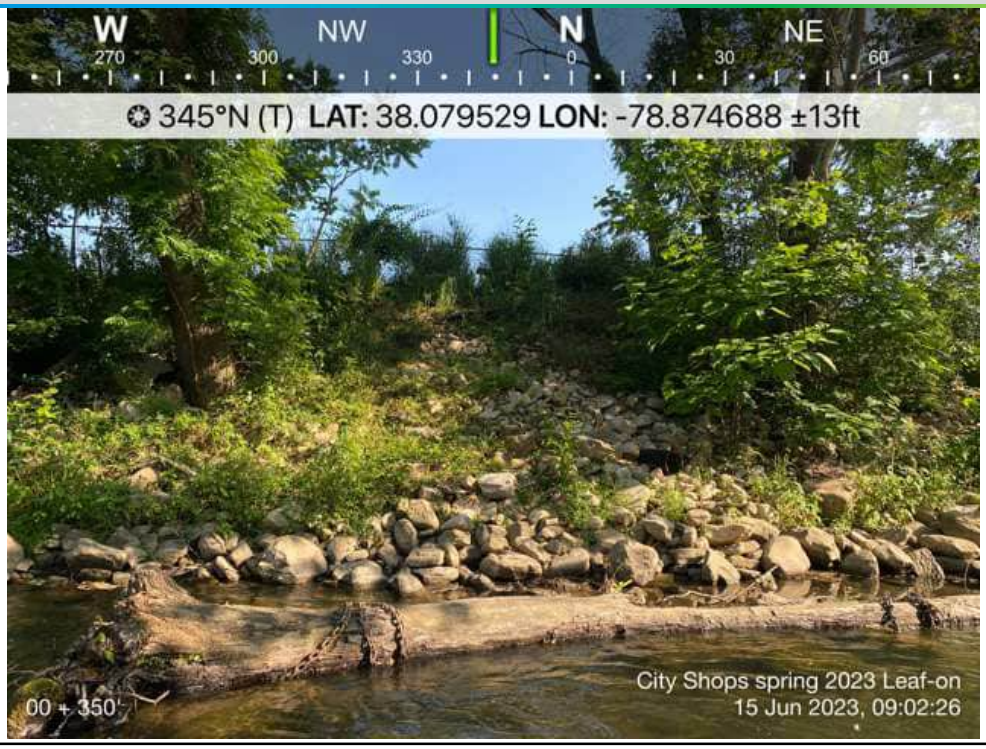
Date: 6/15/2023

Direction: North

Description:

~45° bank angle

Predominantly native vegetation; intact rock toe; vegetation fully established; geocell minimally exposed along upper bank



South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 17	Location: 00 + 400'

Date: 6/15/2023

Direction: Northwest

Description:

~45° bank angle

Native vegetation fully established; invasive knotweed coverage has increased ~10%; large trees present; LWD remains downstream but intact; rock toe intact; no scour present along rock toe; geocell minimally exposed along upper bank

Photo Number: 18	Location: 00 + 400'

Date: 6/15/2023

Direction: West

Description:

Upstream view of remediated bank with "at-risk" Sycamore at 00+300' pictured

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 19	Location: 00 + 400'

Date: 6/15/2023

Direction: Northeast

Description:

Downstream view of the end of the 1st remediation bank; native vegetation and invasive knotweed present; some large trees present; rock toe intact; no scour present along rock toe; also pictured are the original LWD and shifted LWD at 00 + 450'

Photo Number: 20	Location: 00 + 450'

Date: 6/15/2023

Direction: Northwest

Description:

~45° bank angle

Vegetation fully established but Japanese knotweed coverage has increased to ~40%; large trees present in center of picture have exposed geocell; LWD that shifted from upstream (bottom of photo) and original LWD (center of photo) remain in place

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 21	Location: 00 + 450′

Date: 6/15/2023

Direction: Northwest

Description:

Exposed geocell around large trees

Photo Number: 22	Location: 00 + 500′

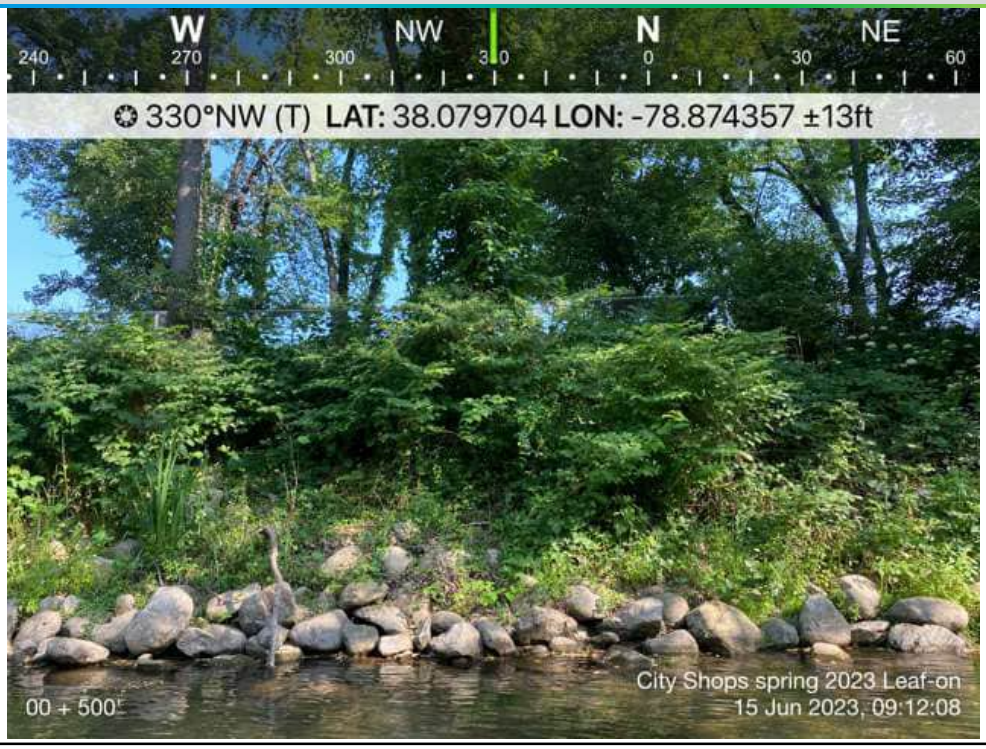
Date: 6/15/2023

Direction: Northwest

Description:

End of 1st remediation area; ~45° bank angle

Vegetation fully established; Japanese knotweed coverage ~35%; small sycamore on mid-bank leaning over river at 45°; rock toe intact; geocell exposed along upper bank



South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 23	Location: 00 + 500'

Date: 6/15/2023

Direction: West

Description:

Upstream view of remediated bank from end of first remediated section

Photo Number: 24	Location: 00 + 500'

Date: 6/15/2023

Direction: Northeast

Description:

Downstream view of non-remediated bank from end of first remediated section

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 25	Location: 00 + 550’

Date: 6/15/2023

Direction: Northwest

Description:

Start of non-remediated area

~70° bank angle; significant bank erosion and undercutting; lower bank consists mostly of exposed roots; several large trees with exposed roots hanging over the river; entire lower bank shows large amounts of scour

Photo Number: 26	Location: 00 + 600’

Date: 6/15/2023

Direction: Northwest

Description:

~75° bank angle

Bank erosion and undercutting present; bank consists mostly of exposed roots; at-risk trees present along the upper bank, some of them beginning to die; entire bank shows moderate amounts of scour

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 27	Location: 00 + 650′

Date: 6/15/2023

Direction: Northwest

Description:

~85° bank angle

Severe bank erosion and undercutting; bank consists mostly of exposed roots; at-risk trees present along the upper bank, some of them beginning to die; entire bank shows large amounts of scour

Photo Number: 28	Location: 00 + 700′

Date: 6/15/2023

Direction: Northwest

Description:

End of non-remediated section

~85° bank angle; severe bank erosion and undercutting; bank consists mostly of exposed roots; at risk trees present along the upper bank, some of them beginning to die; entire bank shows large amounts of scour.

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 29	Location: 00 + 700'

Date: 6/15/2023

Direction: Northwest

Description:

Possible animal burrow present

Photo Number: 30	Location: 00 + 750'

Date: 6/15/2023

Direction: North

Description:

Beginning of second remediated section

~45° bank angle

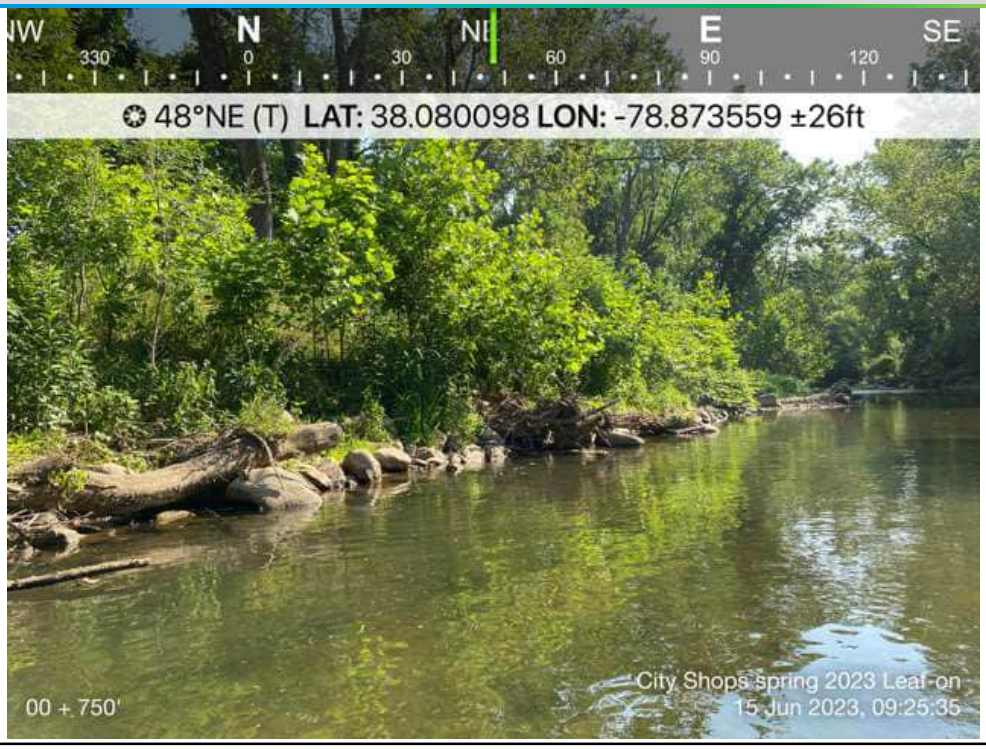
Vegetation well established above rock toe; no at-risk trees present; rock toe intact; LWD intact; moderate scouring above rock toe

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 31	Location: 00 + 750’
Date: 6/15/2023 Direction: West Description: Upstream view of non-remediated bank from start of second remediated section	

Photo Number: 32	Location: 00 + 750’
Date: 6/15/2023 Direction: Northeast Description: Downstream view of second remediated section	

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 33	Location: 00 + 800’

Date: 6/15/2023

Direction: North

Description:

~45° bank angle

Vegetation well established above rock toe; no at-risk trees present; rock toe intact; LWD intact; no scour present along rock toe

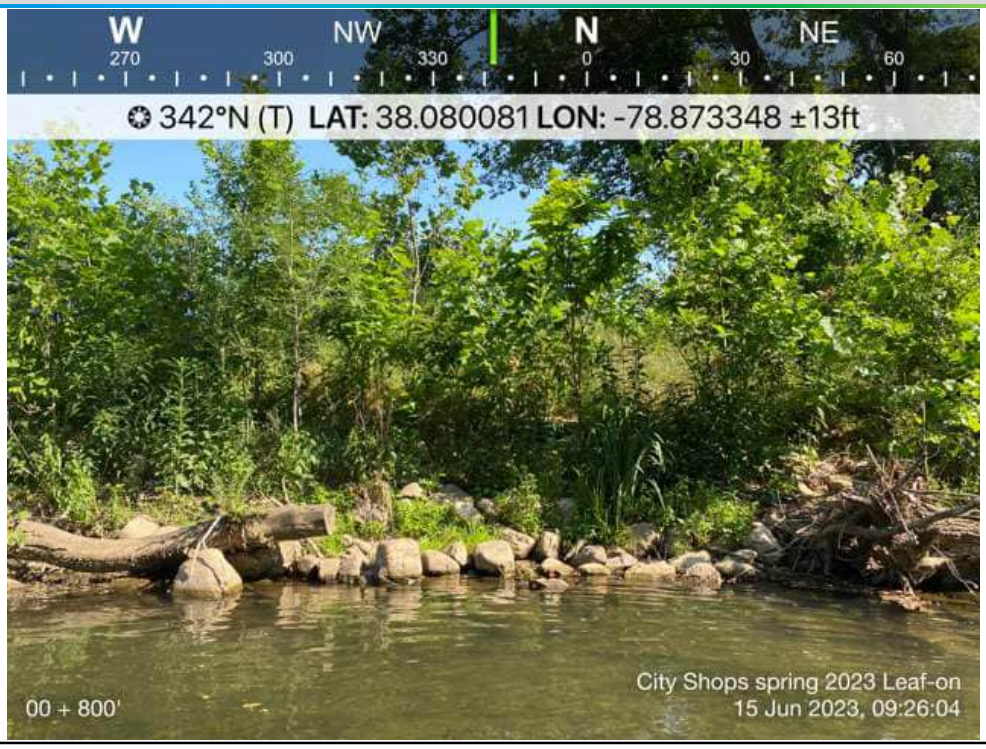


Photo Number: 34	Location: 00 + 800’

Date: 6/15/2023

Direction: Northeast

Description:

Downstream view of the end of the remediated bank

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 35	Location: 00 + 850'

Date: 6/15/2023

Direction: Northwest

Description:

~45° bank angle

Vegetation established about and in rock toe; invasive knotweed 25% cover; Ailanthus saplings present; no at-risk trees present; rock toe intact; LWD remains shifted downstream but intact; no scour present along rock toe

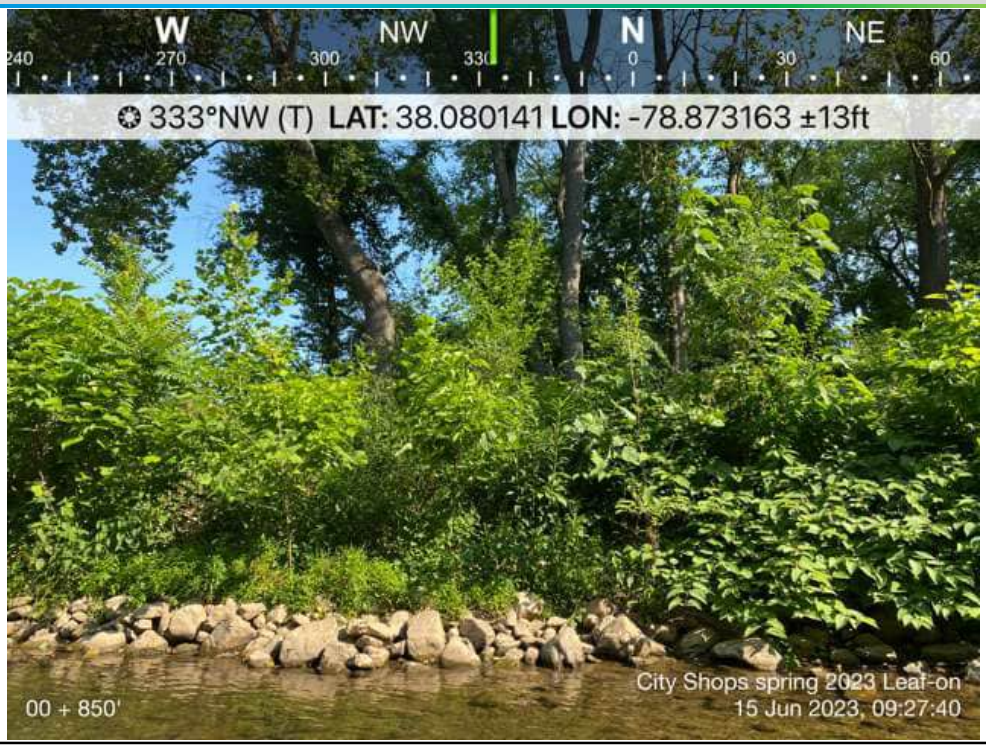


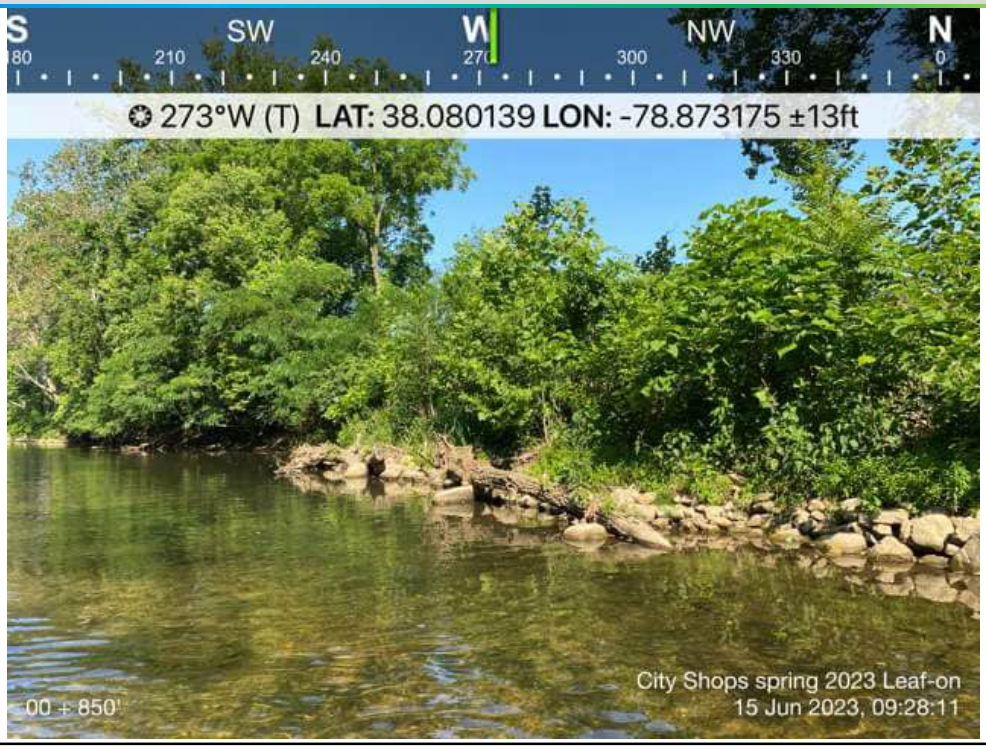
Photo Number: 36	Location: 00 + 850'

Date: 6/15/2023

Direction: West

Description:

Upstream view of remediated bank



South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 37	Location: 00 + 850′

Date: 6/15/2023

Direction: Northeast

Description:

Downstream view of remediated bank

Shifted LWD from 00+850′ visible at 00+880′ and has not shifted further

Photo Number: 38	Location: 00 + 880′

Date: 6/15/2023

Direction: North

Description:

End of remediated bank

~20° bank angle

LWD shifted from 00+850′ remains in place with substantial surrounding sediment deposition; vegetation well established above rock toe; Invasive knotweed ~25%

South River Photo Log

Attachment B

City Shops BMA
2023 Leaf-on Inspection

Photo Number: 39	Location: 00 + 880'

Date: 6/15/2023

Direction: Northeast

Description:

Downstream view of non-remediated bank

Attachment B - Table 2
2023 Leaf-on Riparian Vegetation Plots
City Shops BMA
Former DuPont Waynesboro Site, Area of Concern 4

Vegetative Species		Absolute % Cover[1]
Scientific Name	**Common Name**	**Spring**
Tree/Vine Stratum		
Acer negundo	Box Elder	0-70
Celastrus orbiculatus	Oriental Bittersweet	0-15
Juglans nigra	Black Walnut	0-15
Rhus typhina	Staghorn Sumac	0-50
Vitis vulpina	Frost Grape	0-10
Sapling/Shrub Stratum		
Acer rubrum	Red Maple	0-2
Betula nigra	River Birch	1-10
Catalpa speciosa	Northern Catalpa	0-2
Cornus sp.	Dogwood sp.	0-5
Elaeagnus umbellata	Autumn Olive	0-2
Fothergilla gardenii	Dwarf Witch-alder	0-10
Lonicera maackii	Amur Honeysuckle	0-30
Lonicera tatarica	Tatarian Honeysuckle	0-70
Physocarpus opulifolius	Atlantic Ninebark	0-10
Platanus occidentalis	American Sycamore	0-5
Populus deltoides	Eastern Cottonwood	0-5
Rhus typhina	Staghorn Sumac	60-0
Senna marilandica	Maryland Senna	0-20
Herbaceous Stratum		
Acer negundo	Boxelder maple	0-2
Agrostis sp.	Bentgrass	0-25
Amaranthus spinosus	Spiny Amaranth	0-40
Andropogon gerardii	Big Bluestem	15-30
Barbarea vulgaris	Yellow Rocket	0-5
Brassica rapa	Field Mustard	0-2
Capsella bursa-pastoris	Shepherd's Purse	0-1
Carex sp.	Sedge sp.	5-60
Chasmanthium latifolium	Indian Woodoats	30-30
Conoclinium coelestinum	Blue Mistflower	0-1
Convolvulus arvensis	Field Bindweed	0-2
Conyza canadensis	Horseweed	0-5
Coreopsis sp.	Tickseed sp.	0-2
Cynodon dactylon	Bermuda Grass	0-2
Cyperus esculentus	Yellow Nutsedge	0-5
Daucus carota	Wild Carrot	0-1
Elymus riparius	Riverbank Wildrye	0-10
Eupatorium perfoliatum	Boneset	0-20
Eurybia divaricata	White Wood Aster	0-2
Fallopia japonica	Japanese Knotweed	0-40
Galium sp.	Bedstraw	0-5
Lepidium vrginicum	Virginia Pepperweed	0-1
Lespedeza thunbergii	Thunberg's Lespedeza	0-1
Linaria vulgaris	Butter-and-Eggs	0-5
Lonicera tatarica	Tatarian Honeysuckle	0-30

Attachment B - Table 2 (continued)
2023 Leaf-on Riparian Vegetation Plots
City Shops BMA
Former DuPont Waynesboro Site, Area of Concern 4

Oxalis stricta	Common Yellow Woodsorrel	0-1
Panicum virgatum	Switchgrass	5-10
Persicaria spp.	Jumpseed (pink flower)	0-20
Poa annua	Annual Bluegrass	0-5
Potentilla recta	Sulphur Cinquefoil	0-1
Ranunculus recurvatus	Blisterwort	0-1
Rumex spp.	Sorrells/Docks	0-3
Saponaria officinalis	Soapwort	0-3
Securigera varia	Crownvetch	0-5
Senna marilandica	Maryland Senna	2-25
Sonchus arvensis	Perennial Sow-Thistle	0-2
Trifolium repens	White Clover	0-15
Verbascum virgatum	Wand Mullein	0-2
Verbesina alternifolia	Wingstem	0-15
Vernonia noveboracensis	Ironweed	0-15
Vicia americana	Purple Vetch	5-10

Notes:
1. Represents the range observed between two riparian vegetative survey plots per short-term monitoring station.

Attachment B - Waynesboro Off-Site Cap Areas

2023 Leaf-on 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	The cap system is completely covered by vegetation. Many (mostly younger) trees have been cut by beavers, but roots remain intact. Japanese knotweed is still present throughout the BMA with approximately 15% cover and continues to spread; AECOM recommends herbicide treatment in late summer/early fall.	2
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’ remain intact.
- Recommended herbicide of Japanese knotweed in late summer/early fall.

Inspected by: Rich Judge and Kimberly Brogan Date: 06/15/2023

Attachment C
Allied Ready Mix BMA

Attachment C - Table 1
2023 Leaf-on 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 - 20	**1, 2**	20	Y	None	NA	Invasive Japanese knotweed ~ 50% cover; Catalpa, Pokeweed and invasive Honeysuckle present	N	None	NA	NA	NA	No fabric or geocell installed: upstream of remediation	N	Some scour associated with foot traffic along bank	N	None
00 + 00	**3,4**	45	Y	None	NA	Vegetation established on slope; Jewelweed ~30% cover; Pokeweed, Curly Dock, large Elderberry shrub, grasses ~65% cover, one invasive Ailanthus sapling, invasive knotweed ~5%	N	None	Y (Rock Toe)	Y	N	Geocell minimally exposed along upper bank	Y	Some scour associated with foot traffic along bank; sand deposition above rock toe	Y	Increased japanese knotweed cover
00 + 50	**5, 6, 7**	50	Y	Animal burrows observed nearby	NA	Elderberry ~25% cover, Cut Leaf Coneflower ~5% cover, Jewelweed and Dogwoods ~25% cover, grasses ~55% cover are well established adjacent to edge of water	N	None	Y (Rock Toe)	Y	N	Geocell minimally exposed along upper bank	N	Sand deposition at toe of bank	N	None
00 + 100	**8, 9, 10**	50	Y	None	NA	Native herbaceous vegetation adjacent to water; observed Box Elder, Jewelweed at toe ~25% cover, invasive Ailanthus sapling, Silver Maples, Sumacs, Willows, Dogwoods ~15% cover, and grasses making up remaining cover	N	None	Y (Rock Toe)	Y	N	Geocell minimally exposed along upper bank	N	None	N	None
00 + 150	**11**	50	Y	None	NA	Native herbaceous vegetation adjacent to water; also present: Elderberry ~30% cover, Dogwood ~30% cover, Sycamore, Elm, Jewelweed, and Willows	N	None	Y (Rock Toe)	Y	N	Geocell minimally exposed along upper bank	N	Sand deposition at toe of bank	N	None
00 + 200	**12**	50	Y	None	NA	Native herbaceous vegetation established; Dogwoods and Willows, Elderberry ~60% cover, Jewelweed and Willows ~10% cover, intermixed grasses, and Dogwoods; invasive knotweed present ~2%	N	None	Y (Rock Toe)	Y	N	Geocell minimally exposed along upper bank	N	Sand deposition at toe of bank	N	None
00 + 250	**13**	50	Y	None	NA	Native herbaceous vegetation established; Sycamore sapling at top of slope, grasses 95% cover, Willows, Elderberry ~20% cover, Jewelweed and Dogwood ~25% cover; one patch invasive knotweed ~2%	N	None	Y (Rock Toe)	Y	N	No erosion control fabric or geocell visible, no exposed soil	N	Sand deposition at toe of bank	N	None
00 + 300	**14, 15**	40	Y	None	NA	Native herbaceous vegetation established; jewelweed at toe; grasses well established on toe of bank; trampled grasses from improvised path on upstream portion of slope	N	None	Y (Rock Toe)	Y	N	Geocell minimally exposed along upper bank	N	Sand and gravel deposition at toe of bank	N	None
00 + 350	**16**	50	Y	None	NA	Native herbaceous vegetation established; Elderberry; jewelweed at toe; pedestrian path at toe	N	None	Y (Rock Toe)	N	N	Geocell minimally exposed along upper bank	N	Sand deposition at toe of bank	N	None
00 + 400	**17**	50	Y	None	NA	Native vegetation established; Large patches of invasive Knotweed present on both sides of the outfall ~35% cover, Sycamore, Maple saplings at toe, mostly grasses ~80% cover, large Sycamore with Poison ivy, Willows	N	None	Y (Rock Toe)	N	Y	No geocell visible, erosion control fabric exposed near outfall pipe, outfall pipe and drainage features intact, rock toe intact	N	Sand deposition at toe of bank	Y	Increased cover of Japanese knotweed present on both sides of outfall
00 + 450	**18, 19**	60	Y	None	NA	Bank completely covered in native vegetation; Nettle, Jewelweed, Elderberry ~30% cover, Catalpa sapling at toe; invasive knotweed present ~5%	N	None	Y (Rock Toe)	N	N	None	N	Sand deposition at toe of bank	Y	Japanese knotweed now present
00 + 500	**20**	60	Y	None	NA	Bank completely covered in native vegetation; Willow stakes present; dead Sycamore with crack in trunk at top of slope is snapped in half; Elderberry ~30% cover	N	None	Y (Rock Toe)	N	N	None	N	Sand deposition at toe of bank	N	None
00 + 550	**21, 22**	50	N	Lower bank: ~30 degrees Upper bank: ~50 degrees	NA	Bank completely covered in native vegetation; Grasses ~90% cover, Elderberry ~30% cover, small Sycamore and Maples establishing at toe of slope, Catalpa sapling, Jewelweed and Curly Dock at toe	N	None	Y (Rock Toe)	N	N	None	N	Sand deposition at toe of bank	N	None
00 + 600	**23**	45	N	Lower bank: ~30 degrees Upper bank: ~45 degrees	NA	Bank completely covered in native vegetation; grasses are dominant, Sycamores at top of slope, Soft Rush, Nettle and Maples at toe	N	None	Y (Rock Toe)	N	N	None	N	Sand deposition at toe of bank	N	None
00 + 650	**24**	45	N	Lower bank: ~30 degrees Upper bank: ~45 degrees	NA	Bank completely covered in native vegetation; grasses ~80% cover, Soft Stem Bulrush, Mint, Catalpa, Sycamore sapling, small Maples at toe of slope	N	None	Y (Rock Toe)	N	N	No erosion control fabric or geocell visible. Animal path near rock toe extended up and down river	N	Sand deposition at toe of bank	N	None

Attachment C - Table 1
2023 Leaf-on 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	**25, 26, 27**	45	N	Lower bank: ~30 degrees Upper bank: ~45 degrees	NA	Bank completely covered in native vegetation; small Sycamores, Willows, and Maples at toe of slope, Nettle, grasses are dominant	N	None	Y (Rock Toe)	N	N	None	N	Silt/sand deposition at toe of bank	N	None
00 + 750	**28**	45	N	Lower bank: ~30 degrees Upper bank: ~45 degrees	NA	Bank completely covered in native vegetation; Trampled vegetation from walking path to river, grasses are dominant, along with Nightshade and Nettles, knotweed 3% cover, 5 large Sycamores on bank, Red Maples at toe	N	No at-risk trees present within remediated area	Y (Rock Toe)	N	N	Improvised access path present	N	None	N	None
00 + 1250	**29, 30**	20	N	Non-remediated upstream section: ~80 degrees Remediated section: ~20 degrees	H	Exposed roots just upstream of remediated bank; large patches of invasive knotweed present by rip rap edge upstream (~85% cover), Jewelweed ~15% cover, increased pedestrian access and a new rope swing chair hanging from Box Elder over water	Y	One large Box elder tree just upstream of remediated bank; scour present around roots	Y (Rock Toe)	NA	NA	Entirely rip rap portion of bank; remediation downstream	Y	Scour under box elder tree and upstream of remediated section	N	None
00 + 1300	**31**	20	Y	Fortified tributary channel	NA	Native vegetation established; invasive Japanese knotweed present ~80% cover along rip-rap, Jewelweed at ~20% cover, also present are Willows, Elderberry, and Sycamore saplings	N	None	Y (Rock Toe)	NA	NA	Entirely rip rap portion of bank	N	None	N	None
00 + 1350	**32**	50	Y	None	NA	Native herbaceous vegetation established; few woody shrubs; Box Elder dominant, Jewelweed and grasses are dominant ~90% cover, large Silver Maple at top of slope	N	None	Y (Rock Toe)	N	N	None	N	None	N	None
00 + 1400	**33, 34**	50	Y	None	NA	Native herbaceous vegetation established; Catalpa saplings present on slope, no knotweed, Curly Dock, Jewelweed and grasses are ~95% cover	N	None	Y (Rock Toe)	N	N	None	N	None	N	None
00 + 1450	**35, 36**	80	N	Lower bank: ~ 45 degrees Upper bank: ~80 degrees	NA	Native herbaceous vegetation establishing; mature Black Walnuts create canopy, grasses are dominant ~95% cover	N	None	Y (Rock Toe)	N	N	End of remediated section Rip rap fortified bank abutment intact	N	None	Y	Vegetation filling in and covering eroded bank and rock toe, no fabric exposed, no scouring observed
00 + 1500	**37**	90	Y	Bank heavily undercut downstream of remediation	H	Severe root exposure downstream of remediated bank; erosion is too severe for vegetation to establish around rock toe, vegetation established at top of slope is dominated by mature Black Walnuts, Sycamores, Honeysuckle bush, no knotweed present	Y	High density of at-risk trees downstream of remediated bank	NA	NA	NA	No fabric or geocell installed; downstream of remediation	Y	Heavy erosion present downstream of remediated BMA	N	None

Notes:

1. 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

2. 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)

3. 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)

4. 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)

5. 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)

6. 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

7. 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)

8. Grey shaded cells are portions of the bank that were not remediated

South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 1	Location: 00 – 20’

Date: 6/15/2023

Direction: Southeast

Description:

~20° bank angle; Non-remediated section directly upstream of remediation (2nd St. bridge pictured)

Invasive knotweed 50% cover; no fabric or geocell installed; Some scour associated with foot traffic along bank

Photo Number: 2	Location: 00 – 20’

Date: 6/15/2023

Direction: East

Description:

Downstream view from non-remediated section under 2nd St. overpass

South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 3	Location: 00 + 00'

Date: 6/15/2023

Direction: Southeast

Description:

Start of 1st remediation section

Herbaceous vegetation fully established; invasive ailanthus saplings, knotweed coverage ~5%; rock toe intact with sand deposition; geocell minimally exposed along upper bank

Photo Number: 4	Location: 00 + 00'

Date: 6/15/2023

Direction: East

Description:

Downstream view from beginning of remediated area

South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 5	Location: 00 + 50'

Date: 6/15/2023

Direction: Southeast

Description:

~50° bank angle

Native herbaceous vegetation fully established; woody vegetation adjacent to water; no at-risk trees present; rock toe intact; geocell minimally exposed; sand deposition along rock toe

Photo Number: 6	Location: 00 + 50'

Date: 6/15/2023

Direction: South

Description:

Geocell along upper bank is minimally exposed

South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 7	Location: 00 + 50’

Date: 6/15/2023

Direction: East

Description:

Downstream view of remediated bank

Photo Number: 8	Location: 00 + 100’

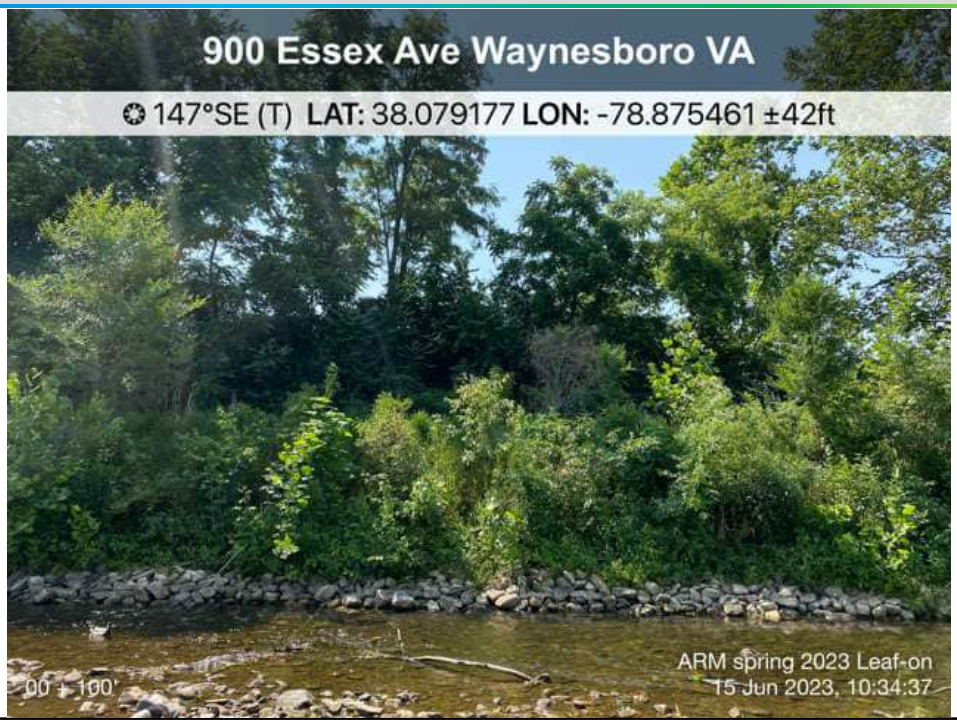
Date: 6/15/2023

Direction: Southeast

Description:

~50° bank angle

Native herbaceous vegetation fully established; no at-risk trees present; rock toe intact; geocell exposed



South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 9	Location: 00 + 100'

Date: 6/15/2023

Direction: South

Description:

Upstream view of beginning of remediated bank

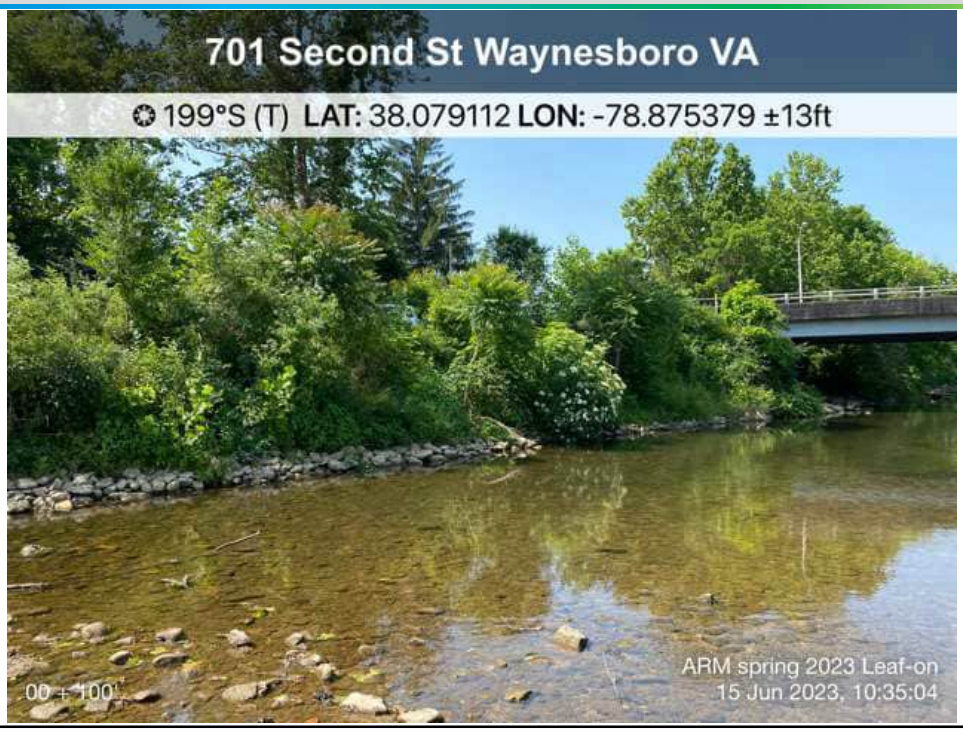


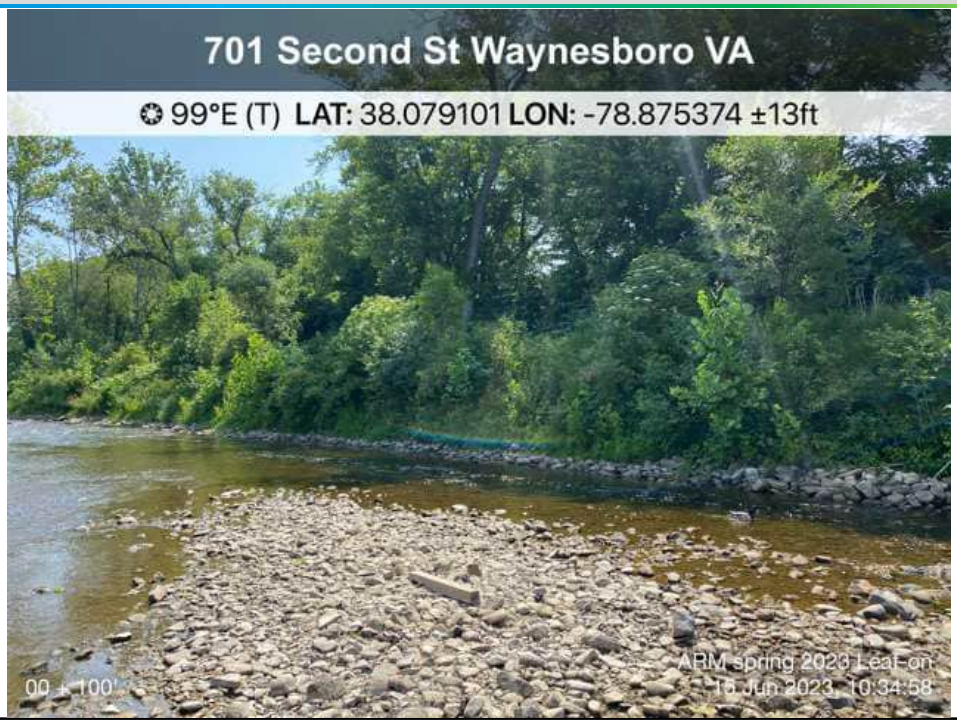
Photo Number: 10	Location: 00 + 100'

Date: 6/15/2023

Direction: East

Description:

Downstream view of remediated bank



South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 11	Location: 00 +150'

Date: 6/15/2023

Direction: Southeast

Description:

~50° bank angle

Native herbaceous vegetation fully established; no at-risk trees present; rock toe intact; geocell exposed

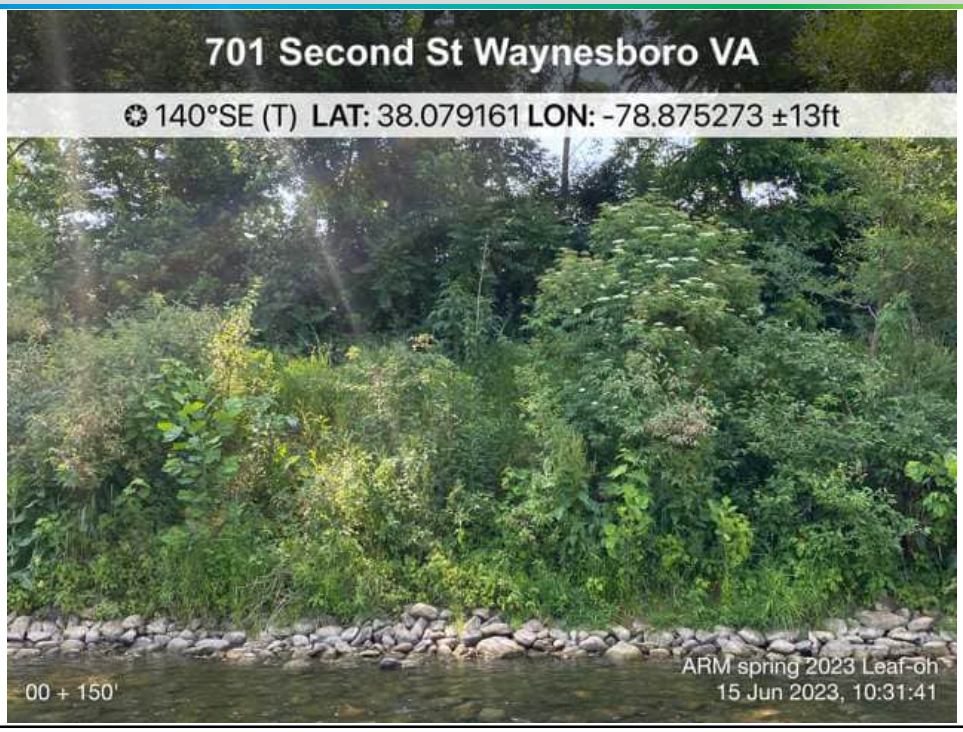


Photo Number: 12	Location: 00 + 200'

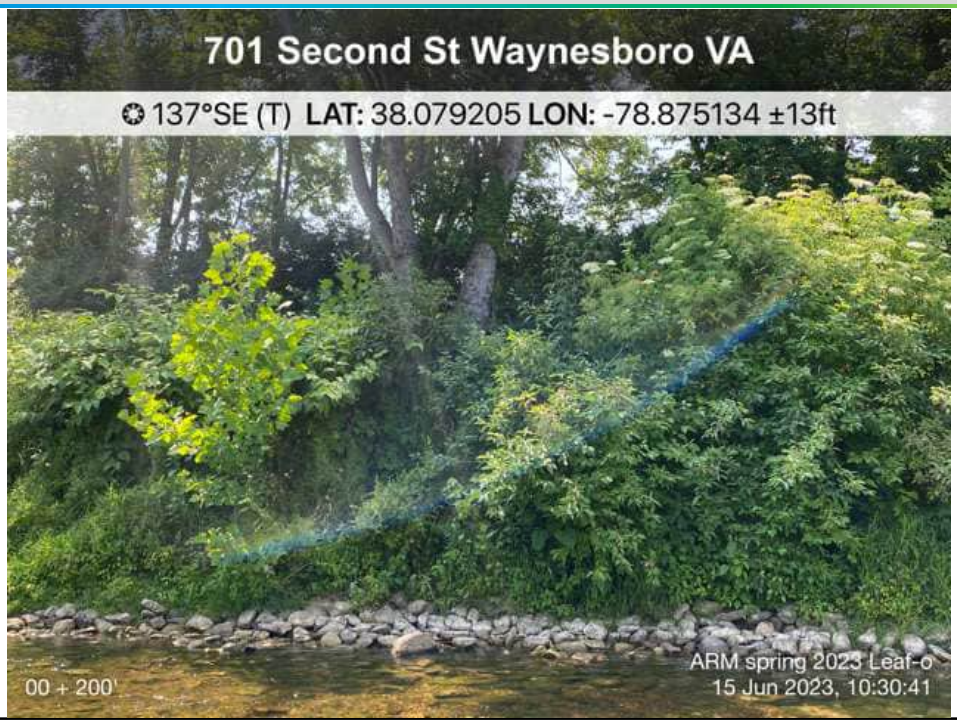
Date: 6/15/2023

Direction: Southeast

Description:

~50° bank angle

Native herbaceous vegetation fully established; Invasive knotweed present ~2%; no at-risk trees present; rock toe intact; sand deposition at toe of bank; geocell minimally exposed along upper bank



South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 13	Location: 00 + 250'

Date: 6/15/2023

Direction: Southeast

Description:

~50° bank angle

Native herbaceous vegetation fully established ~95% grass cover; one patch invasive Japanese knotweed ~2%; no at-risk trees present; rock toe intact; sand deposition at toe of bank; geocell minimally exposed

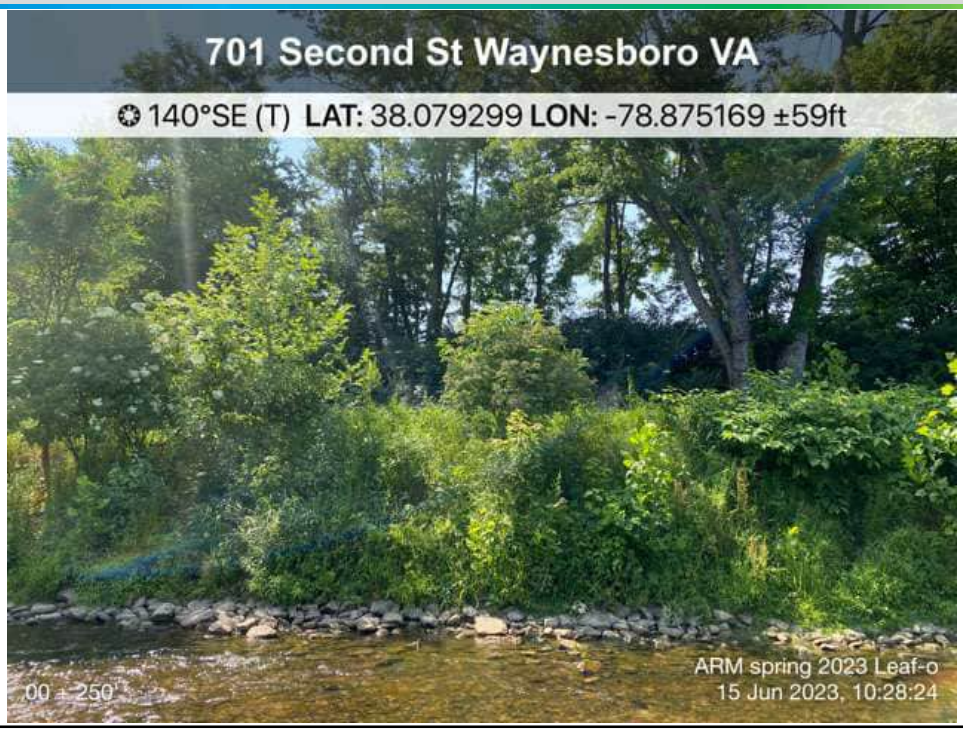


Photo Number: 14	Location: 00 + 300'

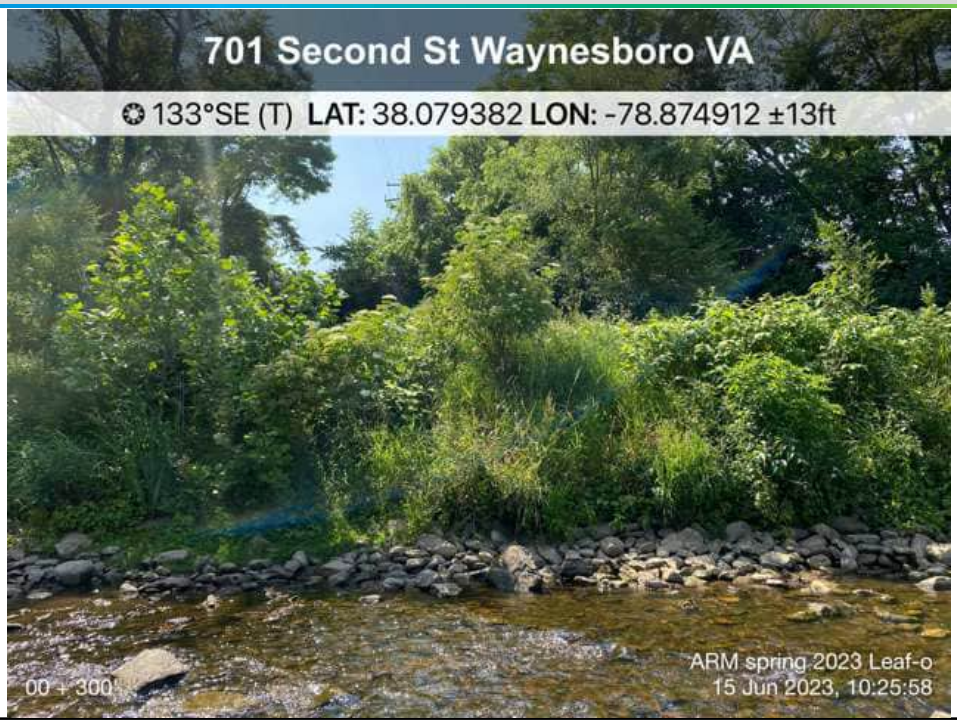
Date: 6/15/2023

Direction: Southeast

Description:

~50° bank angle

Native herbaceous vegetation fully established; grasses well established on bank toe; no at-risk trees present; rock toe intact; sand deposition at toe of bank; geocell minimally exposed



South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 15	Location: 00 + 300’

Date: 6/15/2023

Direction: East

Description:

Downstream view of remediated bank

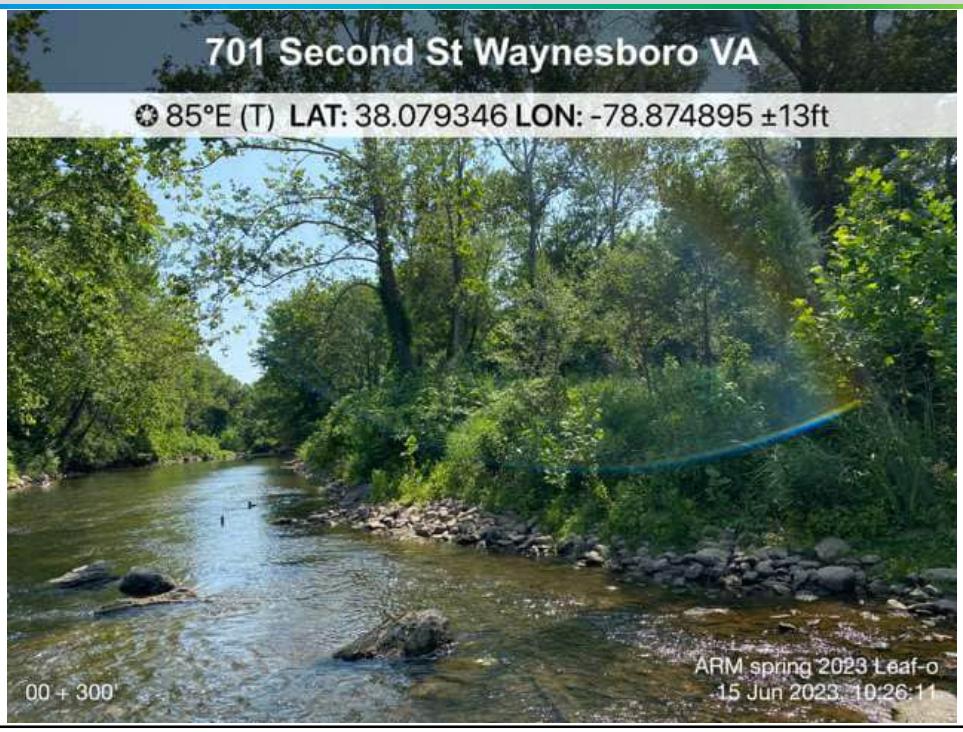


Photo Number: 16	Location: 00 + 350’

Date: 6/15/2023

Direction: Southeast

Description:

~50° bank angle

Native herbaceous vegetation fully established; no at-risk trees present; rock toe intact; sand deposition at toe of bank

South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 17	Location: 00 + 400'

Date: 6/15/2023

Direction: Southeast

Description:

~50° bank angle

Large patches of Japanese knotweed surrounding outfall ~35%; native herbaceous vegetation established; no at-risk trees present; rock toe intact; sand deposition at toe of bank; erosion control fabric exposed near outfall pipe

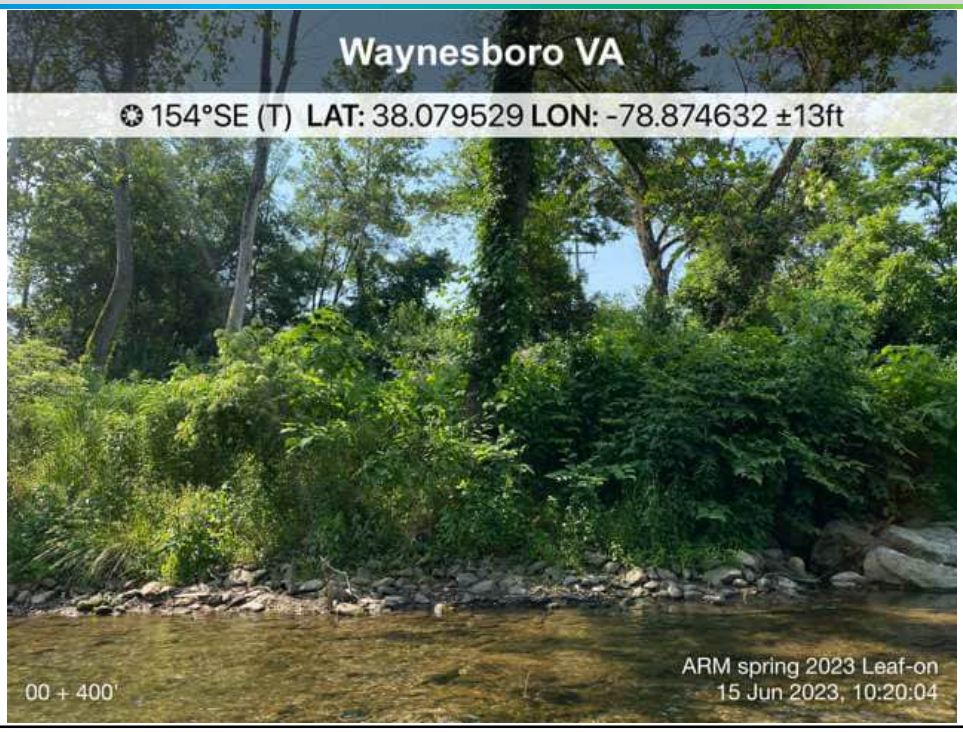


Photo Number: 18	Location: 00 + 450'

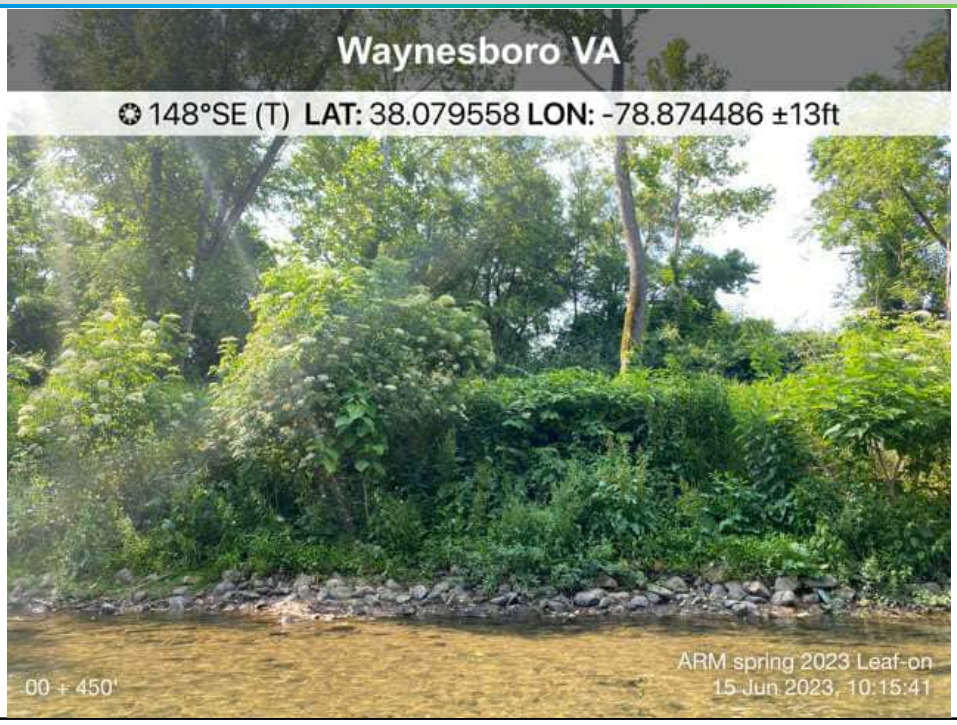
Date: 6/15/2023

Direction: Southeast

Description:

~60° bank angle

Native herbaceous vegetation fully established; Japanese knotweed coverage ~5%; no at-risk trees present; rock toe intact; sand deposition at toe of bank



South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 19	Location: 00 + 450'

Date: 6/15/2023

Direction: South

Description:

Upstream view of remediated bank

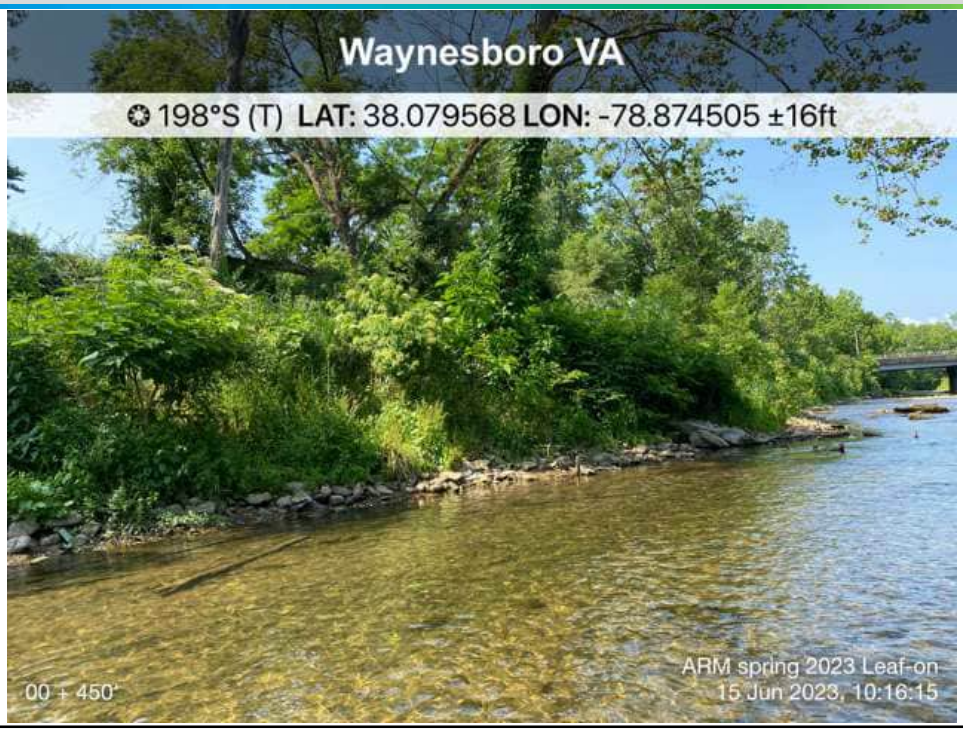


Photo Number: 20	Location: 00 + 500'

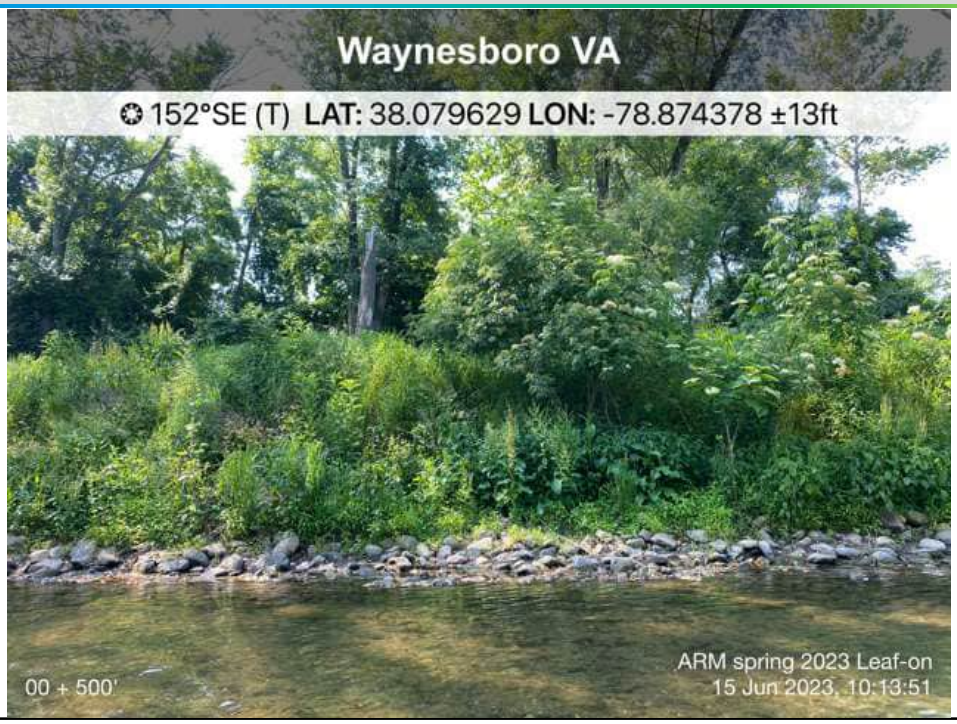
Date: 6/15/2023

Direction: Southeast

Description:

~60° bank angle

Native herbaceous vegetation is fully established; Elderberry coverage ~30%; no at-risk trees present; rock toe intact; sand deposition along rock toe



South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 21	Location: 00 + 550’

Date: 6/15/2023

Direction: Southeast

Description:

Lower bank ~30°
Upper bank ~50°

Native herbaceous vegetation fully established, grasses covering ~90%; no at-risk trees present; rock toe intact with sand deposition observed

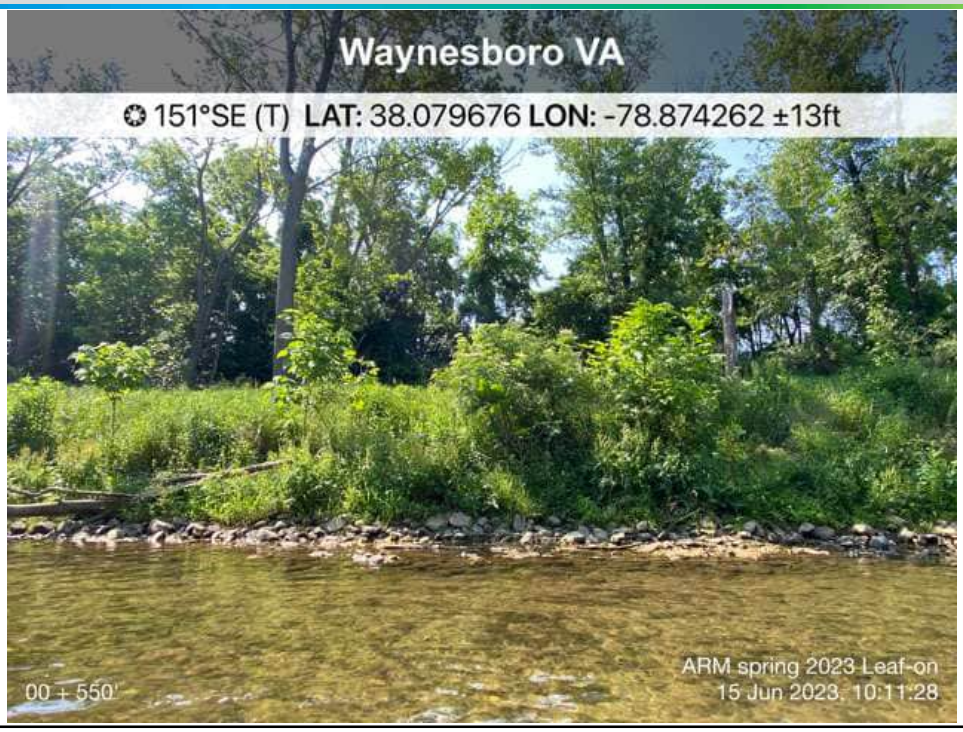


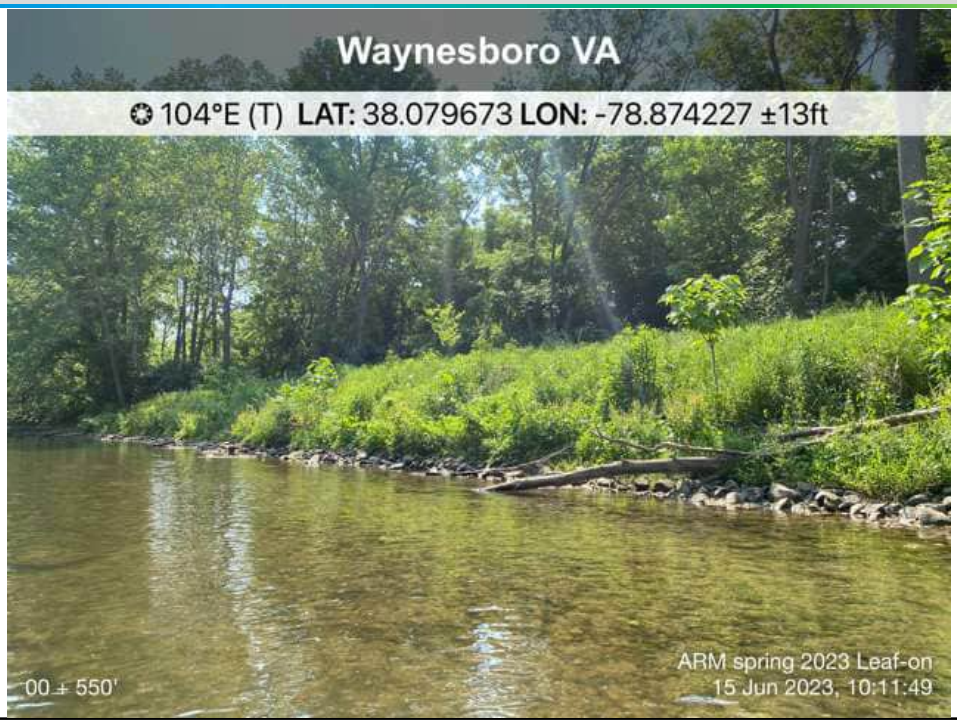
Photo Number: 22	Location: 00 + 550’

Date: 6/15/2023

Direction: East

Description:

Downstream view of remediated bank



South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 23	Location: 00 + 600'

Date: 6/15/2023

Direction: Southeast

Description:

Lower bank ~30°
Upper bank ~45°

Native herbaceous vegetation fully established; no at-risk trees present; rock toe intact; sand deposition at toe of bank

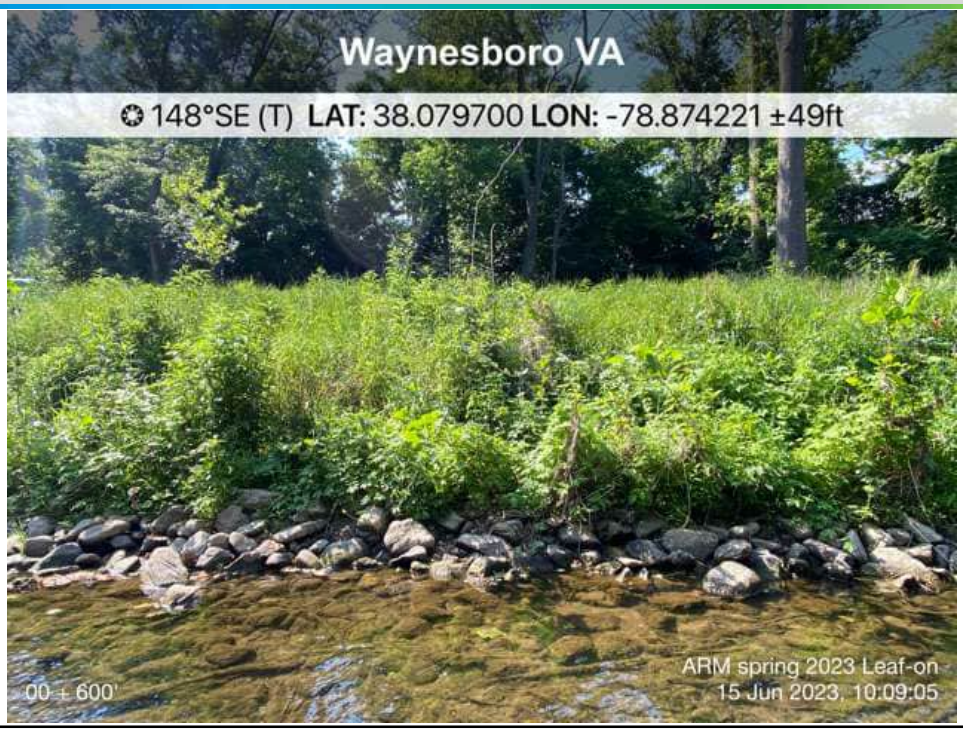


Photo Number: 24	Location: 00 + 650'

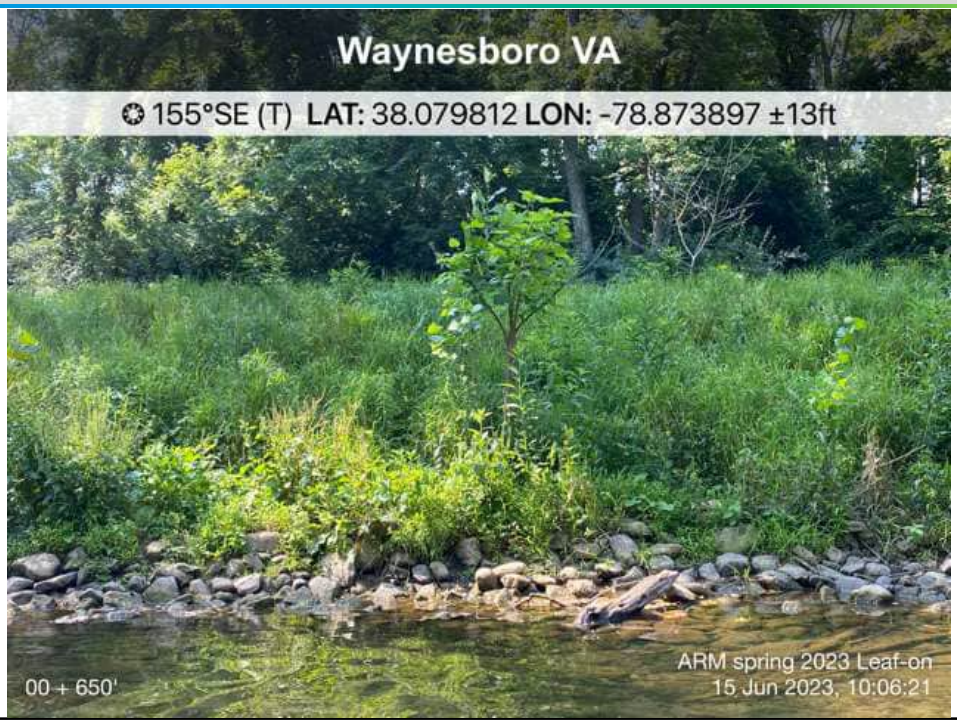
Date: 6/15/2023

Direction: Southeast

Description:

Lower bank ~30°
Upper bank ~45°

Native herbaceous vegetation fully established; no at-risk trees present; rock toe intact; sand deposition at toe of bank



South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 25	Location: 00 + 700'

Date: 6/15/2023

Direction: South

Description:

Lower bank ~30°
Upper bank ~45°

Native herbaceous vegetation fully established; no at-risk trees present; rock toe intact; sediment deposition in rock toe

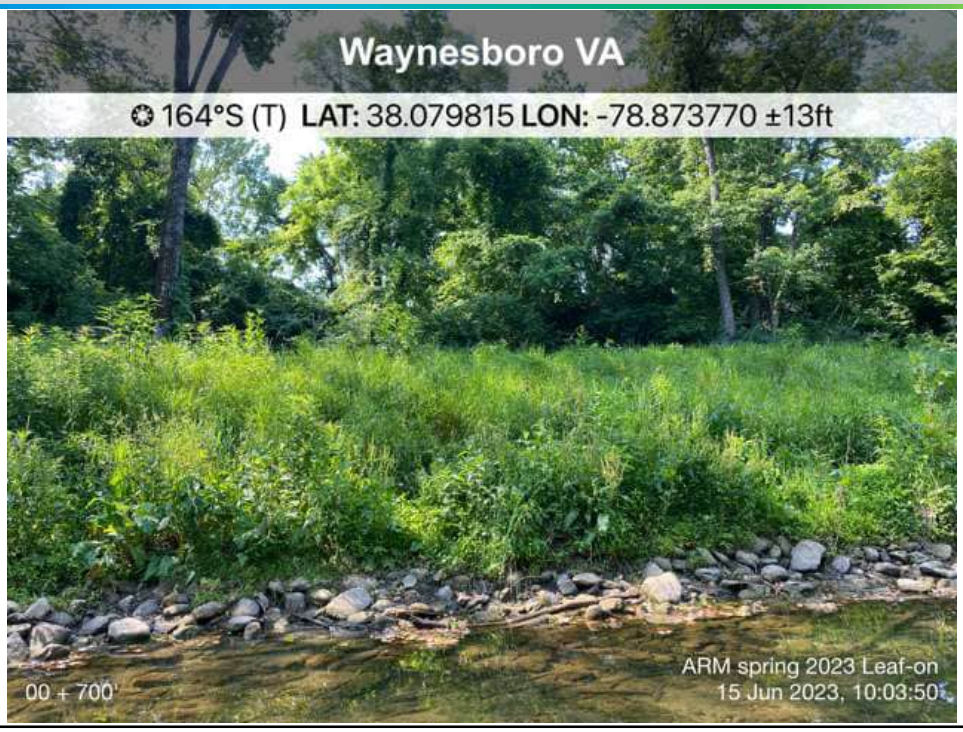


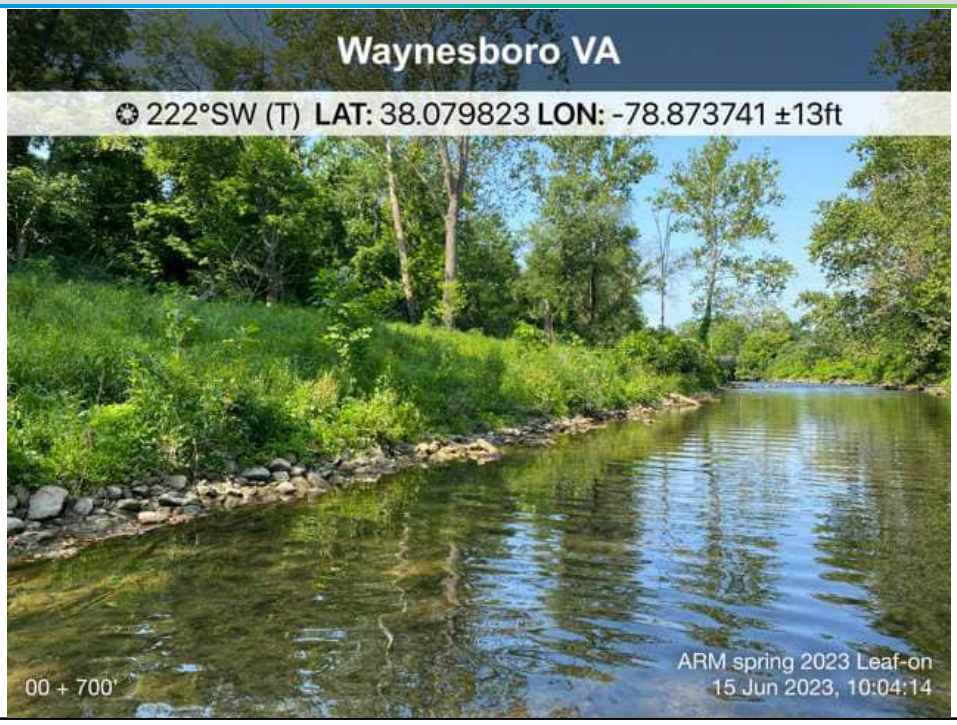
Photo Number: 26	Location: 00 + 700'

Date: 6/15/2023

Direction: Southwest

Description:

Upstream view of remediated bank



South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 27	Location: 00 + 700'

Date: 6/15/2023

Direction: East

Description:

Downstream view of the end of the first remediated section

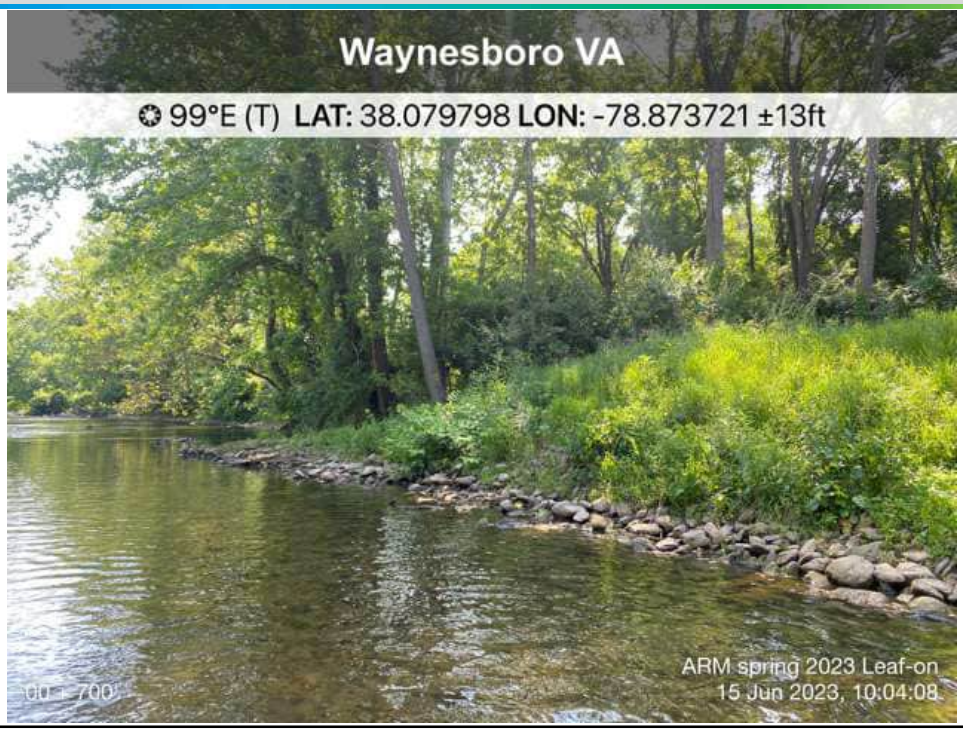


Photo Number: 28	Location: 00 + 750'

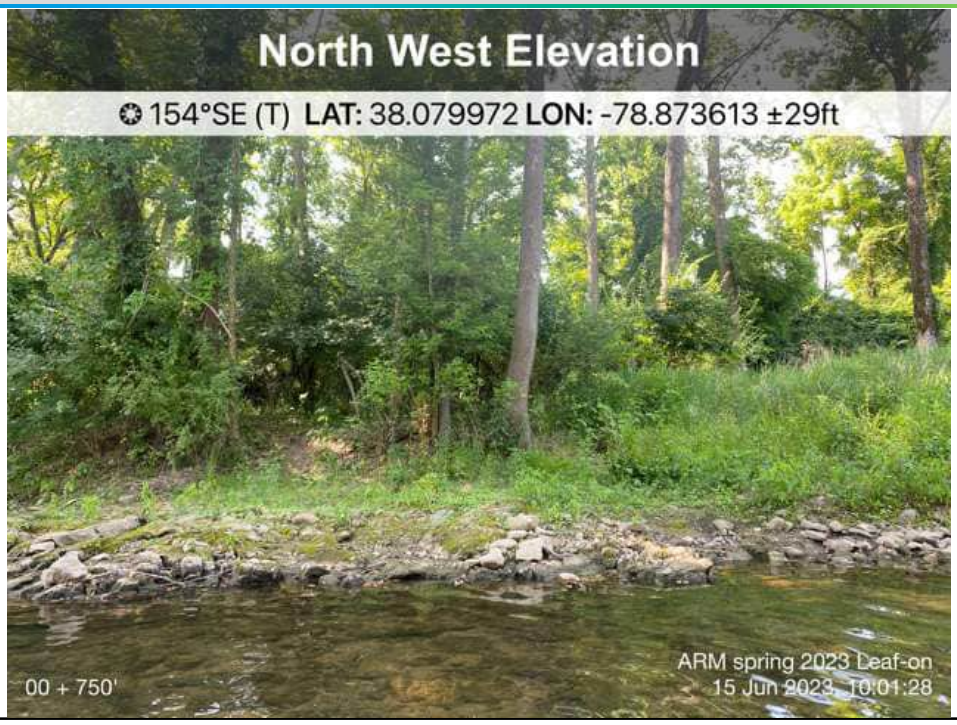
Date: 6/15/2023

Direction: Southeast

Description:

End of first remediated section; Lower bank ~30° Upper bank ~45°

Native herbaceous vegetation fully established; no at-risk trees in remediated area; rock toe intact; sand deposition at toe of bank; footpaths present



South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 29	Location: 00 + 1250'

Date: 6/15/2023

Direction: Southeast

Description:

Start of 2nd remediated section; bank angle non-remediated upstream section ~80;° remediated section ~20°; At-risk tree pictured with exposed roots just upstream of 2nd remediated section

Photo Number: 30	Location: 00 + 1250'

Date: 6/15/2023

Direction: East

Description:

Downstream view from beginning of second remediated area; entirely rip-rap portion of bank at start of second remediated section

South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 31	Location: 00 + 1300'

Date: 6/15/2023

Direction: Southeast

Description:

~20° bank angle;

Fortified tributary channel; entirely rip-rap portion of bank; large patches of invasive knotweed adjacent to rip rap channel

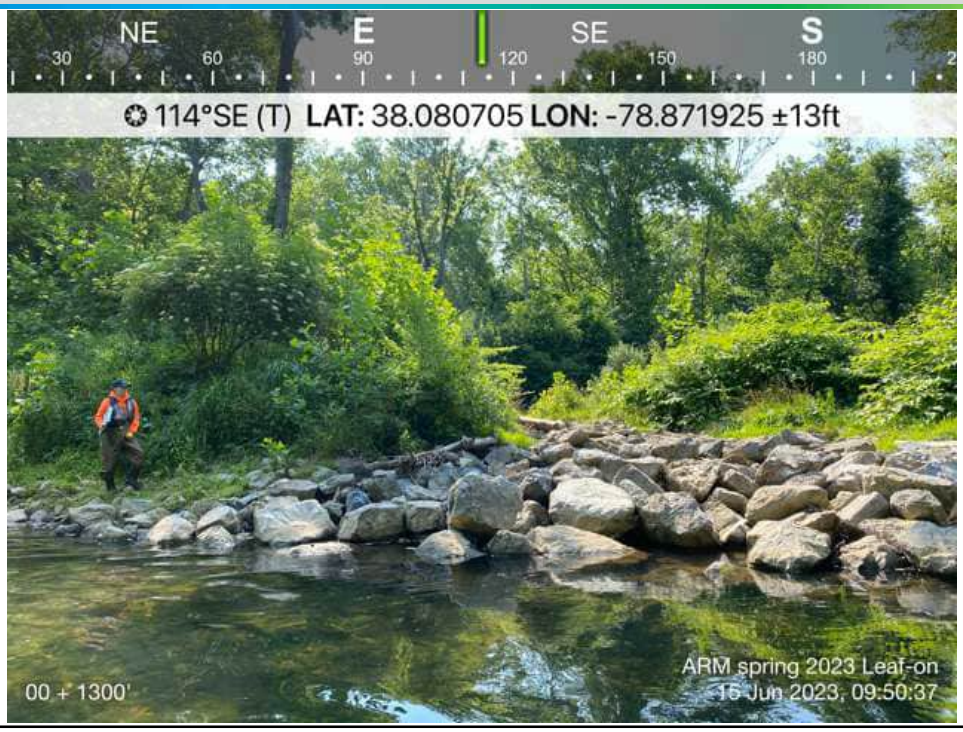


Photo Number: 32	Location: 00 + 1350'

Date: 6/15/2023

Direction: Southeast

Description:

~50° bank angle;

Native herbaceous vegetation fully established; no at-risk trees present; rock toe intact

South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 33	Location: 00 + 1400'

Date: 6/15/2023

Direction: East

Description:

~50° bank angle

Native herbaceous vegetation fully established; no at-risk trees present; rock toe intact

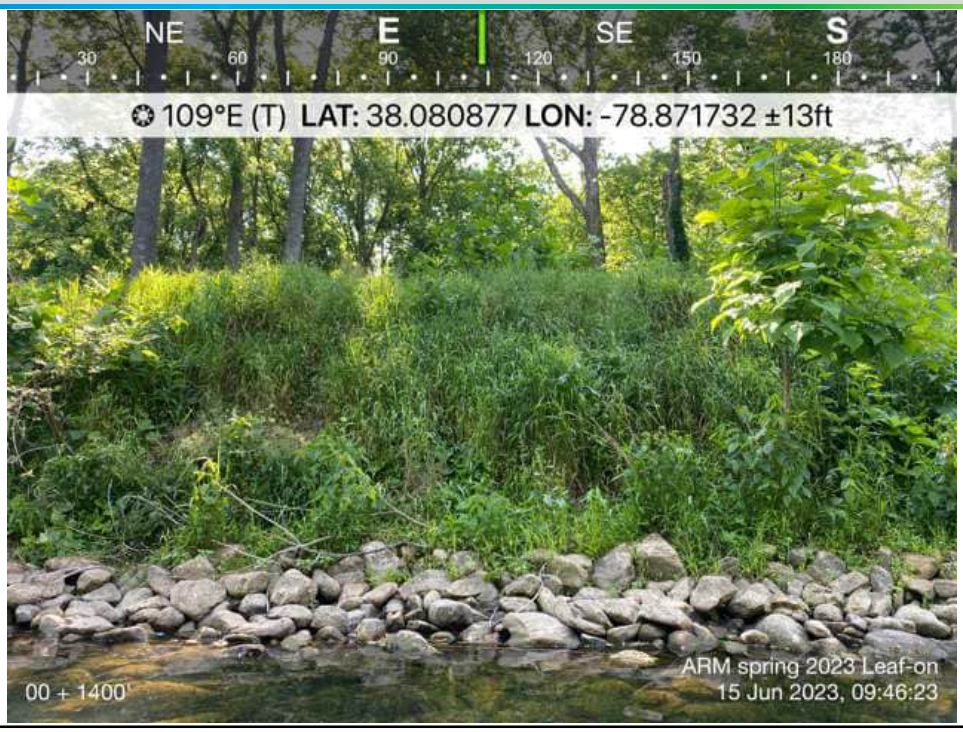


Photo Number: 34	Location: 00 + 1400'

Date: 6/15/2023

Direction: East

Description:

Downstream view of the end of remediated bank and start of non-remediated section

South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 35	Location: 00 + 1450'

Date: 6/15/2023

Direction: East

Description:

~80° bank angle; end of 2nd remediated section; rip-rap fortified bank abutment intact

Native herbaceous vegetation fully established and starting to grow in rip-rap section; heavy erosion present just downstream

Photo Number: 36	Location: 00 + 1450'

Date: 6/15/2023

Direction: East

Description:

Downstream view of end of 2nd remediated section; bank heavily undercut with severe root exposure; several at-risk trees present along top of bank

South River Photo Log

Attachment C

Allied Ready Mix BMA
2023 Leaf-on Inspection

Photo Number: 37	Location: 00 + 1500'

Date: 6/15/2023

Direction: Southeast

Description:

~90° bank angle

Non-remediated section downstream of BMA; severe erosion, root exposure, and undercutting present

Attachment C - Table 2
2023 Leaf-on Riparian Vegetation Plots
Allied Ready Mix BMA
Former DuPont Waynesboro Site, Area of Concern 4

Vegetative Species		Absolute % Cover[1]
Scientific Name	**Common Name**	**Spring**
Tree/Vine Stratum		
Acer saccharinum	Silver Maple	30-50
Celastrus orbiculatus	Oriental Bittersweet	0-15
Parthenocissus quinquefolia	Virginia Creeper	0-20
Platanus occidentalis	American Sycamore	0-5
Toxicodendron radicans	Poison Ivy	0-10
Sapling/Shrub Stratum		
Acer rubrum	Red Maple	0-15
Acer saccharinum	Silver Maple	1-15
Ailanthus altissima	Tree of Heaven	0-5
Betula nigra	River Birch	0-5
Cornus alba	Tatarian Dogwood	0-15
Cornus racemosa	Gray Dogwood	0-5
Elaeagnus umbellata	Autumn Olive	0-15
Lonicera japonica	Japanese Honeysuckle	0-5
Lonicera tatarica	Tatarian Honeysuckle	5-35
Physocarpus opufolius	Atlantic Ninebark	1-5
Platanus occidentalis	American Sycamore	0-20
Populus deltoides	Eastern Cottonwood	0-10
Prunus sp.	Cherry sp.	0-2
Rubus fruticosus	Blackberry	0-5
Rubus spp.	Raspberry	0-3
Salix nigra	Black Willow	0-20
Sambucus spp.	Elderberry	0-40
Ulmus pumila	Siberian Elm	0-5
Herbaceous Stratum		
Acer rubrum	Red Maple	0-5
Alliaria petiolata	Garlic Mustard	0-5
Amaranthus spinosus	Spiny Amaranth	0-2
Andropogon gerardii	Big Bluestem	2
Arctium minus	Lesser Burdock	2-25
Axonopus spp.	Carpet Grass	10-20
Carex sp.	Sedge sp.	0-3
Chasmanthium latifolium	Indian Woodoats	20-30
Cirsium sp.	Thistle sp.	0-1
Dichanthelium clandestinum	Deertongue Grass	1-5
Elymus riparius	Riverbank Wildrye	35-90
Eupatorium perfoliatum	Common Boneset	0-5
Eurybia divaricata	White Wood Aster	0-2
Eutrochium purpureum	Joe-Pye Weed	2
Fallopia japonica	Japanese Knotweed	60-70
Galium aparine	Bedstraw	3-40
Impatiens capensis	Jewelweed	5-15
Lepidium campestre	Field Pepperweed	0-1
Lespedeza thunbergii	Thunberg's Lespedeza	0-1
Microstegium vimineum	Japanese Stiltgrass	0-10

Attachment C - Table 2 (continued)
2023 Leaf-on Riparian Vegetation Plots
Allied Ready Mix BMA
Former DuPont Waynesboro Site, Area of Concern 4

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

Notes:
1. Represents the range observed between two riparian vegetative survey plots per short-term monitoring station.

Attachment C - Waynesboro Off-Site Cap Areas

2023 Leaf-on Inspection Record Sheet
Maintenance Plan

Location and property owner name: **Allied Ready Mix BMA**		
Item	**Status/Maintenance Needs**	**Repairs Needed?**
Access Roads	In good condition.	1
Trails	Some improvised civilian pathways present near the far upstream and downstream portions of the BMA do not appear to be degrading bank stability.	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	Vegetation has nearly fully established with minimal patches of bare soil. Foot traffic appears to hamper growth in isolated areas. Total Japanese knotweed absolute % cover across the BMA is estimated at 15%. Recommended herbicide treatment for summer/early fall.	2
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:

- AECOM will continue to monitor geocell exposure in the fall 2023.
- AECOM recommends herbicide treatment of Japanese knotweed in late summer/early fall.

Inspected by: Richard Judge and Kimberly Brogan Date: 06/15/2023

Attachment D
Shiloh Baptist Church BMA

Attachment D - Table 1
2023 Leaf-on 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 Visible (Y/N)[6]	Erosion Control Fabric Visible (Y/N)[6]	Notes	Scour Present (Y/N)[7]	Notes	Y/N	Notes
00 - 25	**1**	30	Y	None	M	Significant vegetation, exposed roots along bank; Slippery Elm; Sycamores; invasive Knotweed ~35%; Access pathways present	Y	Large Sycamore dying	N	NA	NA	Upstream of remediation	Y	Minimal scour present	N	None
00 + 00	**2, 3**	30	Y	None	NA	Significant vegetation established; invasive Knotweed ~50% cover	N	Sycamore upstream dying	Y (Rock Toe)	N	N	No geocell visible; culvert just upstream of remediation in fair condition but completely covered by knotweed	N	Sediment deposition in rock toe	N	None
00 + 50	**4, 5**	65	Y	None	NA	Herbaceous vegetation is well established; invasive Japanese knotweed present ~10%	N	None	Y (Rock Toe)	N	N	None	N	Sediment deposition in rock toe	N	None
00 + 100	**6, 7 , 8**	50	N	Lower bank: ~40 degrees Upper bank: ~60 degrees	NA	Herbaceous vegetation fully established (grasses are dominant); Jewelweed and Elms at toe, Elms have foliage holes but have grown, no invasive vegetation	N	None	Y (Rock Toe)	N	N	None	N	Sediment deposition in rock toe	N	None
00 + 150	**9, 10, 11**	50	N	Lower bank: ~40 degrees Upper bank: ~60 degrees Above greenway: ~60 degrees	NA	Herbaceous vegetation establishing; jewelweed, elms establishing; large patches of knotweed on bank above greenway	N	Elm trees lacking foliage	Y (Rock Toe)	N	N	None	N	Sediment deposition in rock toe	N	None
00 + 200	**12**	65	N	Lower bank: ~40 degrees Upper bank: ~60 degrees Above greenway: ~70 degrees	NA	Herbaceous vegetation establishing; herbaceous vegetation establishing above greenway; Maples, Elms, Oaks, and Catalpa saplings and Jewelweed growing around and in rock toe	N	None	Y (Rock Toe)	N	N	Greenway is in good condition and has been paved since Spring 2021, corrugated drain pipe in good condition	N	Sediment deposition in rock toe	N	None
00 + 250	**13, 14, 15**	55	N	Lower bank: ~45 degrees Upper bank: ~65 degrees Above greenway: ~70 degrees	NA	Herbaceous vegetation establishing; planted shrubs intact; footpath present; invasive knotweed establishing in rock toe ~15%	N	No trees adjacent to edge of water.	Y (Extensive Rock Toe)	N	N	Corrugated drainage pipe in good condition	N	Sediment deposition in rock toe	N	None
00 + 300	**16, 17**	65	N	Lower bank: ~45 degrees Upper bank: ~80 degrees Above greenway: ~70 degrees	NA	Herbaceous vegetation establishing; invasive princess tree growing quickly; grasses dominant above rock toe; planted saplings and shrubs intact; knotweed establishing in rock toe: ~20% cover. Barren at top due to foot traffic	N	New large princess trees	Y (Rock Toe)	Y	N	Exposed geocell on slope above greenway path	N	Sediment deposition in rock toe	Y	Invasive princess tree growing quickly, increased Japanese knotweed cover
00 + 350	**18**	50	N	Lower bank: ~35 degrees Upper bank: ~70 degrees	NA	Grasses establishing around culvert; grasses are dominant, Jewelweed, Elderberry, Sycamore, Silver Maple, Virginia Creeper and Elms also present, Japanese knotweed ~10% cover	N	One tree down due to possible beaver activity	Y (Rock Toe)	N	N	Large plastic corrugated pipe and Armor flex mat in good condition. Geocell partially exposed near greenway path	N	Sediment deposits at 00+325'; no scour	N	None
00 + 400	**19, 20**	50	N	Lower bank: ~45 degrees Upper bank: ~50 degrees	NA	Dense herbaceous vegetation established, saplings and shrub plantings established; Pokeberry, dying Black Walnut, Box Elder, Sycamore saplings, minimal Japanese knotweed cover	N	Increased vegetation overall especially on restored bank	Y (Rock Toe)	N	N	None	N	Sediment deposition in rock toe	N	Increased grass coverage in rock toe
00 + 450	**21, 22**	50	N	Lower bank: ~45 degrees Upper bank: ~55 degrees	NA	Dense herbaceous vegetation established; Saplings and shrub plantings intact and established; Grasses are dominant; Elderberry is dominant in shrub stratum; invasive Princess trees present	N	None	Y (Rock Toe)	N	N	None	N	Sediment deposition in rock toe	N	None
00 + 500	**23, 24, 25**	55	N	Lower bank: ~45 degrees Upper bank: ~65 degrees	NA	Dense herbaceous vegetation established; Saplings and shrub plantings intact and establishing; Elderberry ~10% cover, Thistle ~30% cover, invasive Knotweed ~30% cover	N	Increased vegetation overall especially on restored bank; footpath present	Y (Rock Toe)	N	Y	Erosion control fabric visible by rip rap along upper bank	N	Sediment deposition in rock toe	Y	Increased vegetative establishement around repaired segment of upper bank
00 + 550	**26, 27, 28**	65	N	Lower bank: ~60 degrees Upper bank: ~70 degrees	NA	Jewelweed at toe of slope; bank failed in 2020 and was repaired and replanted with grass mix which is now well established, footpath present	N	None	Y (Rock Toe)	N	N	Exposed fabric along greenway trail	N	Sediment deposition in rock toe	Y	Increased vegetative establishement around repaired segment of upper bank; slight subsidence
00 + 600	**29, 30**	55	Y	None	NA	Jewelweed at toe of slope; Bank failed in 2020 - re-seeded section now has well-established grasses and herbaceous vegetation	N	Possible Sycamore at future risk adjacent to edge of water	Y (Rock Toe)	Y	N	Geocell exposed on bare soil at top of restored bank	N	Sediment deposition in rock toe	Y	Grass established; increased overall vegetation; slight subsidence around guardrail posts
00 + 650	**31, 32, 33**	65	N	Lower bank: ~60 degrees Upper bank: ~70 degrees	NA	Herbaceous vegetation established with few patches of bare soil, footpath established; saplings and shrub plantings establishing; sparse Japanese knotweed present in rock toe; Jewelweed and grasses dominant; princess tree present	Y	Sycamore potentially at risk; animal burrows present beneath tree	Y (Rock Toe)	N	N	None	N	Sediment deposition in rock toe; patches of bare soil present above rock toe	N	None

Attachment D - Table 1
2023 Leaf-on 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 Visible (Y/N)[6]	Erosion Control Fabric Visible (Y/N)[6]	Notes	Scour Present (Y/N)[7]	Notes	Y/N	Notes
00 + 700	**34, 35, 36**	50	N	Lower bank: ~45 degrees Upper bank: ~65 degrees	NA	Herbaceous vegetation established; suplings and shrub plantings intact and established; Jewelweed and grasses dominant, ~1% Honeysuckle cover, Locust saplings, small patches of exposed soil	N	None	Y (Rock Toe)	N	N	Patches of bare soil present above rock toe	Y	Sediment deposition in rock toe	Y	Revised bank angles
00 + 750	**37**	60	Y	None	NA	Dense herbaceous vegetation established; grasses are dominant ~95% cover; large Sycamore, Jewelweed and Elderberry; saplings and shrub plantings are established	N	Possible Sycamore at future risk, adjacent to edge of water, animal burrows under trunk	Y (Rock Toe)	N	N	None	N	Sediment deposition in rock toe	N	None
00 + 800	**38**	65	Y	None	NA	Dense herbaceous vegetation is well established; grasses are dominant; Jewelweed ~25% cover	N	None	Y (Rock Toe)	N	N	None	N	Sediment deposition in rock toe	N	None
00 + 850	**39**	75	Y	None	NA	Dense herbaceous vegetation established; grasses are dominant; Elms, Honeysuckle, Goldenrod, Pokeberry, Elderberry, Jewelweed well established in rock toe; overall vegetation very well established	N	None	Y (Rock Toe)	N	N	None	N	Sediment deposition in rock toe	N	None
00 + 900	**40**	70	Y	None	NA	Dense herbaceous vegetation established; grasses are ~95% cover; two large Black Walnuts: one is dying, Locust sapling, Pokeberry, Jewelweed at toe	N	None	Y (Rock Toe)	N	N	None	N	Sediment deposition in rock toe	N	None
00 + 950	**41**	65	N	Lower bank: ~70 degrees Upper bank: ~60 degrees	NA	Dense herbaceous vegetation established; grasses are dominant; Jewelweed, Pokeweed, large Black Walnut, Silver Maple, sparse Japanese knotweed in rock toe	N	None	Y (Rock Toe)	N	N	None	N	None	N	None
00 + 975	**42, 43, 44**	60	Y	End of remediation; new rip rap along upper bank	NA	Dense herbaceous vegetation established; non-remediated area has established vegetative cover- Sycamore saplings, Chokeberry, Boneset, Honeysuckle, grasses are dominant, no Knotweed	Y	Exposed roots and at-risk trees present downstream of remediation	Y (Rock Toe)	N	N	Cobble rip rap along upper bank in good condition	N	Sediment deposition in rock toe	N	None
Greenway & Shiloh Baptist Church Parking Lot	**47, 48, 49**	60	Y	None	NA	No exposed roots around parking lot; shrubs, herbaceous vegetation, and grasses growing around perimeter and are being maintained; significant Japanese knotweed cover	N	No trees around perimeter of parking lot	NA	Y (above greenway)	NA	Parking lot in good condition	N	None	Y	Increased erosion of slope above greenway with exposed geocell; no exposed soil around pipes; new wooden fence present along greenway path

Notes:

1. 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

2. 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)

3. 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)

4. 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)

5. 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)

6. 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

7. 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)

8. Grey shaded cells are portions of the bank that were not remediated

9. Greenway extension is under construction above remediated bank causing rocks and bare soil to become exposed. This also led to fabric and geocell exposure in areas where they are not yet degraded.

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 1	Location: 00 – 25’

Date: 6/14/2023

Direction: West

Description:

~30° bank angle

Some vegetation; exposed roots along bank; access pathways present; invasive knotweed 35% cover; small sycamore at-risk; minimal scour present

Photo Number: 2	Location: 00 + 00’

Date: 6/14/2023

Direction: West

Description:

~45° bank angle

Invasive knotweed 50% cover; top half of slippery elm adjacent to river upstream is dead; culvert just upstream of remediation in fair condition; evidence of sediment deposition in rock toe

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 3	Location: 00 + 00’

Date: 6/14/2023

Direction: Northwest

Description:

Downstream view of the remediated bank from the start of the BMA

New wooden railing (pictured) along the greenway path was installed since the previous Leaf-on inspection

Photo Number: 4	Location: 00 + 50’

Date: 6/14/2023

Direction: West

Description:

~ 65° bank angle; minimal grasses established; vegetation 95% cover; sycamore sapling and several Elm saplings establishing; rock toe intact; evidence of sediment deposition in rock toe

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 5	Location: 00 + 50'

Date: 6/14/2023

Direction: Southwest

Description:

Upstream view of remediated bank

Photo Number: 6	Location: 00 + 100'

Date: 6/14/2023

Direction: West

Description:

Lower bank ~40°; Upper bank ~60°

Vegetation ~95% cover; several elm saplings have grown but have foliage holes; rock toe intact; sediment deposition in rock toe

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 7	Location: 00 + 100’

Date: 6/14/2023

Direction: Southwest

Description:

Upstream view of remediated bank upper reach

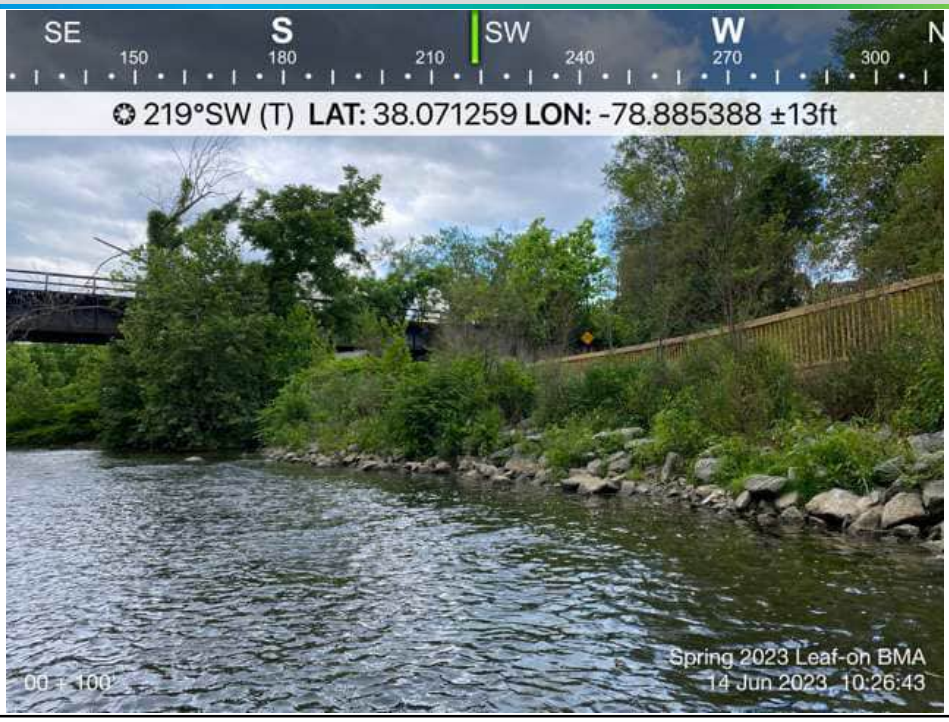


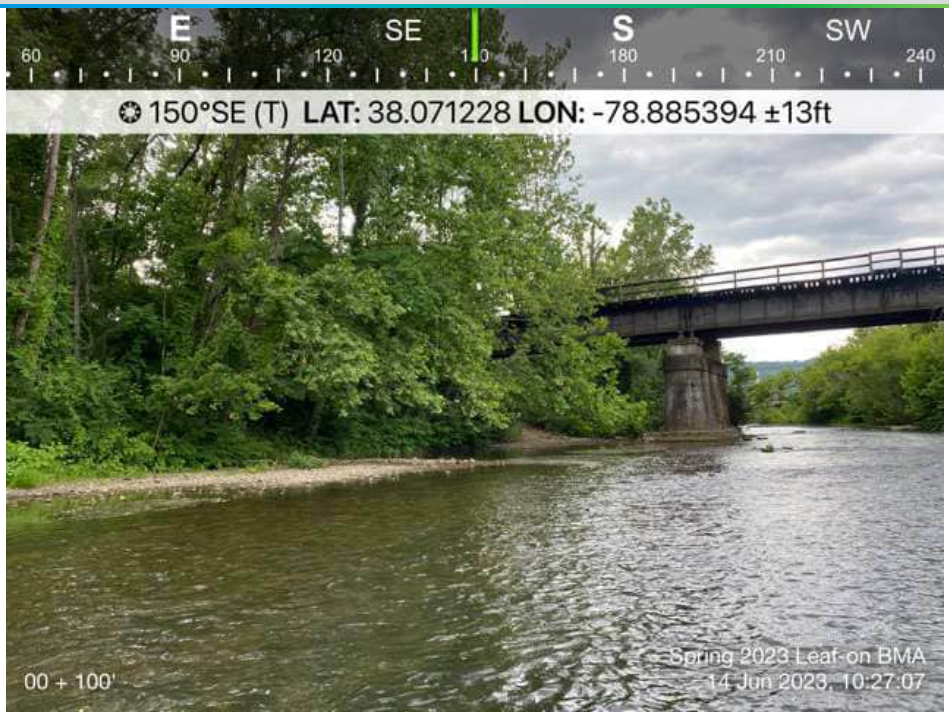
Photo Number: 8	Location: 00 + 100’

Date: 6/14/2023

Direction: Southeast

Description:

View of opposite bank



South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 9	Location: 00 + 150’

Date: 6/14/2023

Direction: West

Description:

Lower bank ~40°;
Upper bank ~60°;
Above GW ~60°

Large patches of knotweed completely cover bank above greenway; vegetation 95% cover; sediment deposition in rock toe

Photo Number: 10	Location: 00 + 150’

Date: 6/14/2023

Direction: North

Description:

Downstream view of remediated bank

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 11	Location: 00 + 150'

Date: 6/14/2023

Direction: West

Description:

Footpath present running down the bank with trampled vegetation

Photo Number: 12	Location: 00 + 200'

Date: 6/14/2023

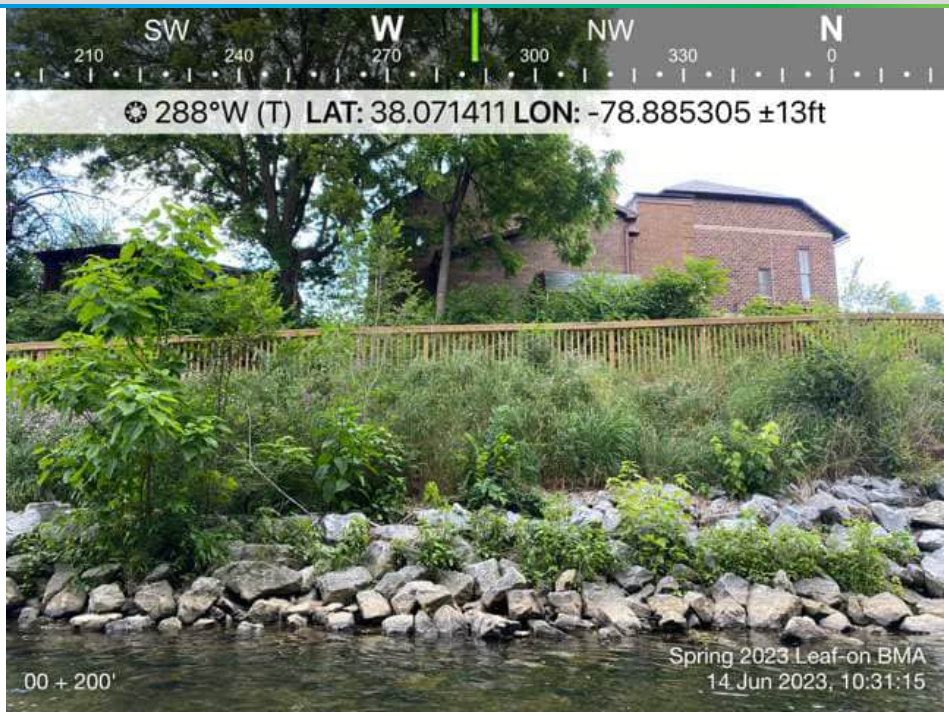
Direction: West

Description:

Lower bank ~40°; Upper bank ~60°; Above GW ~70°

Vegetation ~95% cover; maple and elm saplings adjacent to edge of water; rock toe intact; evidence of sediment deposition in rock toe

Corrugated drain pipe remains in good condition



South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 13	Location: 00 + 250'

Date: 6/14/2023

Direction: West

Description:

Lower bank ~45°; Upper bank ~65°; Above GW ~70°

Vegetation ~95% cover; invasive knotweed coverage expanding in rock toe; corrugated drain pipe remains intact

Photo Number: 14	Location: 00 + 250'

Date: 6/14/2023

Direction: Southwest

Description:

Upstream view of remediated bank

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 15	Location: 00 + 250′

Date: 6/14/2023

Direction: North

Description:

Downstream view of remediated bank; Invasive Japanese knotweed and princess trees pictured

Photo Number: 16	Location: 00 + 300′

Date: 6/14/2023

Direction: West

Description:

Lower bank ~45°; Upper bank ~80°; Above GW ~70°

Vegetation ~90% cover; invasive knotweed expanded to ~20% cover; drainage pipe between 00+250′ and +300′ beneath greenway remains in good condition

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 17	Location: 00 + 300'

Date: 6/14/2023

Direction: North

Description:

Downstream view of remediated bank

Photo Number: 18	Location: 00 + 350'

Date: 6/14/2023

Direction: West

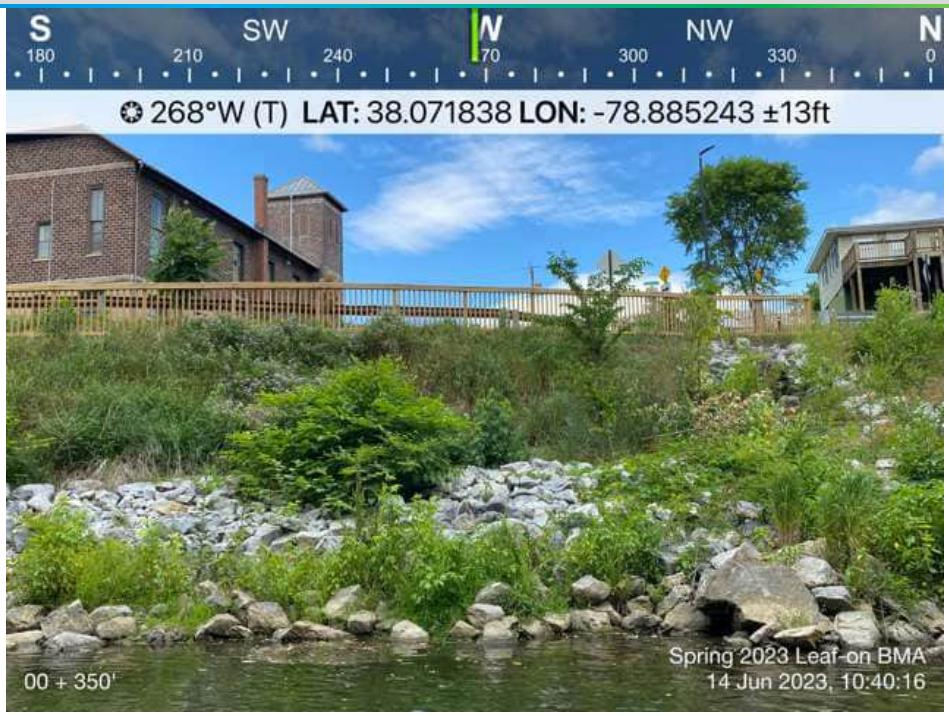
Description:

~65° bank angle

Vegetation ~95% cover; small patch of invasive knotweed ~10% cover

Large plastic corrugated pipe and Armorflex mat below outfall in good condition

Geocell is minimally exposed on upper bank beside greenway path



South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 19	Location: 00 + 400’

Date: 6/14/2023

Direction: West

Description:

Lower bank ~45°; Upper bank ~50°

Vegetation more fully established ~95% cover; sediment deposition along rock toe with thick mats of grasses growing

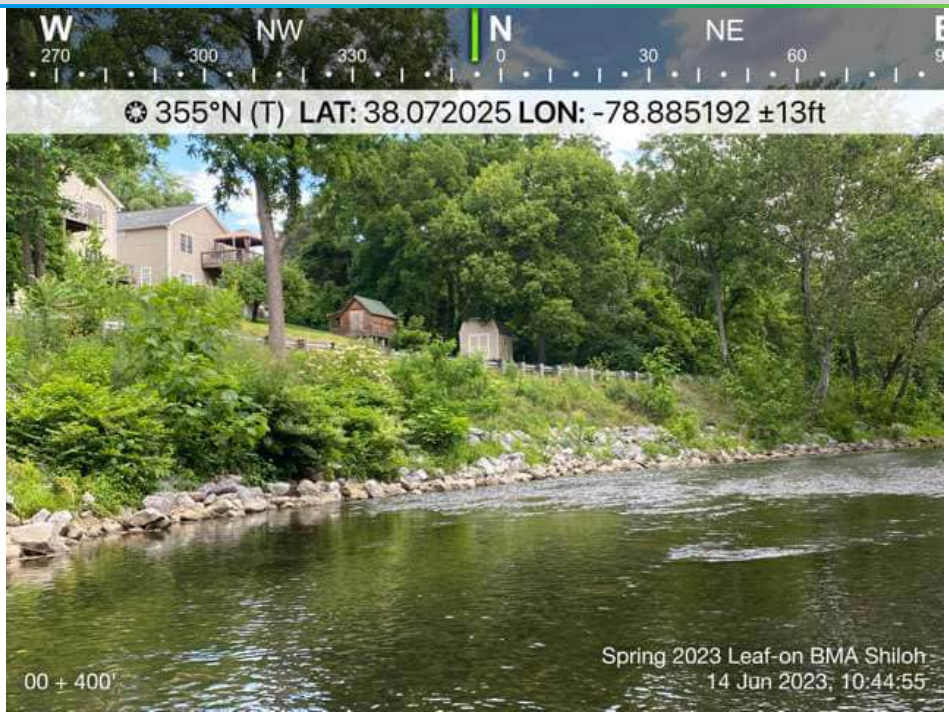
Photo Number: 20	Location: 00 + 400’

Date: 6/14/2023

Direction: North

Description:

Downstream view of remediated bank and transitional pool–riffle reach of the river



South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 21	Location: 00 + 450’

Date: 6/14/2023

Direction: West

Description:

Lower bank ~45°; Upper bank ~55°

Vegetation 95% cover; invasive princess tree growing in rock toe; sediment deposition present along rock toe with thick mats of grasses growing

Photo Number: 22	Location: 00 + 450’

Date: 6/14/2023

Direction: North

Description:

Downstream view of remediated bank, including the restored section of bank at 00+550’ where grasses have re-colonized

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 23	Location: 00 + 500'

Date: 6/14/2023

Direction: Northwest

Description:

Lower bank; ~45°; Upper bank; ~65°

Vegetation ~70% cover; invasive knotweed ~30% cover; no at-risk trees present; rip-rap and erosion control fabric added to upper bank damaged by construction

Photo Number: 24	Location: 00 + 500'

Date: 6/14/2023

Direction: Southwest

Description:

Upstream view of remediated bank

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 25	Location: 00 + 500’

Date: 6/14/2023

Direction: Northwest

Description:

Small patch of exposed soil located above rock toe

Photo Number: 26	Location: 00 + 550’

Date: 6/14/2023

Direction: West

Description:

Lower bank; ~60°;
Upper bank; ~70°

Reseeded grasses have fully established on restored bank section; vegetation 90% cover; repaired upper bank intact; rock toe intact

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 27	Location: 00 + 550’

Date: 6/14/2023

Direction: North

Description:

Downstream view of remediated bank

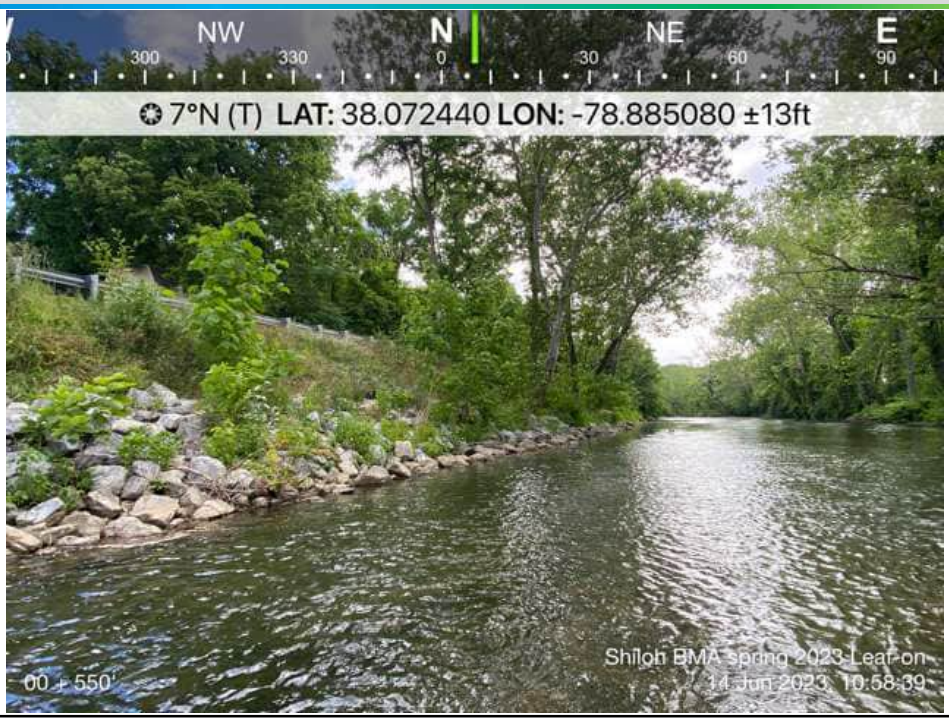


Photo Number: 28	Location: 00 + 550’

Date: 6/14/2023

Direction: Northeast

Description:

View looking down the recently paved greenway path above the repaired section of upper bank

Native herbaceous vegetation is mostly well established

Guardrail recently installed has slight ground subsidence around vertical posts but remains secure

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 29	Location: 00 + 600’

Date: 6/14/2023

Direction: West

Description:

~55° bank angle

Reseeded grasses are well established on restored bank section; vegetation ~85% cover, geocell and soil are slightly exposed along the top of the restored bank area

Photo Number: 30	Location: 00 + 600’

Date: 6/14/2023

Direction: East

Description:

Minor ground subsidence observed around vertical guardrail post next to greenway trail

Guardrail remains secure and intact

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 31	Location: 00 + 650'

Date: 6/14/2023

Direction: Northwest

Description:

Downstream of the repaired section; Lower bank ~60°; Upper bank ~70°

Herbaceous vegetation mostly established: ~75% cover; bank 25% exposed; large sycamore potentially at-risk with animal burrow beneath

Erosional rill (shallow trench) observed

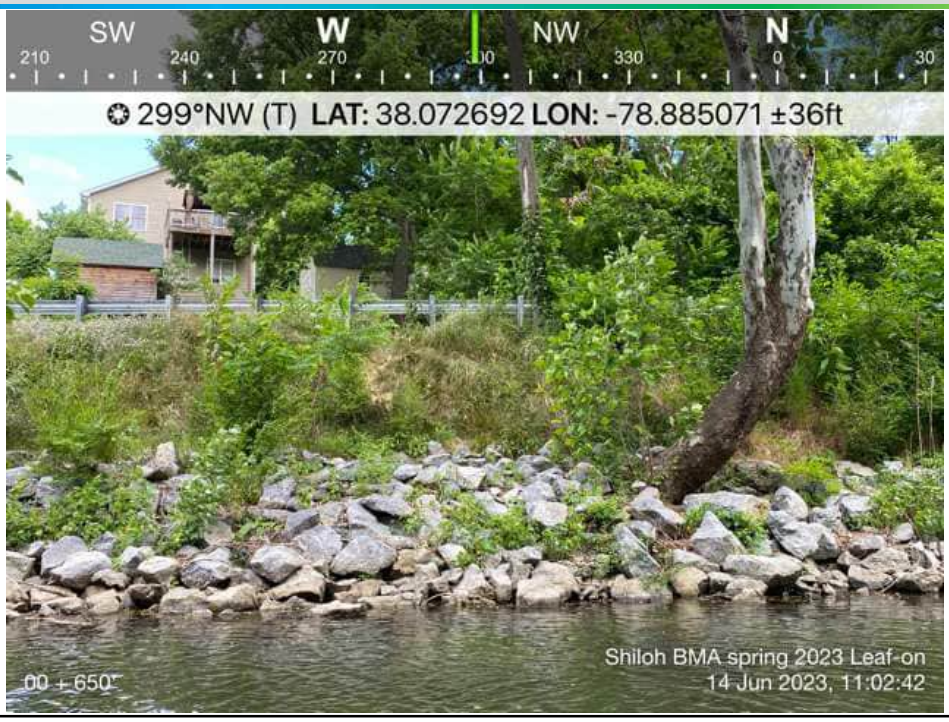


Photo Number: 32	Location: 00 + 650'

Date: 6/14/2023

Direction: West

Description:

Small foot pathway along upper bank with exposed soil due to foot traffic and rill erosion

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 33	Location: 00 + 650’

Date: 6/14/2023

Direction: West

Description:

Animal burrow present beneath large sycamore tree within rock toe

Photo Number: 34	Location: 00 + 700’

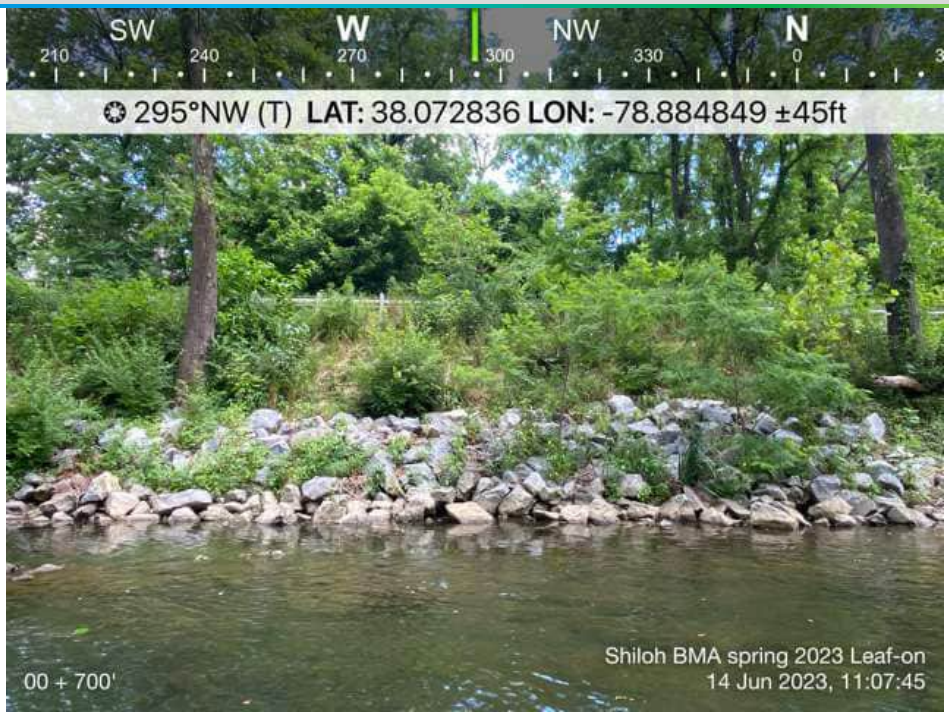
Date: 6/14/2023

Direction: Northwest

Description:

Lower bank ~45°
Upper bank ~65°

Herbaceous vegetation still establishing; several small patches of bare soil observed



South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 35	Location: 00 + 700'

Date: 6/14/2023

Direction: Southwest

Description:

Upstream view of remediated bank

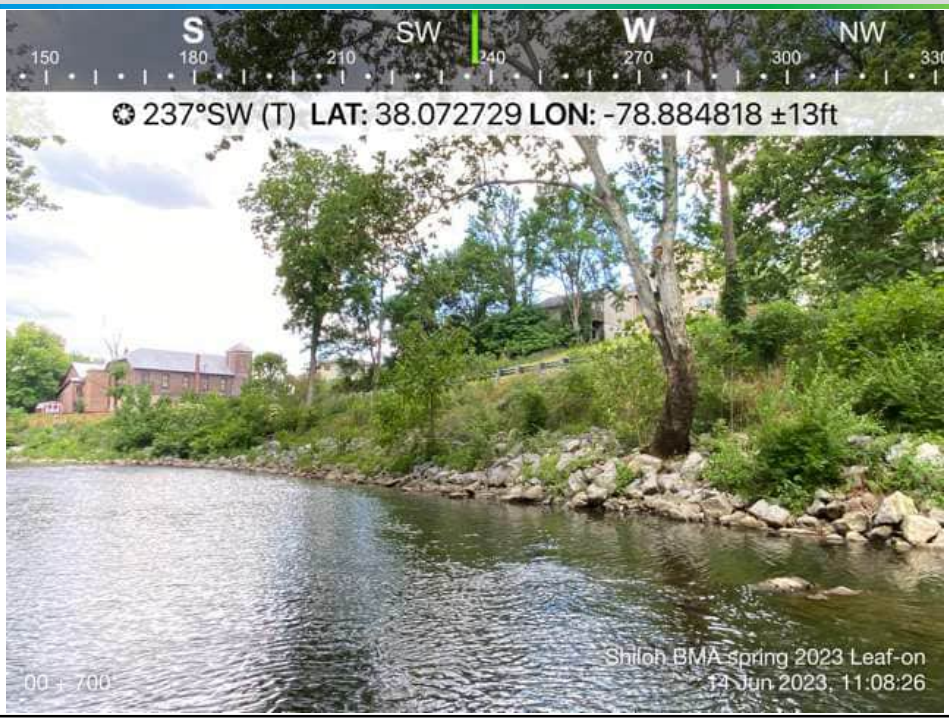


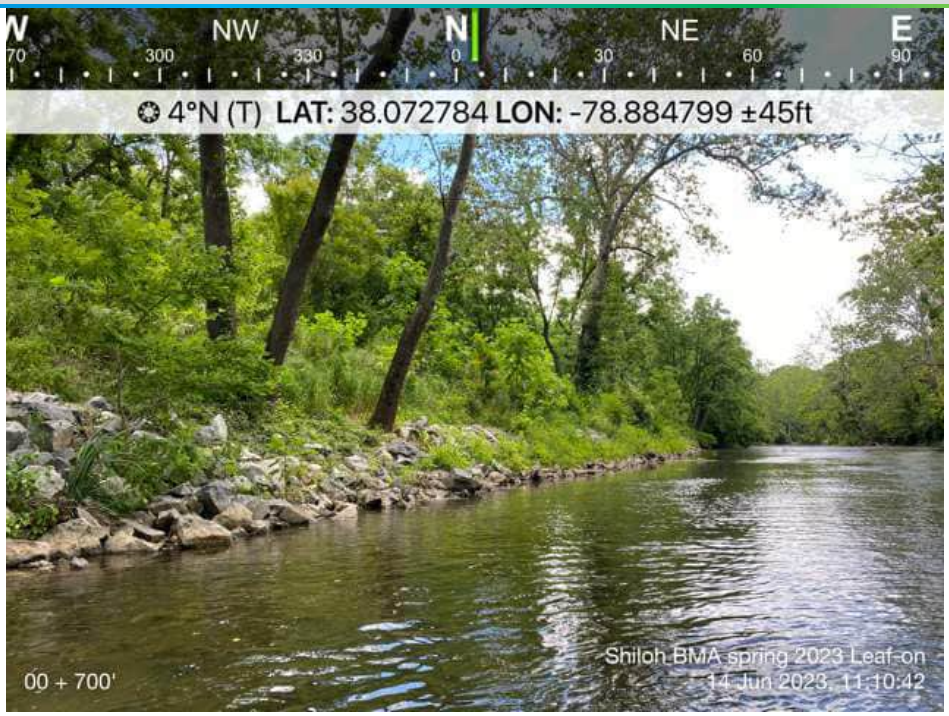
Photo Number: 36	Location: 00 + 700'

Date: 6/14/2023

Direction: North

Description:

Downstream view of remediated bank



South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 37	Location: 00 + 750'

Date: 6/14/2023

Direction: Northwest

Description:

~ 60° bank angle

Grasses and herbaceous vegetation established; vegetation 80% cover; no trees adjacent to edge of water; rock toe intact

Animal burrow present under large sycamore tree

Photo Number: 38	Location: 00 + 800'

Date: 6/14/2023

Direction: Northwest

Description:

~ 65° bank angle

Grasses and herbaceous vegetation established: ~80% cover; no trees adjacent to edge of water; rock toe intact

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 39	Location: 00 + 850'

Date: 6/14/2023

Direction: West

Description:

~75° bank angle

Grasses and herbaceous vegetation established: ~95% cover; no trees adjacent to edge of water; rock toe intact; evidence of sediment deposition in rock toe

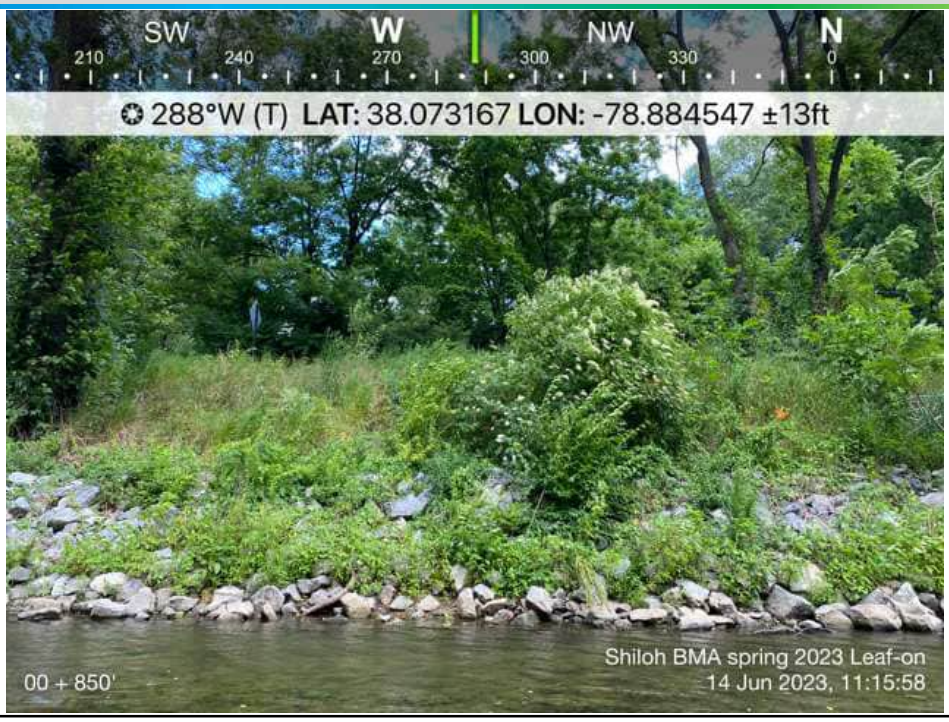


Photo Number: 40	Location: 00 + 900'

Date: 6/14/2023

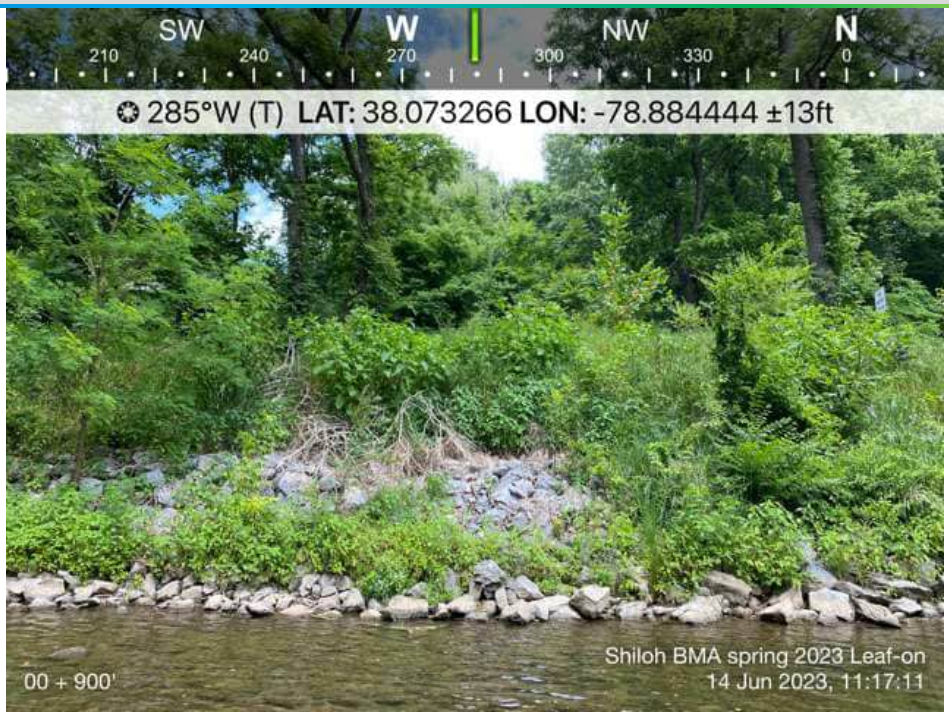
Direction: West

Description:

~70° bank angle

Grasses and herbaceous vegetation well established; ~95% cover; evidence of sediment deposition in rock toe

One large black walnut appears to be dying



South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 41	Location: 00 + 950′

Date: 6/14/2023

Direction: West

Description:

Lower bank ~70°; Upper bank ~60°

Grasses well established along upper bank; vegetation 95% cover

Photo Number: 42	Location: 00 + 975′

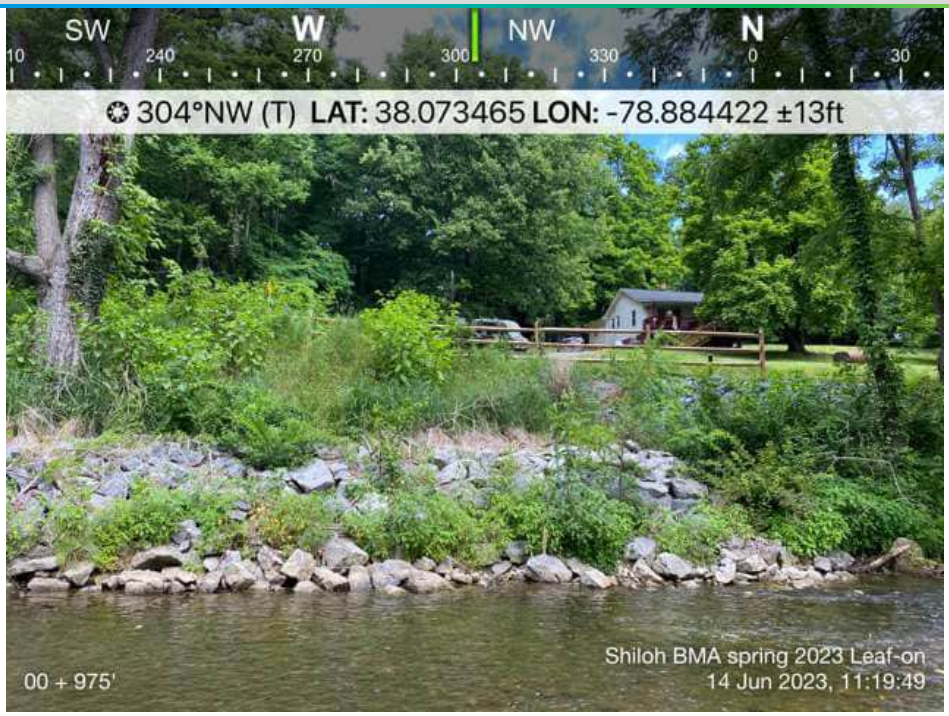
Date: 6/14/2023

Direction: Northwest

Description:

~60° bank angle; end of remediation; grasses established along upper bank; vegetation ~95% cover

Upper bank rip rap and rock toe in good condition



South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 43	Location: 00 + 975′

Date: 6/14/2023

Direction: Southwest

Description:

Upstream view from the end of the remediated bank

Photo Number: 44	Location: 00 + 975′

Date: 6/14/2023

Direction: North

Description:

View of the non-remediated bank immediately downstream of BMA

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 45	Location: Downstream

Date: 6/14/2023

Direction: Northwest

Description:

Footpath from greenway path to river just downstream of BMA

Photo Number: 46	Location: Downstream

Date: 6/14/2023

Direction: Northwest

Description:

Newly installed drainage swale and rip rap are in good condition

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 47	Location: Greenway

Date: 6/14/2023

Direction: Southwest

Description:

Vegetation has not fully established along slope above greenway, adjacent to church parking lot

Photo Number: 48	Location: Greenway

Date: 6/14/2023

Direction: West

Description:

Minimally exposed geocell and bare soil observed along slope above greenway, adjacent to church parking lot

City of Waynesboro parks Dept. has recently been observed managing vegetation along this slope

South River Photo Log

Attachment D

Shiloh Baptist Church BMA
2023 Leaf-on Inspection

Photo Number: 49	Location: Greenway

Date: 6/14/2023

Direction: Southwest

Description:

Invasive Japanese knotweed dominates the slope above the greenway path: >80% cover

Attachment D - Table 2
2023 Leaf-on Riparian Vegetation Plots
Shiloh Baptist Church BMA
Former DuPont Waynesboro Site, Area of Concern 4

Vegetative Species		Absolute % Cover[1]
Scientific Name	**Common Name**	**Spring**
Tree/Vine Stratum		
Catalpa speciosa	Northern Catalpa	5
Convulvulus arvensis	Field Bindweed	2
Juglans nigra	Black Walnut	0-30
Parthenocissus quinquefolia	Virginia Creeper	0-10
Platanus occidentalis	American Sycamore	20-60
Toxicodendron radicans	Poison Ivy	0-10
Vitis vulpina	Frost Grape	0-10
Sapling/Shrub Stratum		
Acer negundo	Box Elder	0-2
Acer rubrum	Red Maple	2-3
Acer saccharinum	Silver Maple	0-3
Acer saccharum	Sugar Maple	5-10
Betula nigra	River Birch	0-2
Juglans nigra	Black Walnut	5
Lonicera maackii	Amur Honeysuckle	0-2
Lonicera tatarica	Tatarian Honeysuckle	0-10
Morus alba	White Mulberry	5
Morus rubra	Red Mulberry	0-1
Paulownia tomentosa	Princess Tree	15
Platanus occidentalis	American Sycamore	0-8
Populus deltoides	Eastern Cottonwood	0-1
Herbaceous Stratum		
Andropogon gerardii	Big Bluestem	0-10
Carex sp.	Sedge sp.	0-2
Chasmanthium latifolium	Indian Woodoats	15-60
Conyza canadensis	Horseweed	0-5
Daucus carota	Wild Carrot	0-1
Duchesnea indica	Mock Strawberry	0-25
Elymius riparius	Riverbank Wildrye	15-60
Eupatoreum purpureum	Joe-Pye Weed	0-10
Eupatorium perfoliatum	Common Boneset	0-5
Fallopia japonica	Japanese Knotweed	0-50
Festuca rubra	Red Fescue	0-15
Galium sp.	Bedstraw	10-40
Glechoma hederacea	Ground Ivy	0-1
Helenium autumnale	Sneezeweed	0-2
Impatiens capensis	Jewelweed	20
Lactuca virosa	Bitter Lettuce	2
Melilotus officinalis	Yellow Sweetclover	0-3
Mentha spp.	Mint	0-1
Panicum virgatum	Switchgrass	5-10
Persicaria pensylvanica	Pennsylvania Smartweed	2-15

Attachment D - Table 2 (continued)
2023 Leaf-on Riparian Vegetation Plots
Shiloh Baptist Church BMA
Former DuPont Waynesboro Site, Area of Concern 4

Phytolacca americana	Pokeberry	5-45
Rosa multiflora	Multiflora Rose	0-5
Sambucus nigra	Elderberry	0-15
Securigera varia	Crownvetch	1-20
Senna marilandica	Maryland Senna	0-2
Solidago sp.	Goldenrod sp.	0-2
Sonchus sp.	Sow Thistle	0-5
Symphyotrichum ericoides	White Aster	0-5
Symphyotrichum novae-angliae	New England Aster	0-3
Tridens flavus	Purpletop Grass	20-70
Trifolium repens	White Clover	0-1
Verbascum blattaria	Moth Mullein	0-1
Verbesina alternifolia	Wingstem	0-5
Vernonia noveboracensis	Ironweed	0-5

Notes:
1. Represents the range observed between two riparian vegetative survey plots per short-term monitoring station.

Attachment D - Waynesboro Off-Site Cap Areas

2023 Leaf-on 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 since last spring.	1
Drainage Structures	Drainage structures are intact with 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 near 00+550'. The overall approximate % cover of Japanese knotweed and other invasives is 18%.	1
Cap System Geosynthetics	Most erosion control fabric has fully deteriorated. Some isolated spots of minimally exposed geocell are present. Exposed geocell due to an erosional rill that has emerged at 00+600' should continue to be monitored and possibly repaired.	2
Cap System Slope Stability	Slope is consistent and stable along remediated sections. The rip-rap placed at 00+550' and 00+975' is in good condition.	1
Cap System Subsidence	Minor soil subsidence was observed around many of the vertical metal guardrail posts between 00+600' and +900' and should be filled in. Cap is in good condition otherwise.	2
Fencing and Gates	Wood railing and metal guardrail were recently installed.	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 exposed soil at 00+450', +500', and +600'.
- Recommended herbicide treatment of Japanese knotweed/invasives in late summer/early fall.

Inspected by: Richard Judge and Kimberly Brogan Date: 06/14/2023

Attachment E
North Park BMA

Attachment E - Table 1
2023 Leaf-on Maintenance Inspection Log
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft)[1]	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 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**	60	N	Upper bank: ~60 degrees Lower bank: ~80 degrees	H	Roots exposed at toe of slope, Honeysuckle bush, 3 mature Walnut trees, Wing Stem	N	None	NA	NA	NA	None	Y	Scour present at toe of slope	Y	None
00 + 00	**3**	45	N	Upper bank: ~20 degrees Mid-bank: ~70 degrees Lower bank: ~30 degrees	NA	Herbaceous vegetation ~80% cover, patches of bare soil, Jewelweed established in rock toe, Black Walnuts and Sycamore present	N	Sycamore is possibly "at-risk"	Y (Rock Toe)	Y	N	Exposed geocell	Y	Light scouring present	Y	Increased vegetative cover
00 + 50	**4, 5**	50	N	Upper bank: ~50 degrees Lower bank: ~30 degrees	NA	Herbaceous vegetation 85% cover, Jewelweed is established at toe of slope, horseweed and grass dominant, Jewelweed established in rock toe, Sycamore trees present	N	Animal burrows under sycamore	Y (Rock Toe)	Y	N	Exposed geocell (at animal burrow beneath tree)	N	None	Y	Animal burrow through geocell
00 + 100	**6, 7**	40	N	Upper bank: ~45 degrees Lower bank: ~35 degrees	NA	Herbaceous vegetation ~90% cover, 3 Sycamores on bank, Jewelweed established in rock toe	N	None	Y (Rock Toe)	Y	N	Exposed geocell	N	None	Y	Exposed geocell
00 + 150	**8, 9**	60	N	Upper bank: ~60 degrees Lower bank: ~50 degrees	NA	Herbaceous vegetation ~80% cover; native grasses and horseweed dominant, occasional bare spots, Jewelweed at toe of slope; Walnut and Catalpa trees	N	Animal burrows beneath tree	Y (Rock Toe)	Y	N	Exposed geocell (at animal burrow beneath tree)	N	None	Y	Exposed geocell
00 + 200	**10**	60	N	Upper bank: ~60 degrees Lower bank: ~45 degrees	NA	Herbaceous vegetation 95% cover; grasses, Oats, Horseweed, Jewelweed at toe of slope; footpath present	N	None	Y (Rock Toe)	Y	N	Exposed geocell	N	None	Y	Exposed geocell
00 + 250	**11, 12**	70	N	Upper bank: ~70 degrees Lower bank: ~45 degrees	NA	Herbaceous vegetation 90% cover; grasses and Horseweed are dominant	N	None	Y (Rock Toe)	Y	N	Exposed geocell	N	None	Y	Increased sediment deposition in rock toe
00 + 300	**13, 14, 15**	70	N	Upper bank: ~70 degrees Lower bank: ~45 degrees	NA	Herbaceous vegetation 95% cover, Black Walnut tree with Poison Ivy vine, Oats ~100% cover, Jewelweed ~10% cover at toe of slope; trampled vegetation	N	None	Y (Rock Toe)	Y	N	Geocell exposed along a shallow trench and hump that runs along the length of the BMA to approximately 00+850'	N	None	Y	Geocell exposed along shallow trench and hump
00 + 350	**16**	70	N	Upper bank: ~70 degrees Lower bank: ~45 degrees	NA	Herbaceous vegetation 95% cover; Oats are dominant: ~90% cover; Jewelweed at toe ~5% cover	N	None	Y (Rock Toe)	Y	N	Geocell exposed along a shallow trench and hump that runs along the top of bank	N	None	Y	Geocell exposed along shallow trench and hump
00 + 400	**17**	50	N	Upper bank: ~60 degrees Lower bank: ~45 degrees	NA	Herbaceous vegetation 95% cover, 3 walnut trees, large patches of invasive knotweed ~70% cover, Poison Ivy around Black Walnuts	N	None	Y (Rock Toe)	Y	N	Geocell exposed along a shallow trench and hump that runs along the top of bank	N	None	Y	Geocell exposed along shallow trench and hump
00 + 450	**18, 19, 20, 21, 22**	50	N	Upper bank: ~60 degrees Lower bank: ~45 degrees	NA	Herbaceous vegetation 95% cover; grasses dominant, invasive knotweed 40% cover, sumac saplings, Jewelweed at toe	N	Coir log decomposing	Y (Rock Toe)	Y	N	Geocell exposed along a shallow trench and hump that runs along the top of bank	N	None	Y	Rip rap appears to have sunk slightly with exposed geocell surrounding it
00 + 500	**23, 24**	60	N	Upper bank: ~60 degrees Lower bank: ~45 degrees	NA	Herbaceous vegetation 95% cover; dominated by grasses and Horseweed, Jewelweed at toe ~20% cover, grasses are dominant	N	None	Y (Rock Toe)	Y	N	Geocell exposed along a shallow trench and hump that runs along the top of bank	N	None	Y	Geocell exposed along shallow trench and hump
00 + 550	**25, 26**	60	N	Upper bank: ~70 degrees Lower bank: ~45 degrees	NA	Herbaceous vegetation 95% cover; grasses are dominant ~60% cover, Red Maple tree, some invasive Honeysuckle established	N	None	Y (Rock Toe)	Y	N	Geocell exposed along a shallow trench and hump that runs along the top of bank	N	None	Y	Geocell exposed along shallow trench and hump
00 + 600	**27**	60	N	Upper bank: ~70 degrees Lower bank: ~45 degrees	NA	Vegetation 80% cover, Black Walnut tree, Jewelweed established at toe of slope, planted Birch tree; patches of invasive Honeysuckle	N	Coir log partially degrading	Y (Rock Toe)	Y	N	Geocell exposed along a shallow trench and hump that runs along the top of bank	N	Exposed scour above rock toe	Y	Geocell exposed along shallow trench and hump
00 + 650	**28**	60	N	Upper bank: ~60 degrees Lower bank: ~45 degrees	NA	Herbaceous vegetation 80% cover, bare soil between mid-bank coir log and rock toe, Black Walnut tree, planted Red Maple	N	None	Y (Rock Toe)	Y	N	Geocell exposed along a shallow trench and hump that runs along the top of bank; coir log exposed mid-bank	N	Bare soil between coir log and rock toe	Y	Geocell exposed along shallow trench and hump

Attachment E - Table 1
2023 Leaf-on Maintenance Inspection Log
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft)[1]	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 Visible (Y/N)[6]	Erosion Control Fabric Visible (Y/N)[6]	Notes	Scour Present (Y/N)[7]	Notes	Y/N	Notes
00 + 700	**29, 30, 31, 32**	60	N	Upper bank: ~65 degrees Lower bank: ~45 degrees	NA	Herbaceous vegetation 75% cover, bare soil between mid-bank coir log and rock toe, 2 Black Walnuts with Poison Ivy, Jewelweed ~15% cover at toe, grasses are dominant	N	Animal burrow present	Y (Rock Toe)	Y	N	Geocell exposed along a shallow trench and hump that runs along the top of bank; coir log exposed mid-bank	N	None	Y	Geocell exposed along shallow trench and hump
00 + 750	**33**	60	N	Upper bank: ~60 degrees Lower bank: ~45 degrees	NA	Herbaceous vegetation 85% cover, Sycamores present, grasses dominant	N	None	Y (Rock Toe)	Y	N	Geocell exposed along a shallow trench and hump that runs along the top of bank; coir log is mostly degraded	N	None	Y	Geocell exposed along shallow trench and hump
00 + 800	**34, 35**	60	Y	None	NA	Herbaceous vegetation 80% cover, bare soil between mid-bank coir log and rock toe, Sycamore, Maples and Birch trees, grasses are dominant; footpath present	N	Geocell and footpath nearby; outfall present	Y (Rock Toe)	Y	N	Geocell exposed along a shallow trench and hump that runs along the top of bank; coir log is mostly degraded	Y	Minimal scouring present	Y	Geocell exposed along shallow trench and hump
00 + 850	**36**	45	Y	None	NA	Herbaceous vegetation 95% cover; Sycamore, Elderberry and 2 Paw Paw trees are healthy	N	None	Y (Rock Toe)	Y	N	Geocell exposed along a shallow trench and hump that runs along the top of bank ends here	N	None	Y	Geocell exposed along shallow trench and hump; this is the end point
00 + 900	**37**	50	N	Upper bank: ~50 degrees Lower bank: ~40 degrees	NA	Herbaceous vegetation 95% cover, native grasses are dominant; footpath present	N	None	Y (Rock Toe)	N	N	None	N	None	Y	Sediment deposition in rock toe
00 + 950	**38**	60	N	Upper bank: ~60 degrees Lower bank: ~40 degrees	NA	Herbaceous vegetation 95% cover, native grasses are dominant, Dogwoods and Sycamore present	N	None	Y (Rock Toe)	N	N	None	N	None	N	None
00+1000	**39**	50	N	Upper bank: ~55 degrees Lower bank: ~35 degrees	NA	Herbaceous vegetation 95% cover, Sweet Pea ~10% cover; Invasive Crown Vetch ~ 2% cover; Native grasses are dominant	N	None	Y (Rock Toe)	N	N	None	N	None	N	None
00+1050	**40, 41, 42**	65	N	Upper bank: ~65 degrees Lower bank: ~45 degrees	NA	End of first remediated bank section; Vegetation 85% cover	N	New footpath present; increase in knotweed growth	Y (Rock Toe)	N	N	None	N	None	Y	Increased Japanese knotweed cover
00+1100	**43**	65	Y	Bank slightly undercut	NA	Beginning of non-remediated section, invasive knotweed ~60% cover, native Pokeberry ~20, invasive Honeysuckle ~10%, Oats and grasses throughout, Yucca plants	N	Tree fallen nearby, significant debris building up	NA	NA	NA	None	Y	Scour present at toe of slope	N	None
00+1150	**44**	65	Y	None	M	Fallen Sycamore, vegetative cover ~100%	N	None	NA	NA	NA	None	Y	Scour present at toe of slope	N	None
00+1200	**45**	50	Y	None	L	Exposed roots ~5%; LWD along bank from dead tree, invasive Honeysuckle, Black Walnuts, Silver Maples, Red Maple, established vegetation cover	N	None	NA	NA	NA	None	Y	Scour and undercutting present at toe of slope	N	None
00+1250	**46, 47**	65	Y	None	M	Access path to the river with improvised stairs, Silver Maple, vegetation cover ~100% cover; shaded, pedestrian access path	N	Tree has fallen to left of stairs	NA	NA	NA	None	Y	Scour present at toe of slope, signficant erosion at base of improvised access path	Y	Recently downed tree present to the left of stairs
00+1300	**48**	60	Y	None	H	Access path to the river, exposed roots; path overgrown	Y	Sycamore, Silver Maple are at-risk	NA	NA	NA	None	Y	Scour present at toe of slope	N	None
00+1350	**49**	55	Y	None	H	Exposed roots, invasive Honeysuckle along bank	Y	Silver Maple dying	NA	NA	NA	None	Y	Scour under roots	N	None
00+1400	**50, 51**	50	Y	Animal burrows present	H	Significantly exposed roots are more exposed than last year, Black Walnut, Red Maple, pedestrian path/access	Y	Black Walnut, Red Maple	NA	NA	NA	None	Y	Minimal scour under roots, exposed rocks and gravel	Y	Roots are more exposed

Attachment E - Table 1
2023 Leaf-on Maintenance Inspection Log
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft)[1]	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 Visible (Y/N)[6]	Erosion Control Fabric Visible (Y/N)[6]	Notes	Scour Present (Y/N)[7]	Notes	Y/N	Notes
00+1450	**52**	65	Y	None	M	Moderately exposed roots; Black Walnut, invasive Honeysuckle	Y	Black Walnut	NA	NA	NA	None	Y	Minimal scour under roots, exposed rocks and gravel	N	None
00+1500	**53**	55	Y	None	H	End of non-remediated section; Black Walnut, Sycamore, invasive Honeysuckle	N	None	NA	NA	NA	None	Y	Scour under roots, gravel and pebbles at toe	N	None
00+1550	**54, 55, 56**	60	Y	None	H	Beginning of second remediated bank section, herbaceous vegetation 75% cover, exposed roots and soil upstream of remediated section; increased undercutting below exposed root	N	None	Y (Rock Toe)	N	Y	Exposed roots and soil	Y	Scour under toe of slope	Y	None
00+1600	**57, 58**	60	Y	None	NA	Herbaceous vegetation 95% cover, grasses dominant, Jewelweed established in rock toe, Sycamore saplings	N	None	Y (Rock Toe)	N	Y	Exposed fabric	N	None	Y	Erosion control fabric exposed
00+1650	**59, 60, 61**	45	Y	None	NA	Vegetation cover adjacent to stairs ~100% cover; grasses, Sycamore saplings, Coreopsis, rock toe intact, stairs and kayak rails intact	N	None	Y (Rock Toe)	N	Y	Exposed fabric to the left of stairs	N	None	Y	Exposed erosion control fabric to the left of stairs
00+1700	**62, 63, 64, 65**	50	N	Upper bank: ~50 degrees Lower bank: ~20 degrees	NA	Herbaceous vegetation 95% cover, 3 Sycamores surroudned by gravel, pedestrian access path at toe of slope slanted due to erosion, parts of rock toe around path moved- likely by human activity but remains in fair condition	N	None	Y (Rock Toe)	Y	Y	Exposed fabric	N	None	Y	Exposed erosion control fabric
00+1750	**66**	65	N	Upper bank: ~65 degrees Lower bank: ~20 degrees	NA	Herbaceous vegetation 95% cover, 5 isolated patches of invasive knotweed, Jewelweed at toe of slope, Walnut saplings	N	None	Y (Rock Toe)	Y	N	None	N	None	Y	Slight erosion, less significant rock toe
00+1800	**67**	65	N	Upper bank: ~65 degrees Lower bank: ~30 degrees	NA	Increased herbaceous vegetation 95% cover; Sycamore tree; dead vegetation to right of Sycamore	N	None	Y (Rock Toe)	N	Y	None	N	None	Y	Erosion control fabric exposed
00+1850	**68, 69, 70**	45	N	Upper bank: ~45 degrees Lower bank: ~30 degrees	NA	Herbaceous vegetation 95% cover, small Sycamore saplings are established, small patches of invasive knotweed ~15%; pedestrian access path at toe of slope in good condition	N	None	Y (Rock Toe)	N	N	None	N	None	N	None
00+1900	**71, 72**	50	N	Upper bank: ~50 degrees Lower bank: ~30 degrees	NA	Herbaceous vegetation 100% cover, two small patches of knotweed at base of stairs	N	None	Y (Rock Toe)	N	Y	None	Y	Slight scour at toe of stairs	Y	Erosion control fabric exposed at bottom of stairs
00+1950	**73**	70	N	Upper bank: ~70 degrees Lower bank: ~20 degrees	NA	Herbaceous vegetation 100% cover, Jewelweed at toe of slope, culvert is in good condition, patch of invasive knotweed increased in coverage ~30%	N	None	Y (Rock Toe)	N	N	None	N	None	Y	Increased Japanese knotweed cover
00+2000	**74**	75	N	Upper bank: ~75 degrees Lower bank: ~20 degrees	NA	Herbaceous vegetation 100% cover, invasive knotweed present ~10%	N	None	Y (Rock Toe)	N	N	None	N	None	Y	Increased Japanese knotweed cover; no exposed soil
00+2050	**75**	60	N	Upper bank: ~60 degrees Lower bank: ~30 degrees	NA	Herbaceous vegetation 100% cover; Jewelweed at toe of slope, invasive knotweed 10% cover	N	None	Y (Rock Toe)	N	N	None	N	None	N	None
00+2100	**76**	70	Y	None	NA	Herbaceous vegetation 100% cover, vegetation established in rock toe; invasive knotweed coverage ~3%	N	None	Y (Rock Toe)	N	N	None	N	None	N	None
00+2150	**77**	70	Y	None	NA	Vegetation cover 100%; grasses are dominant; Jewelweed and Blue Vervain established at toe of slope	N	None	Y (Rock Toe)	N	N	None	N	None	N	None

Attachment E - Table 1
2023 Leaf-on Maintenance Inspection Log
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft)[1]	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 Visible (Y/N)[6]	Erosion Control Fabric Visible (Y/N)[6]	Notes	Scour Present (Y/N)[7]	Notes	Y/N	Notes
00+2200	**78, 79, 80**	60	Y	None	NA	Native vegetation cover 100%; grasses are dominant, Black Walnut tree, rock toe widens at downstream end ~8' wide	N	None	Y (Rock Toe)	N	N	None	N	None	N	None
00+2250	**81**	65	Y	None	NA	End of remediated bank, herbaceous vegetation ~95% cover, Black Walnut, extended rock toe	N	None	Y (Rock Toe)	N	N	None	N	None	N	None
00+2300	**82**	75	Y	None	M	Non-remediated, exposed roots of Box Elder tree, invasive Honeysuckle, Black Walnut	Y	Box Elder	NA	NA	NA	None	Y	Scour under tree roots	N	None
00+2350	**83**	65	Y	None	H	Invasive Honeysuckle, Black Walnut exhibits exposed roots	Y	Black Walnut	NA	NA	NA	None	Y	Slightly increased bank scour	N	None
00+2380	**84**	70	Y	None	H	Invasive Honeysuckle alongside bridge abutment, Elm sapling and Ailanthus tree at risk, Jewelweed at toe of slope, invasive knotweed coverage ~10%	Y	Elm sapling and Ailanthus (Princess tree)	NA	NA	NA	None	Y	Severe scour under roots	Y	Increased bank scour and increased Japanese knotweed cover

Notes:

1. 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

2. 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)

3. 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)

4. 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)

5. 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)

6. 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

7. 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)

8. Grey shaded cells are portions of the bank that were not remediated

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 1	Location: 00 – 25’

Date: 6/14/2023

Direction: Northwest

Description:

Upstream of remediation;

~80° lower bank; ~60° upper bank

Vertical drop at toe; exposed roots throughout bank; minimal scour present along toe

Photo Number: 2	Location: 00 – 25’

Date: 6/14/2023

Direction: North

Description:

Downstream view from start of remediated section

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 3	Location: 00 + 00'

Date: 6/14/2023

Direction: South

Description:

Start of 1st remediated section; ~30° lower bank; ~20° upper bank

Vegetation 80% cover; bare soil along upper bank (left of tree); no at-risk trees present; footpath at edge of remediation; geocell exposed; rock toe intact

Photo Number: 4	Location: 00 + 50'

Date: 6/14/2023

Direction: Northwest

Description:

~30° lower bank; ~50° upper bank

Primarily herbaceous vegetation ~85% cover; no at-risk trees present; fine sediment deposition; geocell visible

Note the line of Jewelweed growing at approximately bankfull elevation

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 5	Location: 00 + 50’

Date: 6/14/2023

Direction: Northwest

Description:

Animal burrow through geocell observed

Photo Number: 6	Location: 00 + 100’

Date: 6/14/2023

Direction: Northwest

Description:

~35° lower bank;
~45° upper bank

Vegetation 90% cover; no at-risk trees present; vegetation growing in rock toe; geocell visible

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 7	Location: 00 + 100′

Date: 6/14/2023

Direction: Northeast

Description:

Downstream view of remediated bank

Note the difference in color between rock toe below and above the line of jewelweed: Lower rock toe appears brown in color due to sediment deposition, and growth of Jewelweed suggests rocks are trapping sediment effectively

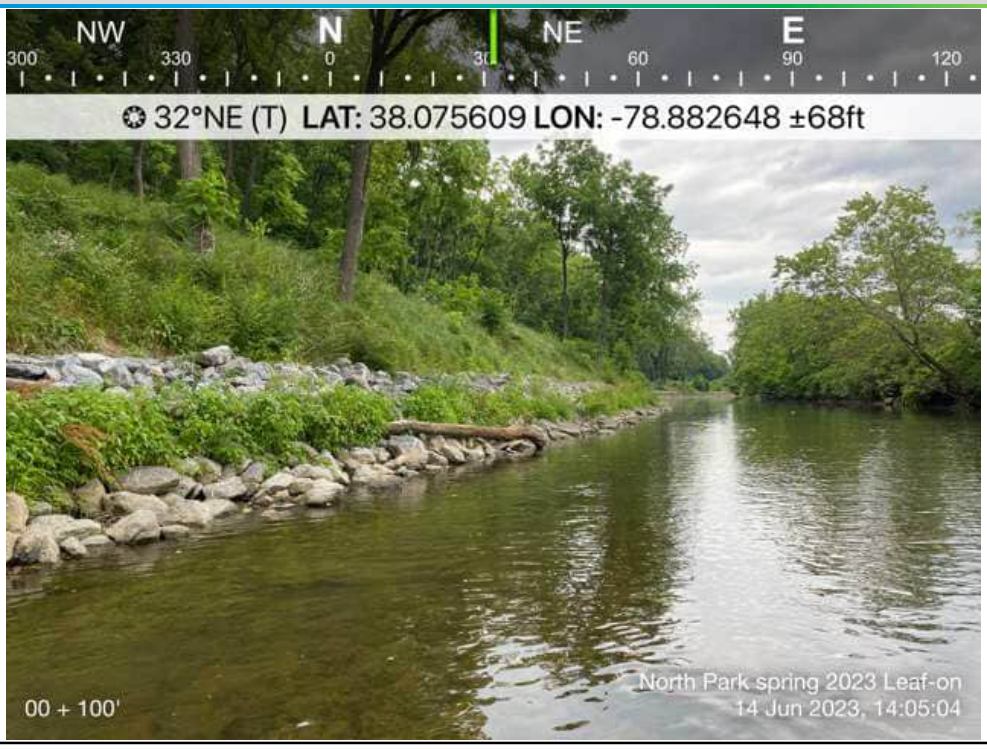


Photo Number: 8	Location: 00 + 150′

Date: 6/14/2023

Direction: Northwest

Description:

~50° lower bank;
~60° upper bank

Vegetation 80% cover; rock toe intact; moderate sediment deposition; exposed geocell at base of tree

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 9	Location: 00 + 150’

Date: 6/14/2023

Direction: Northwest

Description:

Animal burrow through geocell observed

Photo Number: 10	Location: 00 + 200’

Date: 6/14/2023

Direction: Northwest

Description:

~45° lower bank; ~60° upper bank

Vegetation ~95% cover; footpath present; rock toe intact, plants establishing in rock toe; moderate sediment deposition; geocell exposed around rip rap on upper bank

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 11	Location: 00 + 250′

Date: 6/14/2023

Direction: Northwest

Description:

~45° lower bank;
~70° upper bank

Vegetation 90% cover; rock toe intact; increased sediment deposition in rock toe; geocell is minimally exposed

Photo Number: 12	Location: 00 + 250′

Date: 6/14/2023

Direction: Northwest

Description:

View of sediment deposition along rock toe with Jewelweed and other herbaceous vegetation colonizing

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 13	Location: 00 + 300'

Date: 6/14/2023

Direction: Northwest

Description:

~45° lower bank;
~70° upper bank

Vegetation 95% cover, with trampled vegetation present; subsided top of bank; rock toe intact increased grass growth; increased sediment deposition in rock toe

Photo Number: 14	Location: 00 + 300'

Date: 6/14/2023

Direction: North

Description:

Upstream view of the remediated bank

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 15	Location: 00 + 300′

Date: 6/14/2023

Direction: Northwest

Description:

Footpath present along upper bank with trampled vegetation

Photo Number: 16	Location: 00 + 350′

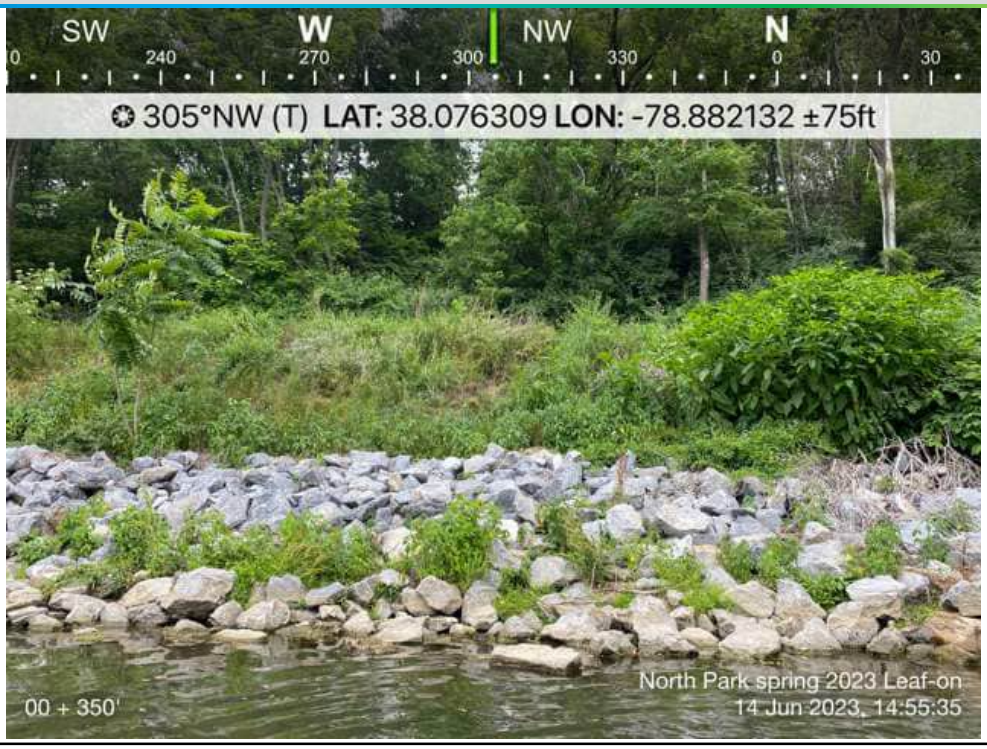
Date: 6/14/2023

Direction: Northwest

Description:

~45° lower bank;
~70° upper bank

Vegetation 95% cover, oats dominant; rock toe intact, jewelweed establishing in rock toe; geocell is exposed along shallow trench at top of bank; minimal sediment deposition



South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 17	Location: 00 + 400'

Date: 6/14/2023

Direction: Northwest

Description:

~45° lower bank; ~60° upper bank

Vegetation ~95% cover; large patches of invasive knotweed 70% cover; trees near rock toe in good condition; rock toe intact, geocell exposed along shallow trench at top of bank

Photo Number: 18	Location: 00 + 450'

Date: 6/14/2023

Direction: Northwest

Description:

~45° lower bank; ~60° upper bank

Vegetation ~95% cover; invasive knotweed increasing coverage ~40%; rock toe intact, jewelweed established in rock toe; geocell exposed on top of bank around rip rap

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 19	Location: 00 + 450’

Date: 6/14/2023

Direction: Northeast

Description:

Beside greenway path looking downriver. Rip rap fortified upper bank pictured to the right

Photo Number: 20	Location: 00 + 450’

Date: 6/14/2023

Direction: Southeast

Description:

Rip rap fortified upper bank with protruding geocell along upper perimeter

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 21	Location: 00 + 450’

Date: 6/14/2023

Direction: Southeast

Description:

Broken zip tie protruding from the ground along the side of the fortified rip rap section of the upper bank

Photo Number: 22	Location: 00 + 450’

Date: 6/14/2023

Direction: Southwest

Description:

A shallow trench (center of picture) with protruding geocell that appears ripped. Adjacent to trench on the right of picture is a small hump that runs along the side of the greenway path. Both the trench and hump extend from approximately 00+300’ to +850’

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 23	Location: 00 + 500’

Date: 6/14/2023

Direction: Northwest

Description:

~45° lower bank; ~60° upper bank

Vegetation ~95% cover with herbaceous and woody plants well established rock toe intact; geocell exposed along top of bank

Photo Number: 24	Location: 00 + 500’

Date: 6/14/2023

Direction: Southwest

Description:

Geocell protruding from the shallow trench along the top of bank, adjacent to the greenway path

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 25	Location: 00 + 550′

Date: 6/14/2023

Direction: Northwest

Description:

~45° lower bank; ~70° upper bank

Vegetation ~95% cover; Red maple and invasive honeysuckle present; rock toe intact; geocell exposed along top of bank

Photo Number: 26	Location: 00 + 550′

Date: 6/14/2023

Direction: Northwest

Description:

Minimally exposed geocell along upper bank

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 27	Location: 00 + 600'

Date: 6/14/2023

Direction: Northwest

Description:

~45° lower bank;
~70° upper bank

Vegetation ~80% cover; coir logs mostly degraded; exposed soil between coir log and top of intact rock toe; geocell minimally exposed along top of bank

Photo Number: 28	Location: 00 + 650'

Date: 6/14/2023

Direction: Northwest

Description:

~45° lower bank;
~60° upper bank

Minimal sediment deposition; geocell slightly exposed; note the difference in color between upper and lower rock toe indicating sediment deposition is occuring

South River Photo Log

North Park BMA
2023 Leaf-on Inspection

Photo Number: 29	Location: 00 + 700’

Date: 6/14/2023

Direction: Northwest

Description:

~45° lower bank; ~60° upper bank

Vegetation ~75% cover; coir logs mostly degraded with surrounding small patches of exposed soil; rock toe intact; minimal sediment deposition

Photo Number: 30	Location: 00 + 700’

Date: 6/14/2023

Direction: Northwest

Description:

Animal burrow through geocell observed

Other sections of minimally exposed geocell present nearby

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 31	Location: 00 + 700’

Date: 6/14/2023

Direction: Southwest

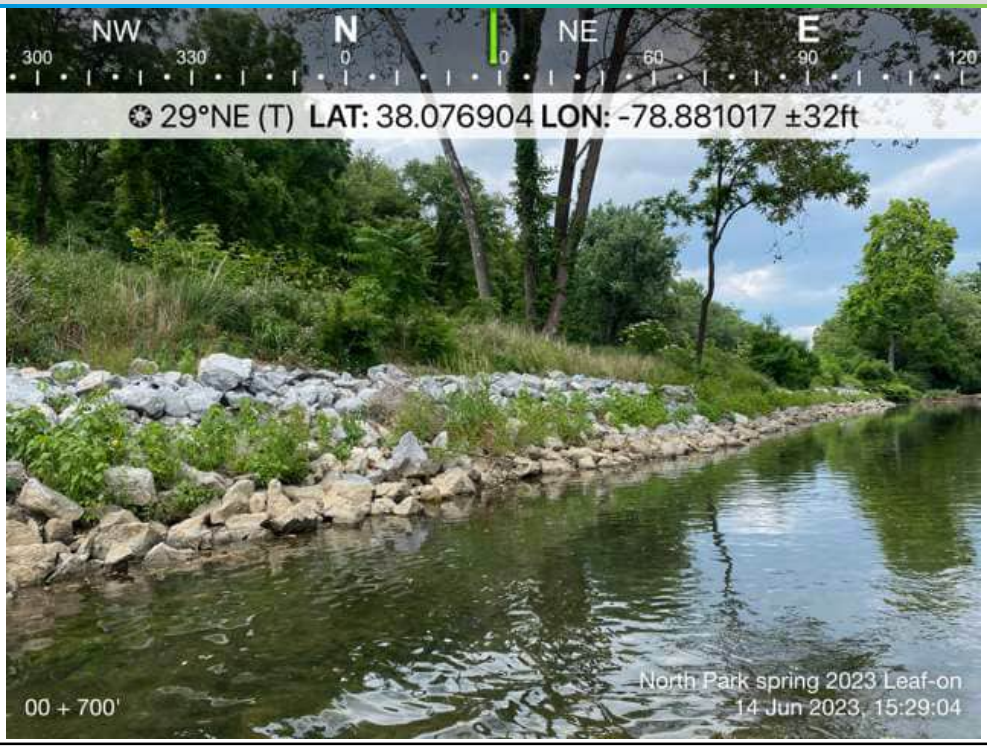
Description:
Upstream view of the remediated bank

Photo Number: 32	Location: 00 + 700’

Date: 6/14/2023

Direction: Northeast

Description:
Downstream view of the remediated bank



South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 33	Location: 00 + 750′

Date: 6/14/2023

Direction: Northwest

Description:

~45° lower bank; ~60° upper bank

Vegetation ~85% cover, well established; coir logs mostly degraded; rock toe intact; minimal sediment deposition; exposed geocell along top of bank

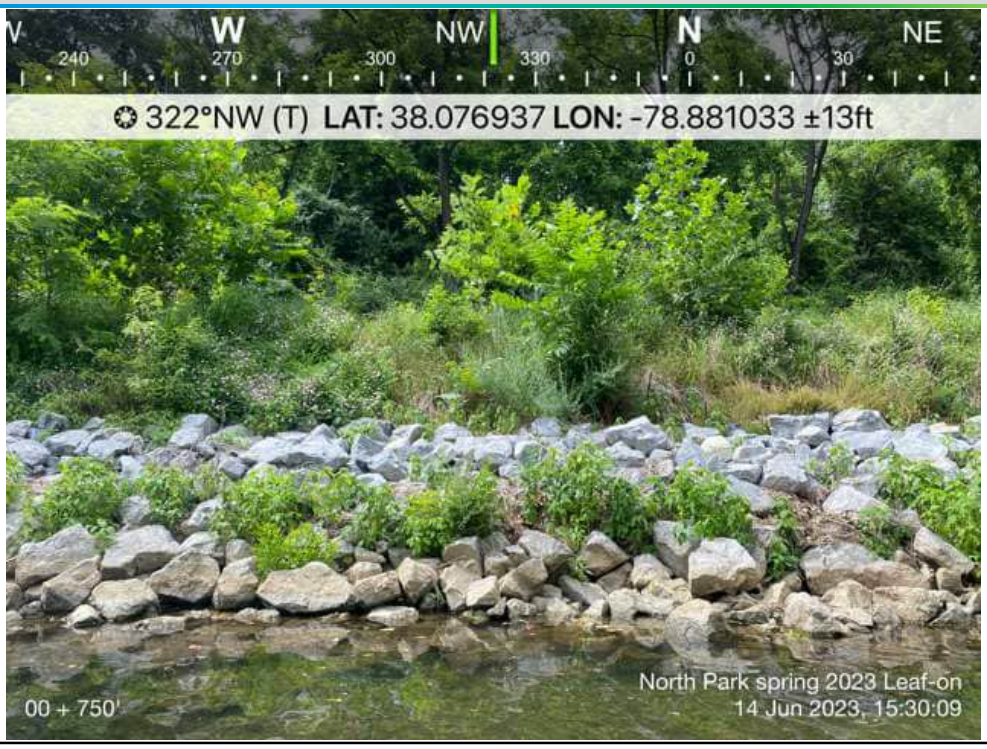


Photo Number: 34	Location: 00 + 800′

Date: 6/14/2023

Direction: Northwest

Description:

~ 60° bank angle

Vegetation ~80% cover; coir logs degrading but exposed, jewelweed established in rock toe; geocell and footpath visible; minimal scouring;

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 35	Location: 00 + 800′

Date: 6/14/2023

Direction: Northwest

Description:

Open patch along top of bank where construction took place on the concrete drainage swale (pictured)

Some exposed and torn geocell observed here

Photo Number: 36	Location: 00 + 850′

Date: 6/14/2023

Direction: Northwest

Description:

~ 45° bank angle

Vegetation ~95% cover; group of four trees near top of bank in good condition; coir log mostly deteriorated but still visible; rock toe intact, jewelweed establishing in rock toe; minimal sediment deposition; geocell exposed

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 37	Location: 00 + 900'

Date: 6/14/2023

Direction: North

Description:

~40° lower bank;
~50° upper bank

Vegetation ~80% cover; footpath present; tree in good condition; rock toe intact; coir log deteriorated; sediment deposition in rock toe

Photo Number: 38	Location: 00 + 950'

Date: 6/14/2023

Direction: Northwest

Description:

~40° lower bank;
~60° upper bank

Vegetation ~95% cover; rock toe intact, jewelweed establishing in rock toe; minimal sediment deposition

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 39	Location: 00 + 1000′

Date: 6/14/2023

Direction: Northwest

Description:

~35° lower bank;
~55° upper bank

Vegetation ~95% cover; rock toe intact; minimal sediment deposition

Photo Number: 40	Location: 00 + 1050′

Date: 6/14/2023

Direction: Northwest

Description:

End of 1st remediated part of BMA

~45° lower bank;
~65° upper bank

Vegetation ~85% cover, increased knotweed present; rock toe intact; minimal sediment deposition

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 41	Location: 00 + 1050'

Date: 6/14/2023

Direction: West

Description:

Upstream view from end of first remediated section

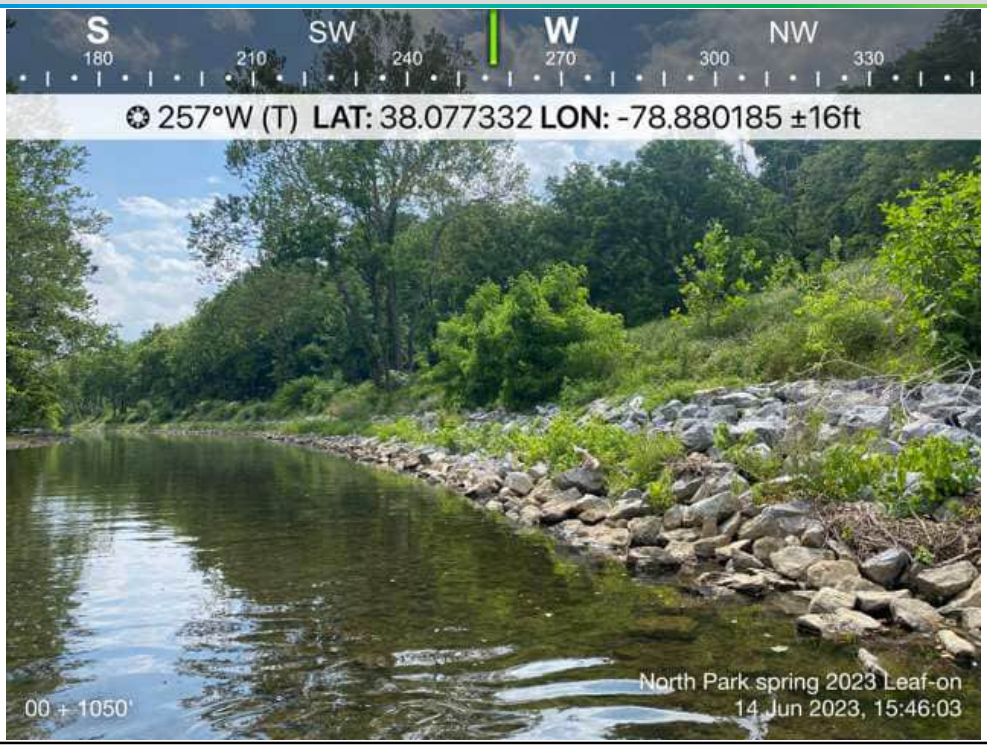


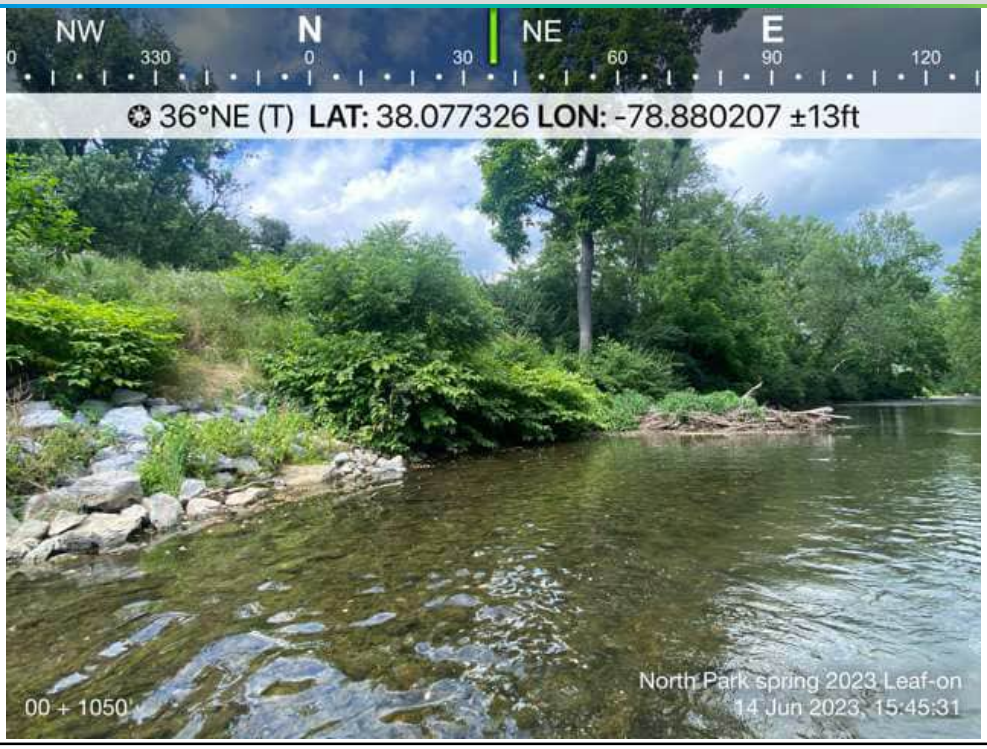
Photo Number: 42	Location: 00 + 1050'

Date: 6/14/2023

Direction: Northeast

Description:

Downstream view of non-remediated section from end of first remediated section



South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 43	Location: 00 + 1100'

Date: 6/14/2023

Direction: Northwest

Description:

Start of non-remediated section; ~ 65° bank angle

Vegetation ~95% cover; invasive knotweed 60% cover; slight undercutting at toe of bank; significant debris building up from fallen tree; minimal scour at end of remediation

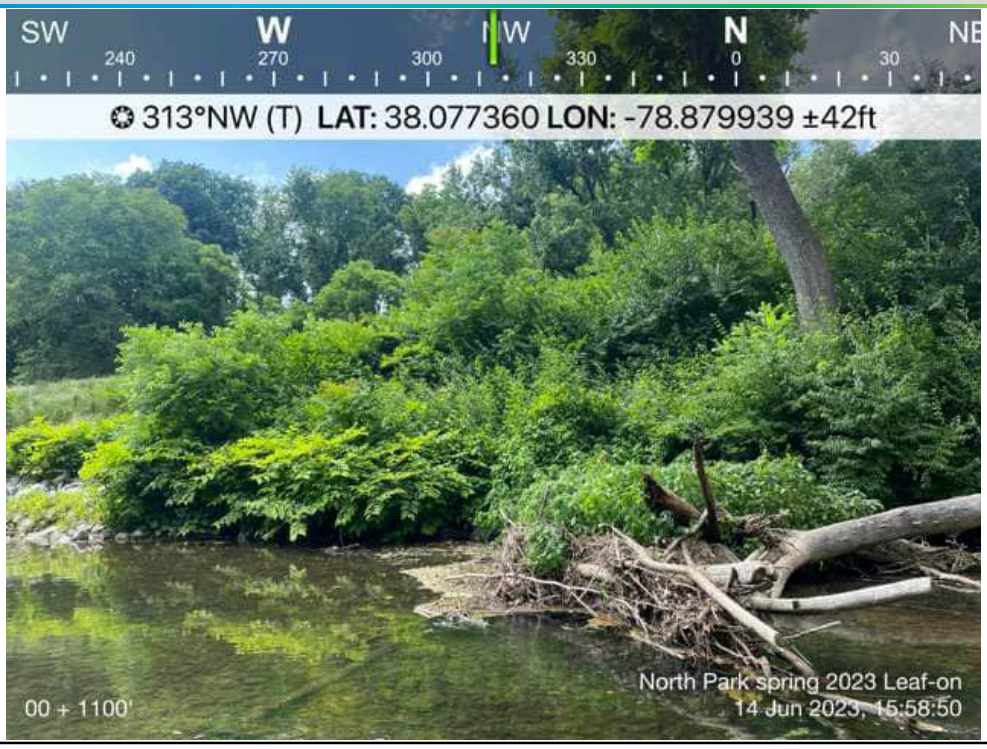


Photo Number: 44	Location: 00 + 1150'

Date: 6/14/2023

Direction: North

Description:

Non-remediated section; ~ 65° bank angle

Vegetation 100% cover; one tree mid bank in good condition; fallen sycamore in water; minimal undercutting at toe of bank; minimal scour

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 45	Location: 00 + 1200’

Date: 6/14/2023

Direction: North

Description:

Non-remediated section; ~ 50° bank angle

Vegetation 95% cover; three trees mid bank in good condition; minimal undercutting and scour at toe of bank; exposed roots; LWD present

Photo Number: 46	Location: 00 + 1250’

Date: 6/14/2023

Direction: North

Description:

Non-remediated section; ~ 65° bank angle

Access path with improvised stairs, tree fallen to left; vegetation on mid and upper bank; vegetation 100% cover; one tree mid bank in good condition; scour and erosion evident at base of access path

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 47	Location: 00 + 1250’

Date: 6/14/2023

Direction: Northwest

Description:

View of access path and wooden steps present from top of bank to mid bank then a mostly vertical drop from scour and erosion at the base of steps

Photo Number: 48	Location: 00 + 1300’

Date: 6/14/2023

Direction: North

Description:

Non-remediated section; ~ 60° bank angle

Exposed roots on tree at toe; vegetation ~60% cover; improvised access path present leading to exposed soil; tree at mid bank appears to be dead; some scour at exposed roots at toe of bank

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 49	Location: 00 + 1350′

Date: 6/14/2023

Direction: North

Description:

Non-remediated section; ~ 55° bank angle

Entire bank shows exposed roots; vegetation ~70% cover; dying silver maple

Photo Number: 50	Location: 00 + 1400′

Date: 6/14/2023

Direction: North

Description:

Non-remediated section; ~50° bank angle

More highly exposed roots throughout bank; vegetation ~40% cover; improvised access path present; minimal scour

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 51	Location: 00 + 1400′

Date: 6/14/2023

Direction: Northwest

Description:

Animal burrows present

Photo Number: 52	Location: 00 + 1450′

Date: 6/14/2023

Direction: North

Description:

Non-remediated section; ~65° bank angle

Exposed roots throughout bank; vegetation ~80% cover

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 53	Location: 00 + 1500′

Date: 6/14/2023

Direction: North

Description:

~55° bank angle

Significant root exposure with some scour and undercutting

Large tree limb hanging over river

Photo Number: 54	Location: 00 + 1550′

Date: 6/14/2023

Direction: North

Description:

End of non-remediated section; ~60° bank angle

Vegetation ~75% cover; one tree at toe and one on upper bank in good condition; footpath; undercutting at tree roots at toe of bank

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

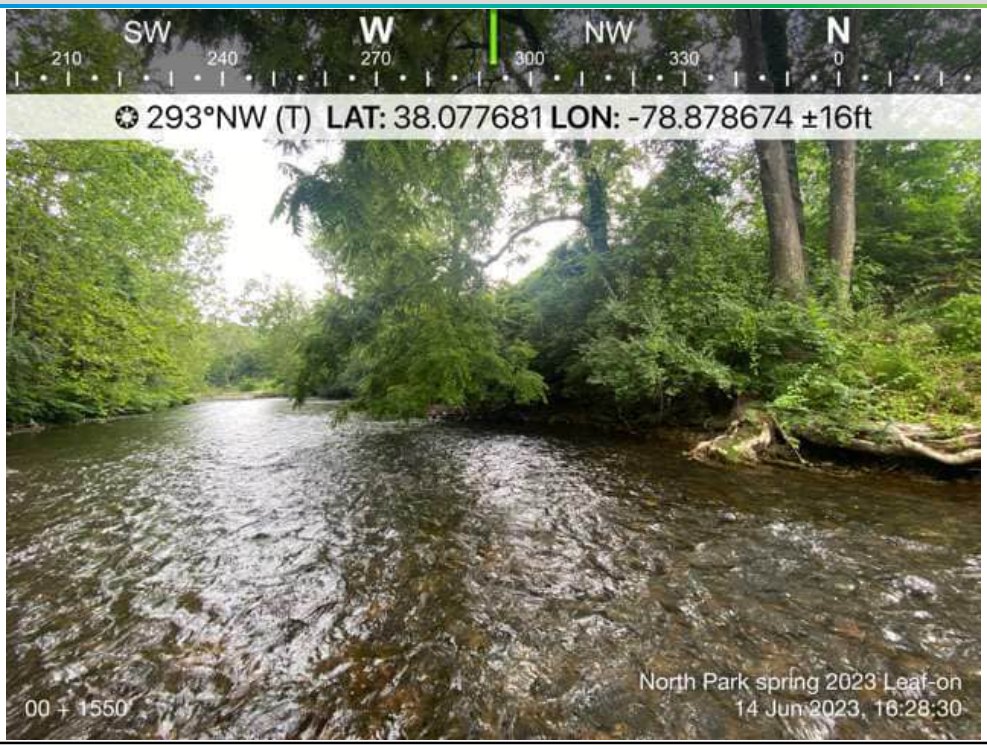
Photo Number: 55	Location: 00 + 1550’
Date: 6/14/2023 Direction: Northwest Description: Upstream view of non-remediated bank	

Photo Number: 56	Location: 00 + 1550’
Date: 6/14/2023 Direction: Northeast Description: Downstream view of remediated bank from beginning of second remediated section	

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 57	Location: 00 + 1600’

Date: 6/14/2023

Direction: North

Description:

~60° bank angle

Vegetation ~95% cover; rock toe intact; minimal sediment deposition; vegetation fully established; exposed erosion control fabric

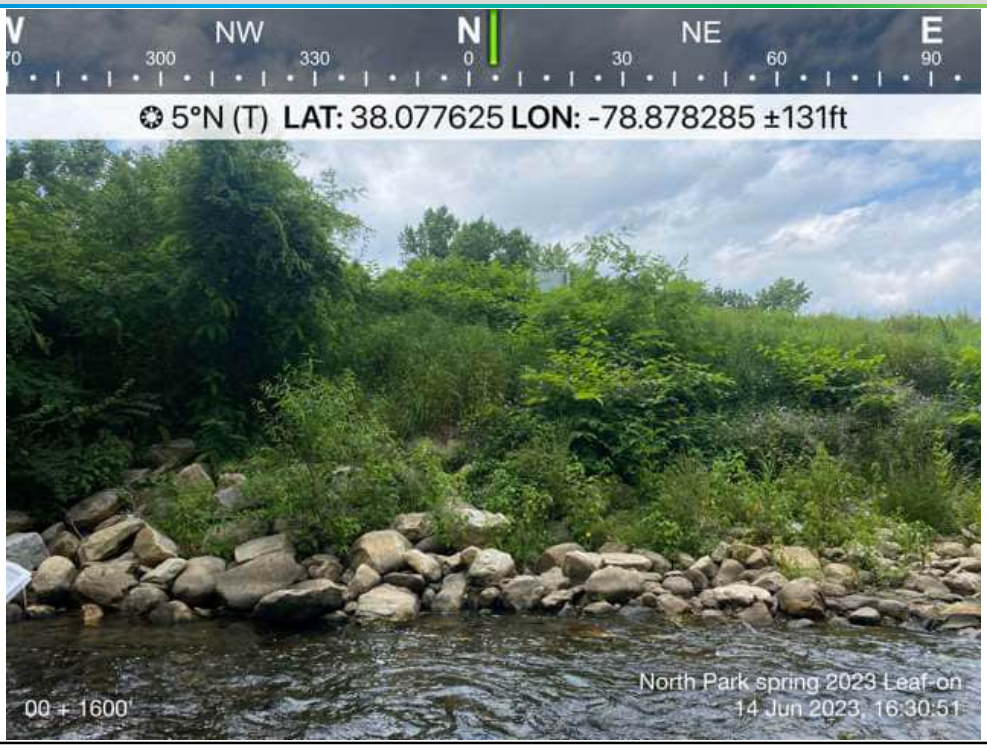


Photo Number: 58	Location: 00 + 1600’

Date: 6/14/2023

Direction: Northeast

Description:

Erosion control fabric exposed along rock toe

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 59	Location: 00 + 1650’

Date: 6/14/2023

Direction: North

Description:

~45° bank angle

Vegetation 100% cover; no at-risk trees present; erosion control fabric exposed to left of stairs; increased erosion of gravel dust into river; few small boulders have tumbled into water

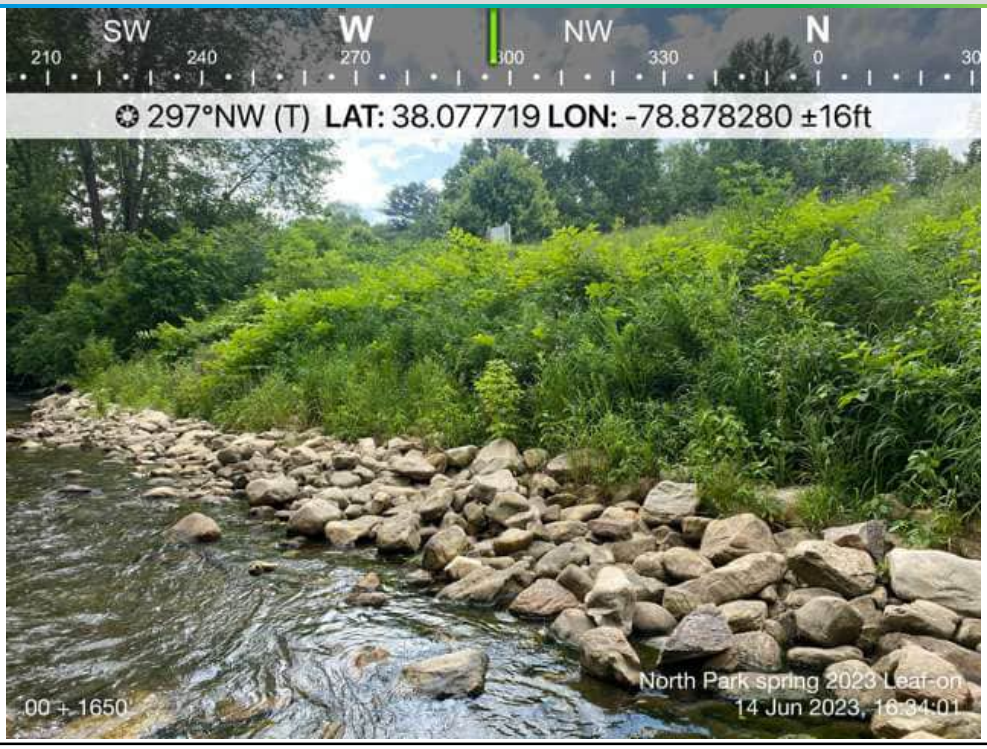
Photo Number: 60	Location: 00 + 1650’

Date: 6/14/2023

Direction: Northwest

Description:

Downstream view of remediated bank; few small boulders have tumbled into water



South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 61	Location: 00 + 1650’

Date: 6/14/2023

Direction: Northeast

Description:

Downstream view of remediated bank, kayak launch area, walking path

Photo Number: 62	Location: 00 + 1700’

Date: 6/14/2023

Direction: North

Description:

~20° lower bank;
~50° upper bank

Vegetation ~95% cover; group of four trees above gravel walking path in good condition; blue gravel eroding toward river with cobbles that have tumbled into the water; walking path remains in fair condition

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 63	Location: 00 + 1700’
Date: 6/14/2023 Direction: Northwest Description: Upstream view of remediated bank; Gravel dust eroding toward water with several cobbles tumbled into water	

Photo Number: 64	Location: 00 + 1700’
Date: 6/14/2023 Direction: Northeast Description: Downstream view of remediated bank Rock toe in stable condition downstream	

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 65	Location: 00 + 1700′

Date: 6/14/2023

Direction: North

Description:

Exposed erosion control fabric along pathway and gravel dust eroding toward river

Photo Number: 66	Location: 00 + 1750′

Date: 6/14/2023

Direction: Southwest

Description:

~20° lower bank;
~65° upper bank

Vegetation ~95% cover, invasive knotweed coverage increased; rock toe intact with jewelweed growing

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 67	Location: 00 + 1800’

Date: 6/14/2023

Direction: North

Description:

~30° lower bank; ~65° upper bank

Vegetation ~80% cover; dead vegetation to right of Sycamore with exposed soil; rock toe intact; walking path in good condition; exposed fabric

Photo Number: 68	Location: 00 + 1850’

Date: 6/14/2023

Direction: North

Description:

~30° lower bank; ~45° upper bank

Vegetation ~95% cover, knotweed cover has increased to ~15%; no at-risk trees present; rock toe and walking path intact

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 69	Location: 00 + 1850′

Date: 6/14/2023

Direction: West

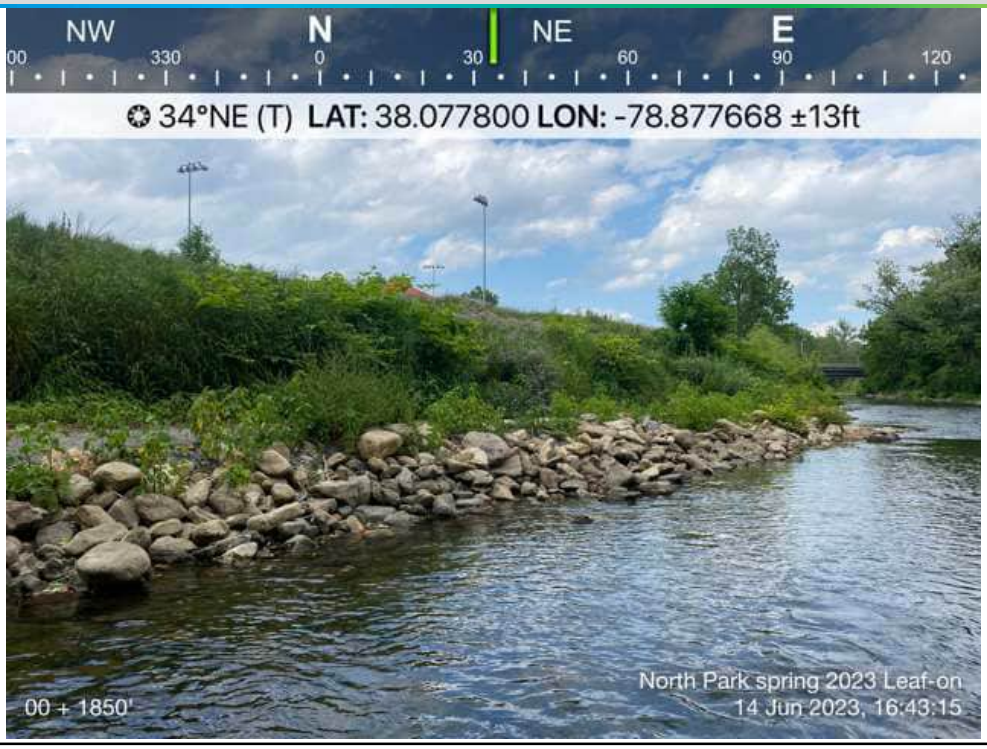
Description:
Upstream view of remediated bank

Photo Number: 70	Location: 00 + 1850′

Date: 6/14/2023

Direction: Northeast

Description:
Downstream view of remediated bank



South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 71	Location: 00 + 1900′

Date: 6/14/2023

Direction: Northwest

Description:

~30° lower bank;
~50° upper bank

Vegetation 100% cover; wooden staircase intact; walking path above rock toe in good condition; erosion control fabric exposed at bottom of stairs

Photo Number: 72	Location: 00 + 1900′

Date: 6/14/2023

Direction: Northwest

Description:

Erosion control fabric exposed at the bottom of downstream river-access stairs

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 73	Location: 00 + 1950'

Date: 6/14/2023

Direction: Northwest

Description:

~20° lower bank;
~70° upper bank

Vegetation 100% cover, increased knotweed coverage ~30%; concrete outfall pipe above rock toe intact; rock toe intact; minimal sediment deposition

Photo Number: 74	Location: 00 + 2000'

Date: 6/14/2023

Direction: Northwest

Description:

~20° lower bank;
~75° upper bank

Vegetation 100% cover; ~10% invasive knotweed cover, no exposed soil; rock toe intact; minimal sediment deposition

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 75	Location: 00 + 2050′
Date: 6/14/2023 Direction: Northwest Description: ~30° lower bank; ~60° upper bank Vegetation 100% cover invasive knotweed coverage ~10%; rock toe intact; minimal sediment deposition	

Photo Number: 76	Location: 00 + 2100′
Date: 6/14/2023 Direction: Northwest Description: ~70° bank angle; vegetation 100% cover; invasive knotweed coverage ~3%; rock toe intact; minimal sediment deposition	

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 77	Location: 00 + 2150′

Date: 6/14/2023

Direction: Northwest

Description:

~70° bank angle

Vegetation 100% cover; rock toe intact; minimal sediment deposition

Photo Number: 78	Location: 00 + 2200′

Date: 6/14/2023

Direction: Northwest

Description:

~60° bank angle

Vegetation 100% cover; one tree mid bank in good condition; rock toe intact; minimal sediment deposition

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 79	Location: 00 + 2200'

Date: 6/14/2023

Direction: West

Description:
Upstream view of remediated bank

Photo Number: 80	Location: 00 + 2200'

Date: 6/14/2023

Direction: Northeast

Description:
Downstream view of remediated bank

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 81	Location: 00 + 2250′

Date: 6/14/2023

Direction: Northwest

Description:

End of 2nd remediated section; ~65° bank angle

Vegetation ~95% cover; one tree mid bank in good condition; footpath at end of remediation; extended rock toe is in good condition

Photo Number: 82	Location: 00 + 2300′

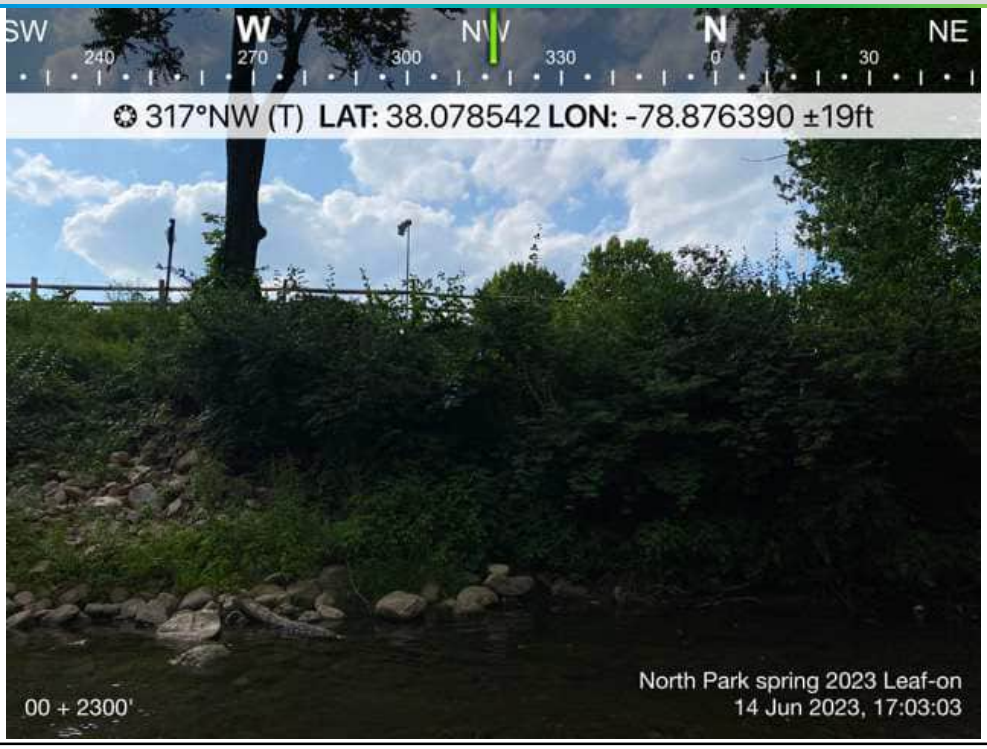
Date: 6/14/2023

Direction: Northwest

Description:

Start of non-remediated section; ~75° bank angle

Woody vegetation throughout bank, grass coverage increased; medium exposed roots mid to lower bank; Box Elder Tree at-risk; bank undercutting with scour



South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 83	Location: 00 + 2350'

Date: 6/14/2023

Direction: Southwest

Description:

~65° bank angle

Woody vegetation mid to upper bank with highly exposed roots; lower density of vegetation adjacent to water's edge

Photo Number: 84	Location: 00 + 2380'

Date: 6/14/2023

Direction: Northwest

Description:

~70° bank angle;

Woody vegetation throughout bank; knotweed coverage ~10%; medium exposed roots mid to lower bank with steep slope; several trees on upper bank in good condition

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 85	Location: North Park greenway path

Date: 6/14/2023

Direction: West

Description:

Greenway above remediated bank in North Park has been paved since the spring 2022 inspection

Trees and grass remain in good condition

Photo Number: 86	Location: North Park greenway path

Date: 6/14/2023

Direction: Northeast

Description:

View of recently paved greenway path

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 87	Location: North Park kayak launch
Date: 6/14/2023 Direction: South Description: Public river access: stairs and kayak launch are in good condition	

Photo Number: 88	Location: North Park
Date: 6/14/2023 Direction: West Description: Greenway above the non-remediated bank segment in North Park in good condition. Thick riparian buffer to the left is in good condition	

South River Photo Log

Attachment E

North Park BMA
2023 Leaf-on Inspection

Photo Number: 89	Location: North Park

Date: 6/14/2023

Direction: Southwest

Description:

Paved greenway path looking Southwest towards the Shiloh Baptist Church BMA

Photo Number: 90	Location: North Park

Date: 6/14/2023

Direction: North

Description:

Basketball court remains in good condition; grasses have grown in around the edge of the court

Attachment E - Table 2
2023 Leaf-on Riparian Vegetation Plots
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Vegetative Species		Absolute % Cover[1]
Scientific Name	**Common Name**	**Spring**
Tree/Vine Stratum		
Acer saccharum	Sugar Maple	0-10
Ampelopsis brevipedunculata	Porcelainberry	5
Catalpa speciosa	Northern Catalpa	0-15
Cercis canadensis	Eastern Redbud	0-25
Clematis terniflora	Sweet Autumn Virginsbower	0-60
Juglans nigra	Black Walnut	15-50
Parthenocissus quinquefolia	Virginia Creeper	2-5
Platanus occidentalis	American Sycamore	0-5
Quercus montana	Chestnut Oak	0-30
Robinia pseudoacacia	Black Locust	0-30
Toxicodendron radicans	Poison Ivy	5-35
Vitis vulpina	Frost Grape	5
Sapling/Shrub Stratum		
Acer rubrum	Red Maple	2-5
Asimina spp.	Pawpaw	0-1
Carya ovata	Shagbark Hickory	0-5
Juglans nigra	Black Walnut	0-25
Lindera benzoin	Spicebush	0-10
Lonicera maackii	Amur Honeysuckle	0-1
Lonicera tatarica	Tatarian Honeysuckle	70-90
Rosa multiflora	Multiflora Rose	5-10
Sambucus spp.	Elderberry	0-30
Viburnum dentatum	Arrowwood	0-2
Herbaceous Stratum		
Acer platanoides	Norway Maple	0-2
Ambrosia sp.	Ragweed sp.	0-1
Carex vulpinoidea	Fox Sedge	0-10
Chasmanthium latifolium	Indian Woodoats	70-80
Conyza canadensis	Horseweed	0-2
Cyperus esculentus	Yellow Nutsedge	0-10
Daucus carota	Wild Carrot	1-1
Elymius riparius	Riverbank Wildrye	0-1
Erigeron philadelphicus	Philadelphia Fleabane	0-1
Festuca rubra	Red Fescue	0-5
Glechoma hederacea	Ground Ivy	0-10
Lactuca virosa	Bitter Lettuce	0-1
Lepidium latifolium	Pepperweed	0-2
Lindera benzoin	Northern Spicebush	0-10
Melilotus officinalis	Yellow Sweetclover	0-1
Phytolacca americana	Pokeberry	0-5
Rubus idaeus	Red Raspberry	0-5
Solidago rugosa	Wrinkleleaf Goldenrod	0-5
Taraxacum spp.	Dandelion	0-1
Vicia sativa	Common Vetch	0-40

Notes:
1. Represents the range observed between two riparian vegetative survey plots per short-term monitoring station.

Attachment E - Waynesboro Off-Site Cap Areas

2023 Leaf-on Inspection Record Sheet
Maintenance Plan

Location and property owner name: **North Park BMA**		
Item	**Status/Maintenance Needs**	**Repairs Needed?**
Access Roads	Parking lot and recently paved greenway path in good condition.	1
Trails	In good condition: greenway was recently paved.	1
Drainage Structures	None.	NA
Outfall Structures	None.	NA
Rip-Rap Protection	Most areas with rip-rap/rock toe in good condition. Recommended replacement and augmentation of cobbles and gravel along walking path and rock toe between approximately 00+1650' and 00+1900'.	2
Cap System Vegetative Cover	Most vegetation has fully established. Estimated percent coverage of Japanese knotweed and other invasives is 10%. Recommended herbicide treatment of invasives in late summer/early fall.	2
Cap System Geosynthetics	Most erosion control fabric has fully deteriorated or is covered by soil and vegetation. Areas with exposed geocell will continue to be monitored in the fall.	1
Cap System Slope Stability	Slope is consistent and stable along remediated sections.	1
Cap System Subsidence	Minor subsidence (shallow trench observed on top of bank) next to greenway trail. Geocell observed protruding from soil in the trench between 00+300' and 00+850'. Bank does not appear to be at immediate risk of a major structural failure and will continue to be monitored to ensure subsidence does not worsen.	2
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:

- AECOM recommends targeted herbicide treatment of Japanese knotweed and other invasives in late summer/early fall.
- Subsidence along top of bank between 00+300' and 00+850' will continue to be monitored during the 2023 Leaf-off inspection. Corrective action may be necessary if subsidence worsens.

Inspected by: Rich Judge and Kimmie Brogan Date: 06/14/2023