SFY 2025

Maryland's CWA §319 Nonpoint Source Program Annual Report

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Nonpoint Source Pollution in Maryland | Tracking and Mitigation

Nonpoint Source Pollution Threatens Maryland's Waterways

Water is inextricably tied to Maryland's identity and culture. The State is traversed by innumerable rivers and streams that provide residents with drinking water, places for recreation, and critically important habitat for Maryland's abundant wildlife. The Chesapeake Bay supports a vibrant fishing industry that provides over 50% of the annual United States blue crab harvest[1]. The primary nonpoint source (NPS) pollutants that threaten this resource are excess nitrogen and phosphorus.

Nonpoint Source pollution threatens the health of Maryland's waterways and comes from both agricultural and developed areas (**Figure 1**). Natural loads include anthropogenic impacts within the natural system, like erosion flows from stormwater runoff that can scour stream banks, as well as true natural sources of nitrogen and phosphorus, such as forests and wetlands. While the NPS pollution focus for Maryland's Chesapeake Bay watershed includes nitrogen, phosphorus, and sediment, those same watersheds are also impaired by other NPS pollution, such as acid mine drainage and toxic contaminants. Approximately 95% of the land in Maryland is part of the Chesapeake Bay watershed.[2] Further information about those loads is reported by the Chesapeake Bay Program. Any nutrient and sediment loads from the other 5% are considered negligible and are not included in this report.

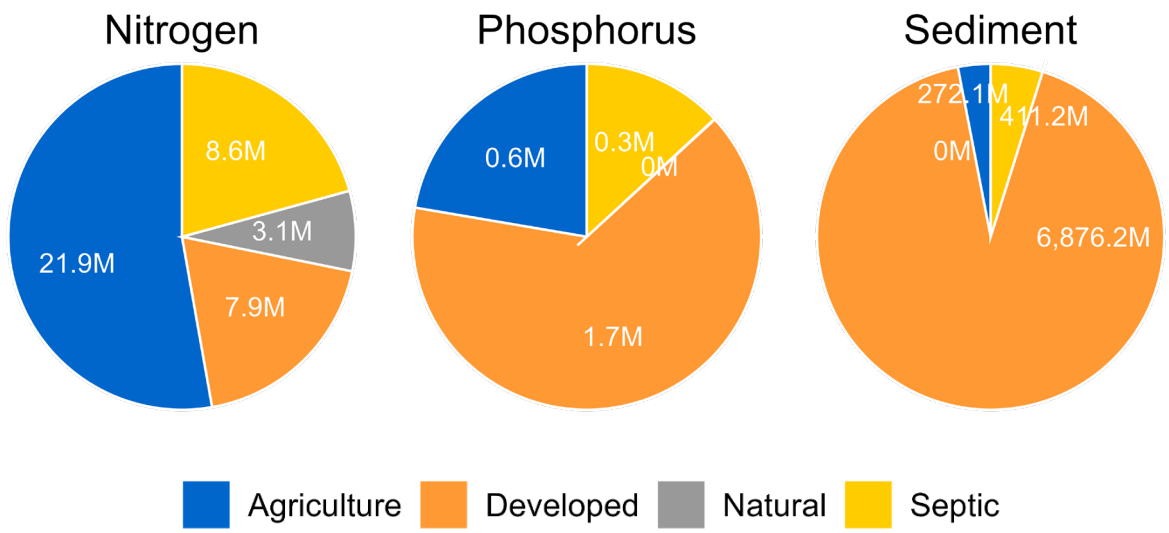


***Figure 1**: Maryland's nitrogen, phosphorus, and sediment loads from NPS delivered to Chesapeake Bay in 2024 (million pounds/year).*

NPS pollution is costly to manage because it originates from diffuse sources across wide areas. The high cost and difficulty of managing this pollution is challenging for local governments that must balance local needs with protecting and restoring aquatic resources.

[1] https://msa.maryland.gov/msa/mdmanual/01glance/html/seafoodp.html
[2] https://www.chesbay.us/library/public/documents/Fact-Sheets/Bay-Factoids-FINAL.pdf

Reducing NPS pollution is accomplished through implementing best management practices (BMPs). This generic name for pollution reduction practices covers a collection of actions, policies, and physical structures that are used to reduce pollution entering waterways[3]. Funding for BMPs comes from local, state, federal, and NGO funding sources, including the §319(h) Grant.

Watershed Modeling

Maryland uses the Chesapeake Assessment and Scenario Tool (CAST) outputs to estimate its load reductions/increases as more of a "real time" assessment of how our efforts are going. CAST uses several data inputs that can affect the loads in our watersheds, BMP implementation being only one of them. Consequently, even with increased BMP implementation the model may assign greater loads to a watershed which offset any reductions achieved through BMP implementation. This variability may be reflected in the tables, graphs, and watershed profiles in this report. In addition, reports from SFY2023 and earlier utilized data from CAST-2019, which has since been updated. The newest version, CAST-2023, was released on May 21, 2024[4], and was utilized for the SFY2024 report and this report. As such, calculated loads may have fluctuated from what was shown in previous reports.

The CAST load calculations used for this report include data from SFY24, which ended on June 30, 2024. Data from SFY25 is still being finalized at the time this report is due. As such, load calculations data from SFY25 will be reported in the next annual report. Typically, our model inputs submission is due Dec. 1st of the following SFY so that there is time allowed to collect information, provide adequate quality assurance/control of the data, and to make sure there are no errors in the modeling results. Additional details regarding the use of CAST to calculate pollutant loads can be found in **Appendix A**.

Overall Load Reductions for Nitrogen, Phosphorus, and Sediment

Maryland has tracked nutrient and sediment reductions since 2010 to align with the Chesapeake Bay Restoration Blueprint. Decreases in nitrogen, phosphorus, and sediment loads can be attributed to land use changes and the implementation of BMPs, including BMPs funded by the §319(h) Grant (**Figure 2)**. Progress toward nutrient reductions derived from NPS sources using the CAST model is separated by sector.

[3] Examples of BMPs – Maryland's Chesapeake Cleanup Center: https://mde.maryland.gov/programs/Water/TMDL/TMDLImplementation/Pages/pollution-in-the-chesapeake.aspx

[4] More information on the history of upgrades to CAST: https://cast.chesapeakebay.net/About/UpgradeHistory

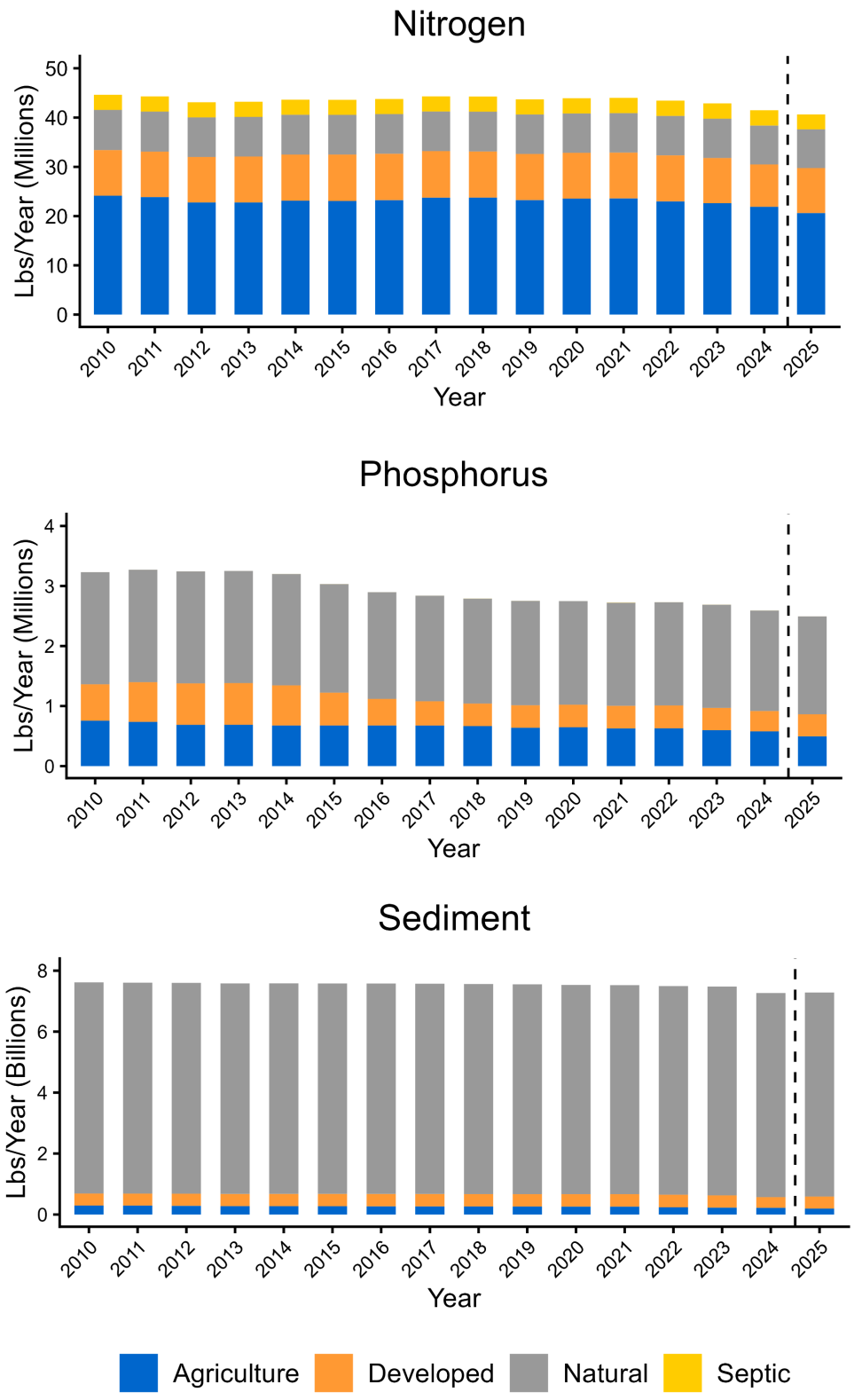


***Figure 2**: Maryland's total nitrogen, total phosphorus, and sediment reduction progress (NPS sources only) towards its 2025 Chesapeake Bay cleanup target*

The total 2025 target loads from NPS sources entering the Chesapeake Bay are 40,643,123 pounds per year of nitrogen, 2,494,483 pounds per year of phosphorus, and 7,281,129,204 pounds per year of sediment. Maryland has made strides toward these goals with loads from NPS sources for 2024 calculated to be 41,492,139 pounds per year for nitrogen, 2,593,050 pounds per year for phosphorus, and 7,266,223,488 pounds per year of sediment, which is 78.7% , 86.6%, and 104.4% progress toward 2025 target loads, respectively (**Table 1**). Target reductions were calculated by multiplying baseline loads from 2010 by one minus the percent reduction required pulled directly from the watershed plan or calculated using Phase III WIP goals.

Table 1: Overall 2024 statewide NPS pollution reductions and percent progress toward target reductions (Million Pounds/Year)[5]

	Target Reduction	Current Reduction	Percent Progress
Nitrogen	3.98	3.13	79%
Phosphorus	0.74	0.64	87%
Sediment	332.61	347.52	104%

[5] This is not solely an evaluation of installed BMPs that were funded by the §319(h) grant but an assessment of all modeled aspects of a watershed, including land use change, animal numbers, septic counts, etc. CAST was used to produce these data. This includes everything nonpoint source related that is also within CAST and specifically for the watersheds identified in this report. The reductions shown are for FY24, as FY25 progress is not made available until after this report is due.

Program Highlights | Maryland's NPS Management Program

Overview: Maryland's Clean Water Act Section 319 Nonpoint Source Management

Maryland's Nonpoint Source Management Program is required by the Federal Clean Water Act (CWA) Section 319 to protect the State's waterways from nonpoint source pollution. Maryland has aligned this program with its commitments and responsibilities in the Chesapeake Bay Agreement[6], the Chesapeake Bay Total Maximum Daily Load (TMDL)[7], and Maryland's Phase III Chesapeake Bay Watershed Implementation Plan (WIP)[8]. This annual FY25 report covers §319 project implementation from July 1, 2024, through June 30, 2025.

Program Administration

Maryland's NPS Management Program, including the §319(h) Grant Program, is administered by Maryland Department of the Environment (MDE) with the assistance of the Maryland Departments of Agriculture and Natural Resources; implementation is carried out by Maryland's local governments and non-governmental organizations. MDE coordinates with local partners to provide grant funding for in-ground projects and report annual progress to EPA.

Annual Reporting for Maryland's §319 Program

EPA requires MDE to produce annual reports demonstrating progress of Maryland's §319 NPS Management Program that document how the State meets §319(h) Grant conditions. This report records the implemented BMPs and funding allocations for each project.

MDE simplified BMP accounting by tracking projects by funding date rather than project completion date. This report also tracks funds allocated to projects rather than project expenditures to more accurately reflect the funds given to a particular watershed for restoration.

This approach was approved in the FFY19 annual report submission. Our modeling/loading results only include actual implementation. In the future we will still do this for overall expenditures in watersheds, but actual reductions will be from completed projects.

Project Selection

To receive §319(h) Grant funding, projects must be implemented within a §319 Priority Watershed (**Figure 3**) that has an A-I Watershed-based Plan accepted by the U.S. Environmental Protection Agency (EPA). A-I plans are submitted to EPA by any combination of Maryland State Agencies, local governments, and non-government organizations.

[6] Chesapeake Bay Agreement: https://www.chesapeakebay.net/what/what_guides_us/watershed_agreement
[7] Chesapeake Bay TMDL: https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-tmdl-document
[8] MD P3 WIP: https://mde.maryland.gov/programs/Water/TMDL/TMDLImplementation/Pages/Phase3WIP.aspx

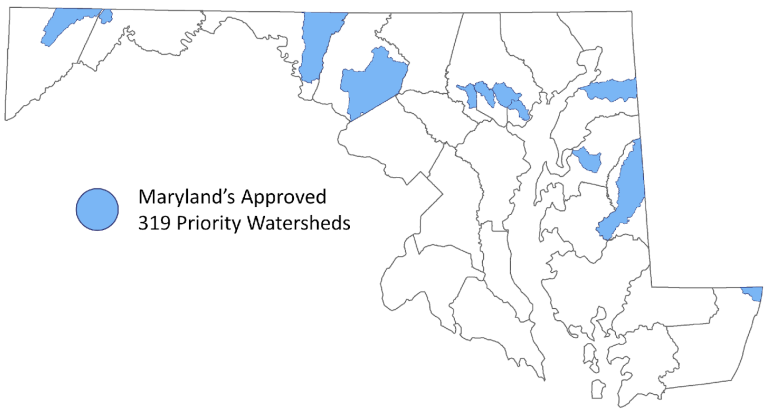


***Figure 3**: Maryland's §319 Priority Watersheds*

Funding: Federal and State Contributions

Over the past 21 years[9], the state of Maryland has spent approximately $78.4 million dollars in State funding along with about $15.4 million additional dollars from the §319(h) Grant to fund projects addressing NPS pollution within §319 watersheds (**Figure 4**).

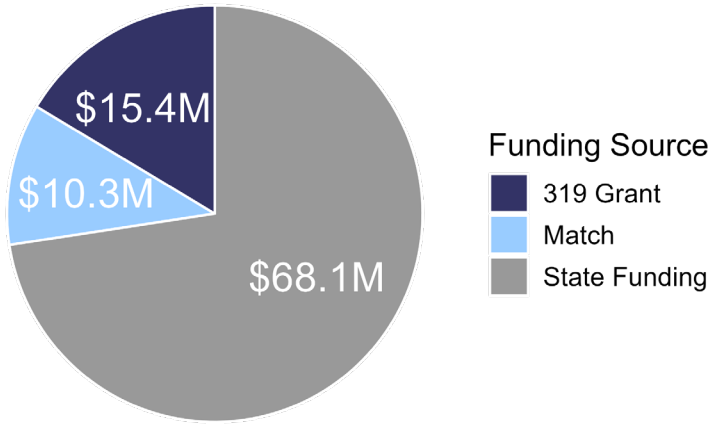


***Figure 4**: Funding spent on NPS pollution in §319 watersheds from SFY2004 - SFY2025.*

In addition to §319(h) Grant funds, Maryland supplies significant State resources to finance programs and projects designed to reduce NPS pollution. In particular, Maryland's Chesapeake and Atlantic Coastal Bays Trust Fund (Trust Fund) is one of the State's primary funding sources for reducing NPS pollution. Maryland's Trust fund provides grant money to local governments and nonprofit organizations

[9]Maryland's first A-I Plan (*Corsica River)* was accepted in 2004.

for implementing NPS pollution water quality restoration projects. For further information, see the Chesapeake and Atlantic Coastal Bays Trust Fund website.

Maintenance of Effort (MOE) vs Federal §319(h) Grant Funds

Maryland contributes more State funds to NPS pollution reduction on an annual basis compared to what it receives through §319(h) Grant funding (**Figure 5**). This year alone, Maryland's NPS pollution control expenditures totaled over $60 million on projects to address nonpoint source pollution, which is much greater than EPA's required minimum of $8.4 million in Maintenance of Effort spending. An additional $2.3 million of federal funding came from the §319(h) Grant to address NPS pollution across the state in SFY25.

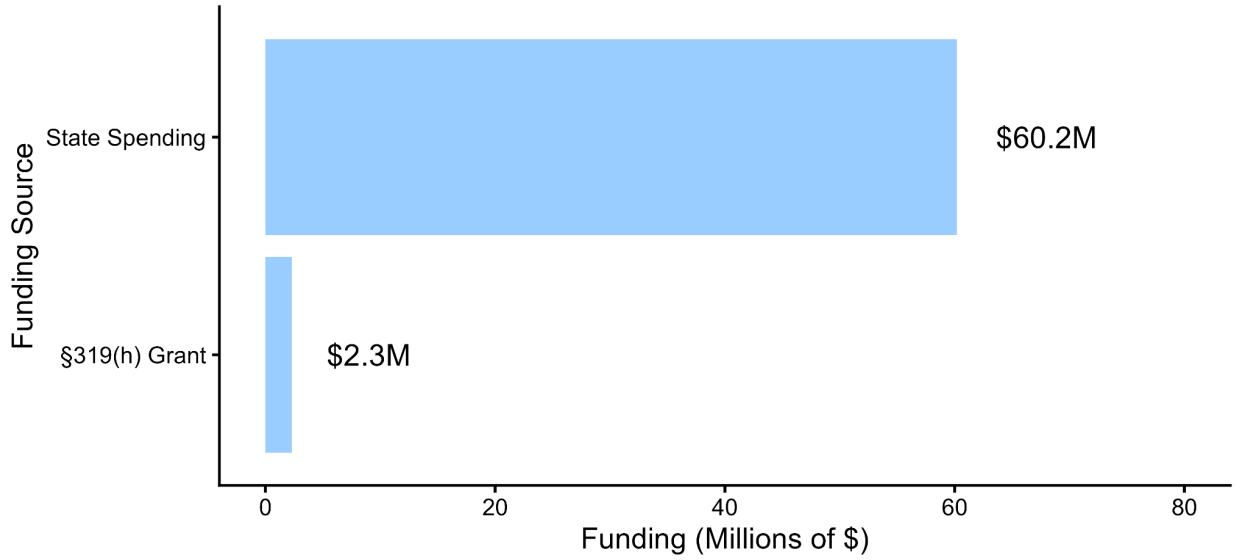


***Figure 5**: Funding spent on projects addressing NPS pollution across the state of Maryland in SFY2025.*

While the §319(h) Grant is a small part of Maryland's total spending on NPS pollution (**Figure 4, Figure 5**), it bridges the gap that local governments often face by leveraging limited funds. Helping local governments maximize their potential resources is a core component of Maryland's Chesapeake Bay Phase III WIP, which was designed to be locally driven and achievable. For detailed funding information, see the *Priority Watersheds* section of this report (*page 10*).

Incorporation of Changing Environmental Conditions in Maryland's NPS Management Program

The §319(h) Grant Program has integrated changing environmental conditions into the criteria that is used to rank and select project proposals.

Progress | Maryland's §319 NPS Management Program

How Maryland Tracks Progress for its NPS Management Program

The State's §319 Priority Watersheds continue to make steady progress in reducing nitrogen and phosphorus loads (**Table 2**); **Appendix A** tracks all NPS pollution in greater detail. For detailed information on individual watershed progress, please see the *Priority Watersheds* section of this report (*page 10*).

Table 2: Overall 2024 NPS pollution reductions and percent progress toward target reductions in §319 Priority Watersheds (Million Pounds/Year)[10]

	Target Reduction	Current Reduction	Percent Progress
Nitrogen	1.83	0.55	30%
Phosphorus	0.12	0.11	90%
Sediment	222.38	70.12	32%

Overall, Maryland and its partners made significant progress in addressing the seven programmatic NPS goals identified in the 2021-2025 Maryland Nonpoint Source Pollution Management Plan. This includes citing pollutant load reductions of 545,109 pounds per year of nitrogen, 105,392 pounds per year of phosphorus, and 70,118,611 pounds per year of sediment resulting from the implementation of all reported structural best management practices (BMPs) in 319 priority watersheds with EPA-accepted watershed-based plans (WBPs), regardless of funding source. These totals include data only for 319 priority watersheds whose WBPs address nutrients and sediment (excludes Casselman River and Upper Jennings Run watersheds). Target reductions were calculated by multiplying baseline loads (loads from the start year for each watershed plan) by one minus the percent reduction required pulled directly from the watershed plan or calculated using Phase III WIP goals.

§319 Success Story

Section 319 nonpoint source pollution success stories highlight water bodies identified by states as being primarily nonpoint source-impaired and having achieved documented water quality improvements. Projects leading to Success Stories received funding from CWA §319 and/or other

[10] This is not solely an evaluation of installed BMPs that were funded by the §319(h) grant but an assessment of all modeled aspects of a watershed, including land use change, animal numbers, septic counts, etc. CAST was used to produce these data. This includes everything nonpoint source related that is also within CAST and specifically for the watersheds identified in this report. The reductions shown are for FY23, as FY24 progress is not made available until after this report is due.

funding sources dedicated to solving NPS impairments. These stories also describe innovative strategies used to reduce NPS pollution, the growth of partnerships, and a diversity of funding sources.

The success stories offer an opportunity for states to highlight where their restoration efforts have resulted in water quality improvements in NPS-impaired water bodies. Developing the stories also allows EPA to track the number of NPS-impaired water bodies that are partially or fully restored, which is a key measure in the effort to document how NPS restoration efforts are improving water quality on a segment basis across the nation.

The two FY25 success stories that Maryland submitted to EPA were entitled, "Muddy Creek Restoration at Smithsonian Environmental Center Reduces Nutrients with Partial Biodiversity Improvement" and "Broad Creek Park Offers Revitalized Greenspace." This fulfilled *Term L. NPS Success Stories* in the Administrative Conditions for the Maryland FFY2024 Nonpoint Source Implementation Grant Award, which states "*The recipient must draft and submit to EPA applicable NPS program success stories which highlight projects resulting in the restoration or improvement of waterbodies. These stories shall be submitted through the success story database in GRTS. A minimum of one water quality restoration (Category 1) Success Story, or two Success Stories from other categories, is/are required each year unless otherwise agreed upon by the state and EPA Regional NPS Coordinator.*"

These two were also listed as success stories for FY24 in Maryland's SFY2024 §319 NPS Program Annual Report; however, two other stories were substituted for that year: "Restoration Spurs Strong Uptick of Life for Washington County Trout Stream" and "Maryland Eastern Shore Town Discovers Value of Modern Stormwater Control Practices, Sparking Interest in Neighboring Communities."

These can be found posted, once available, on MDE's §319 NPS Program webpage and Success Stories Storymap or on EPA's Success Stories webpage or NPS State Success Stories Interactive Map.

Maryland's §319 Priority Watersheds

MDE tracks progress for §319(h) Grant implementation funding and NPS pollution reductions in its §319 Priority Watersheds. As of SFY 2025, twelve watersheds had accepted A-I Watershed Plans and were eligible for §319(h) Grant funding. An additional three watersheds are developing A-I plans to be eligible for future funding through the §319(h) Grant Program. Four watersheds received §319(h) Grant Project funding in SFY 2025: Lower Nanticoke River, Sassafras River, Upper Choptank, and Lower Choptank.

MDE tracks nitrogen, phosphorus, and sediment reductions for all watersheds regardless of the watershed plan specifications; for all NPS pollution tracking and detailed nitrogen, phosphorus, and sediment loads tracking, see Appendix A. For specific information on load reductions for each §319(h) Grant funded project, see EPA's Nonpoint Source (NPS) Watershed Projects Data Explorer, which is an interface for data uploaded to the Grants Reporting and Tracking System (GRTS).

§319(h) Grant Funding

Maryland has applied for and received §319(h) Grant funding since the 1990s, successfully partnering with EPA in the national effort to reduce and mitigate NPS pollution. See **Table 3** for more information on historic §319 Grant Funding. The non-federal match in Table 3 reflects the 40% non-federal program match required under CWA §319(h)(3). Maryland covers the required funds by allocating matching state funding from the Bay Restoration Fund - Septic System Grant Program (BRF-Septic) and/or the Maryland Agricultural Water Quality Cost-Share Program (MACS). This removes the burden of the 40% match from our partnering organizations, increasing organizational capacity to entities that may have the expertise but lack the capital upfront for implementation projects.

Table 3: State and Federal funding contributing to Maryland's §319 Grant each year

State Fiscal Year	§319(h) Grant	Non-Federal Match	Total State and Federal Funds
1990 - 2003	$24,876,369	$16,584,247	$41,460,616
2004	$1,343,290	$895,527	$2,238,817
2005	$1,852,568	$1,235,045	$3,087,613
2006	$2,675,598	$1,783,730	$4,459,328
2007	$2,666,655	$1,777,776	$4,444,431
2008	$2,598,600	$1,732,401	$4,331,001
2009	$2,653,500	$1,769,000	$4,422,500
2010	$2,575,782	$1,717,188	$4,292,970
2011	$2,922,783	$1,948,522	$4,871,305
2012	$2,283,639	$1,522,426	$3,806,065
2013	$2,090,997	$1,393,998	$3,484,995
2014	$1,990,999	$1,327,333	$3,318,332
2015	$2,119,118	$1,412,745	$3,531,863

2016	$2,084,277	$1,389,518	$3,473,795
2017	$2,109,728	$1,406,486	$3,516,214
2018	$2,236,500	$1,491,000	$3,727,500
2019	$2,129,000	$1,419,335	$3,548,335
2020	$2,129,000	$1,419,335	$3,548,335
2021	$2,241,500	$1,494,334	$3,735,834
2022	$2,272,200	$1,514,800	$3,787,000
2023	$2,271,300	$1,514,200	$3,785,500
2024	$2,277,700	$1,518,467	$3,796,167
2025	$2,288,000	$1,525,334	$3,813,334
Post 2004 Totals	$49,812,734	$33,208,500	$83,021,234

Maryland tracks annual §319(h) Grant federal vs state contributions since 1990 (**Table 4)**. However, tracking Priority Watershed progress did not begin until the first watershed plan for Corsica River was approved in 2004.

Table 4[11]: Cumulative spending by funding source for each §319 Priority Watershed

Priority Watershed	Plan Start Date	Chesapeake and Atlantic Bays Trust Fund	State Revolving Fund	Total Non-319 Funds	319(h) Grant	Total Funds
Antietam Creek	2012	$1,819,028	$424,600	$2,243,628	$3,923,809	$6,167,437
Assawoman Bay	2020	$0	$0	$0	$10,000	$10,000
Back River: Tidal	2010	$8,905,742	$12,724,100	$21,629,842	$3,954,253	$23,885,190
Back River: Upper	2008	-	-	-	-	-
Casselman River	2011	$173,439	$0	$173,439	$83,619	$257,058
Choptank River: Upper	2010	$2,003,748	$0	$2,003,748	$3,565,892	$5,569,640
Corsica River	2004	$1,659,485	$0	$1,659,485	$2,137,406	$3,796,891
Gwynns Falls: Middle	2014	$10,788,232	$9,546,741	$20,334,973	$1,383,944	$21,718,917
Jennings Run: Upper	2019	$68,267	$0	$68,267	$0	$68,267
Jones Falls: Lower	2008	$6,915,195	$100,664	$7,015,859	$462,309	$7,478,168
Monocacy River: Lower	2008	$5,082,209	$0	$5,082,209	$1,143,305	$6,225,514
Sassafras River	2009	$7,909,402	$0	$7,909,402	$425,748	$8,335,150
Watershed Totals		**$45,324,749**	**$22,796,105**	**$68,120,854**	**$15,391,380**	**$83,512,234**

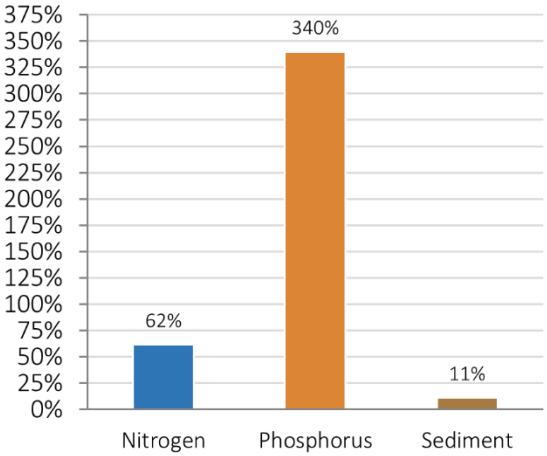
[11] The funding for Back River: Tidal and Upper is linked due to project overlap, even though it is separated in this table.

Watershed Profile

Antietam Creek

Percent Progress Towards Target

Nitrogen, Phosphorus, Sediment



*Watershed plan includes bacteria – See Appendix B

Land Use

Total Acres | **119K**

Agriculture | **39%**

Developed | **23%**

Natural | **38%**

NPS Reduction Progress

From 2012 to 2024, Antietam Creek is 62% toward its 71K lbs/yr nitrogen reduction goal, 340% toward its 5K lbs/yr phosphorus reduction goal, and 11% toward its 68.8M lbs/yr sediment reduction goal.

Watershed Funding | SFY12 – SFY25

Cumulative NPS Reductions

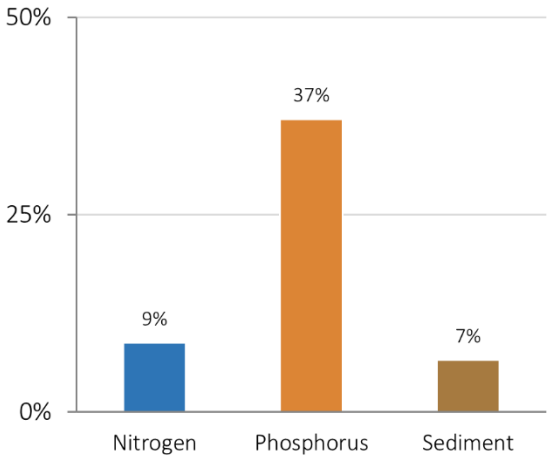
Funding Source	Nitrogen | lbs/yr	Phosphorus | lbs/yr	Sediment | lbs/yr
319(h) Grant	1.9K	1.0K	0.0M
All Else	41.9K	16.7K	7.6M
Total	**43.7K**	**17.7K**	**7.6M**

Watershed Profile

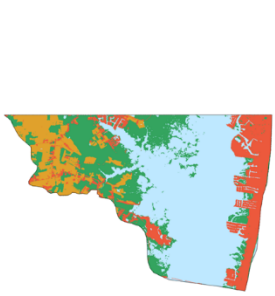
Assawoman Bay

Percent Progress Towards Target

Nitrogen, Phosphorus, Sediment



Land Use



Total Acres | **6K**

Agriculture | **21%**

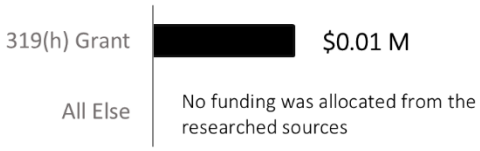
Developed | **34%**

Natural | **45%**

NPS Reduction Progress

From 2020 to 2024, Assawoman Bay is 9% toward its 25K lbs/yr nitrogen reduction goal, 37% toward its 0.5K lbs/yr phosphorus reduction goal, and 7% toward its 2.3 M lbs/yr sediment reduction goal.

Watershed Funding | SFY20 – SFY25



Cumulative NPS Reductions

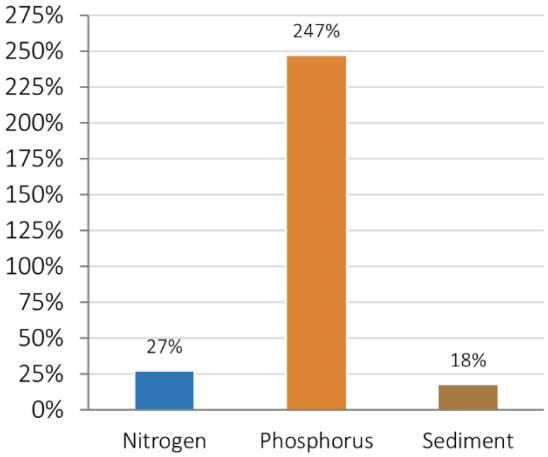
Funding Source	Nitrogen | lbs/yr	Phosphorus | lbs/yr	Sediment | lbs/yr
319(h) Grant	0.0K	0.0K	0.0M
All Else	2.2K	0.2K	0.2M
Total	**2.2K**	**0.2K**	**0.2M**

Watershed Profile

Back River: Tidal

Percent Progress Towards Target

Nitrogen, Phosphorus, Sediment



Land Use

Total Acres | **16K**

Agriculture | **2%**

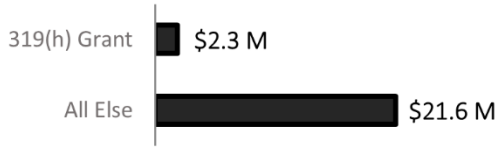
Developed | **66%**

Natural | **32%**

NPS Reduction Progress

From 2010 to 2024, Back River (Tidal) is 27% toward its 15K lbs/yr nitrogen reduction goal, 247% toward its 2K lbs/yr phosphorus reduction goal, and 18% toward its 12.8 M lbs/yr sediment reduction goal.

Watershed Funding* | SFY10 – SFY25



*Funding linked to Back River: Upper due to project overlaps

Cumulative NPS Reductions

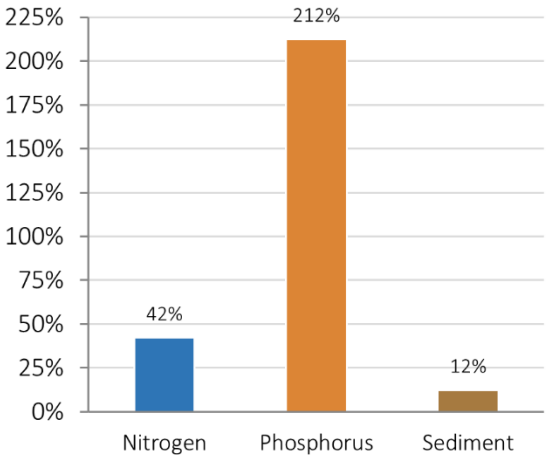
Funding Source	Nitrogen | lbs/yr	Phosphorus | lbs/yr	Sediment | lbs/yr
319(h) Grant	0.3K	0.1K	0.0M
All Else	3.8K	4.3K	2.3M
Total	**4.1K**	**4.4K**	**2.3M**

Watershed Profile

Back River: Upper

Percent Progress Towards Target

Nitrogen, Phosphorus, Sediment



Land Use

Total Acres | **20K**

Agriculture | **0%**

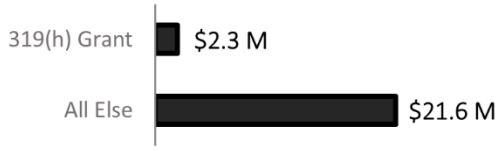
Developed | **85%**

Natural | **15%**

NPS Reduction Progress

From 2008 to 2024, Upper Back River is 42% toward its 25K lbs/yr nitrogen reduction goal, 212% toward its 2K lbs/yr phosphorus reduction goal, and 12% toward its 32.4 M lbs/yr sediment reduction goal.

Watershed Funding* | SFY08 – SFY25



*Funding linked to Back River: Tidal due to project overlaps

Cumulative NPS Reductions

Funding Source	Nitrogen | lbs/yr	Phosphorus | lbs/yr	Sediment | lbs/yr
319(h) Grant	1.4K	0.7K	0.0M
All Else	9.1K	3.9K	4.0M
Total	**10.5K**	**4.6K**	**4.0M**

Watershed Profile

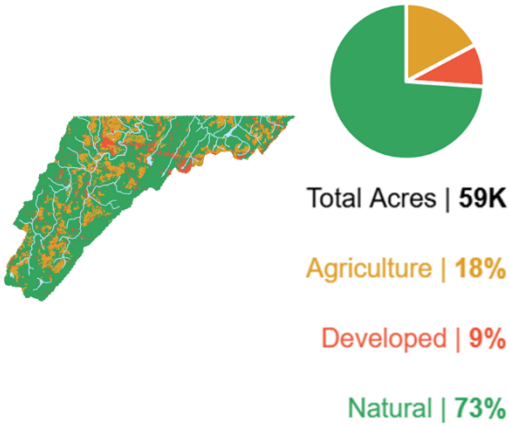
Casselman River

NPS Reduction Progress

The watershed-based plan for the Casselman River only addresses pH impairment. From 2011 to 2025, there has only been one project funded in this watershed greater than $10k, which was the implementation of limestone sand in multiple locations to address pH impairment. The cause of any reductions in nitrogen, phosphorus, and sediment loads is unknown and may result from natural variations or projects that were funded by organizations not recorded in this report. MDE is working to establish relationships with the local government and other organizations in Garrett County to pursue future projects that may be funded by the §319(h) grant. The restoration of the Casselman River is highlighted in multiple success stories, demonstrating how acid mine drainage remediation can restore impaired waters. See delistings in Table A-4.

Snyder Sand Application Site
Photo courtesy of MDE, Abandoned Mine Lands Division

Land Use



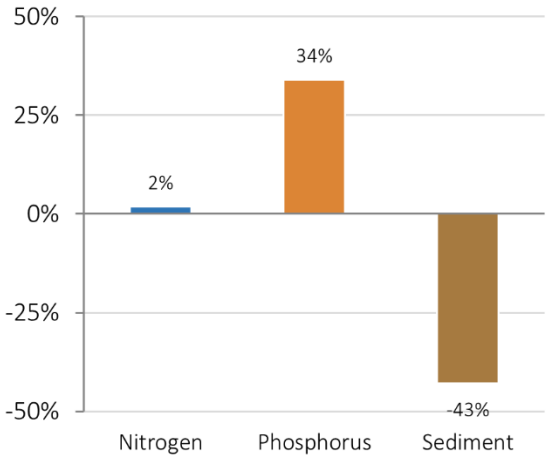
Watershed Funding | SFY11 – SFY25

Watershed Profile

Choptank River: Upper

Percent Progress Towards Target

Nitrogen, Phosphorus, Sediment



Land Use

Total Acres | **154K**

Agriculture | **53%**

Developed | **11%**

Natural | **36%**

NPS Reduction Progress

From 2010 to 2024, Upper Choptank River is 2% toward its 1.1M lbs/yr nitrogen reduction goal, 34% toward its 28K lbs/yr phosphorus reduction goal, and -43% toward its 24.0M lbs/yr sediment reduction goal. Despite falling short of sediment reduction goals, progress improved by 17% compared to 2023.

Watershed Funding | SFY10 – SFY25

Cumulative NPS Reductions

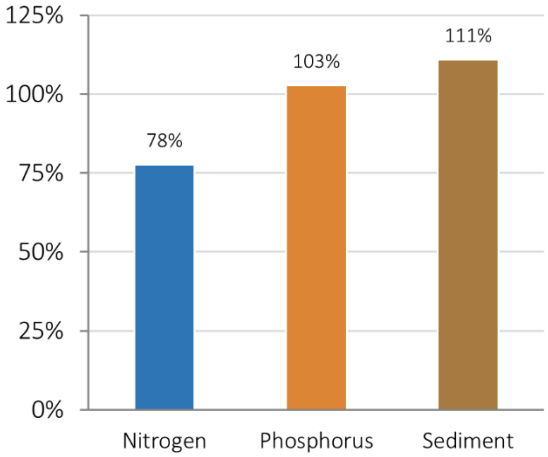
Funding Source	Nitrogen | lbs/yr	Phosphorus | lbs/yr	Sediment | lbs/yr
319(h) Grant	2.8K	0.6K	0.0M
All Else	16.4K	9.0K	-10.3M
Total	**19.2K**	**9.6K**	**-10.3M**

Watershed Profile

Corsica River

Percent Progress Towards Target

Nitrogen, Phosphorus, Sediment



Land Use

Total Acres | **23K**

Agriculture | **52%**

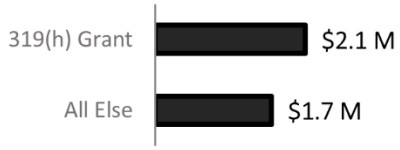
Developed | **13%**

Natural | **35%**

NPS Reduction Progress

From 2004 to 2024, Corsica River is 78% toward its 64K lbs/yr nitrogen reduction goal, 103% toward its 7K lbs/yr phosphorus reduction goal, and 111% toward its 2.0 M lbs/yr sediment reduction goal.

Watershed Funding | SFY04 – SFY25



Cumulative NPS Reductions

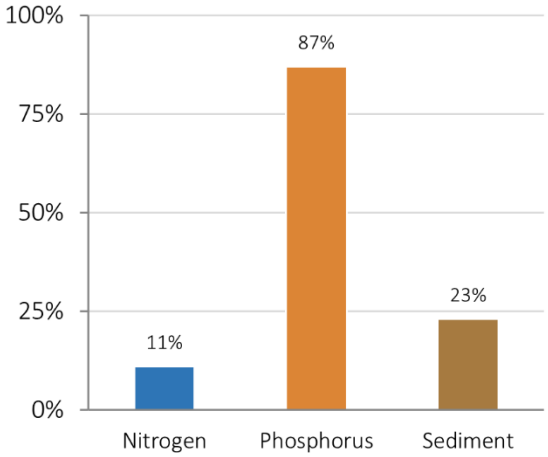
Funding Source	Nitrogen | lbs/yr	Phosphorus | lbs/yr	Sediment | lbs/yr
319(h) Grant	4.9K	0.5K	0.0M
All Else	45.1K	7.2K	2.2M
Total	**50.0K**	**7.7K**	**2.2M**

Watershed Profile

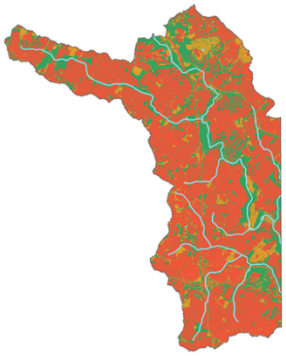
Gwynns Falls: Middle

Percent Progress Towards Target

Nitrogen, Phosphorus, Sediment



Land Use



Total Acres | **31K**

Agriculture | **0%**

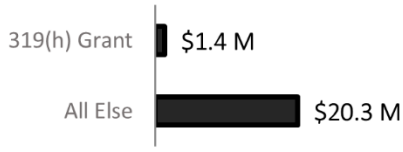
Developed | **78%**

Natural | **22%**

NPS Reduction Progress

From 2014 to 2024, Middle Gwynns Falls is 11% toward its 88K lbs/yr nitrogen reduction goal, 87% toward its 12K lbs/yr phosphorus reduction goal, and 23% toward its 22.9 M lbs/yr sediment reduction goal.

Watershed Funding* | SFY14 – SFY25



*Funding calculations include 2 projects starting in SFY2013. The watershed plan was being drafted in 2013 and was accepted by EPA in 2014.

Cumulative NPS Reductions

Funding Source	Nitrogen | lbs/yr	Phosphorus | lbs/yr	Sediment | lbs/yr
319(h) Grant	4.3K	1.7K	0.0M
All Else	5.7K	8.5K	5.3M
Total	**10.1K**	**10.2K**	**5.3M**

Watershed Profile

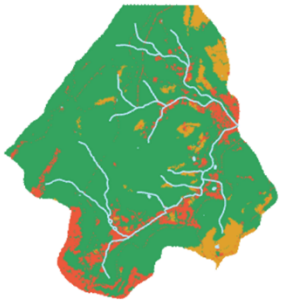
Jennings Run: Upper

NPS Reduction Progress

Currently, the watershed-based plan for the Upper Jennings Run only addresses pH impairment. From 2019 to 2025, there have been no implementation projects funded by the §319(h) grant or other state funding sources included in this report. The cause of any reductions in nitrogen, phosphorus, and sediment loads is unknown and may result from natural variations or projects that were funded by organizations not recorded in this report. MDE is working to establish relationships with the local government and other organizations in Allegany County to pursue future projects that may be funded by the §319(h) grant. Initial biological community assessments have been conducted, and analysis proceed once there is sufficient data available.

Photo courtesy of MDE, Upper Jennings Run Watershed Implementation Plan

Land Use



Total Acres | **19K**

Agriculture | **9%**

Developed | **12%**

Natural | **79%**

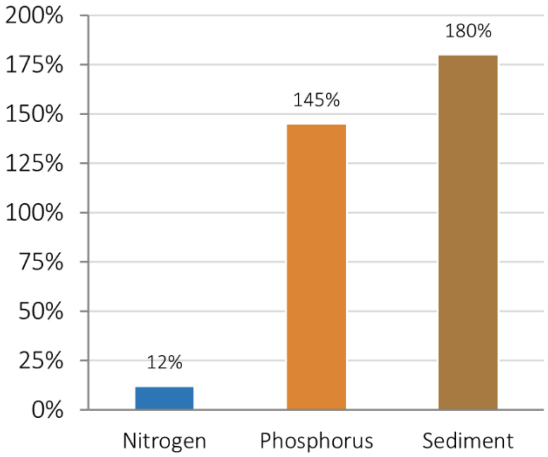
Watershed Funding | SFY19 – SFY25

Watershed Profile

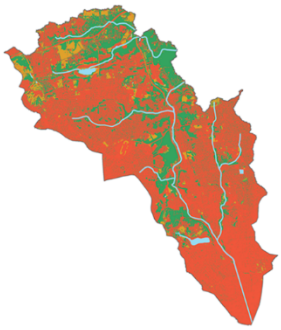
Jones Falls: Lower

Percent Progress Towards Target

Nitrogen, Phosphorus, Sediment



Land Use



Total Acres | **37K**

Agriculture | **3%**

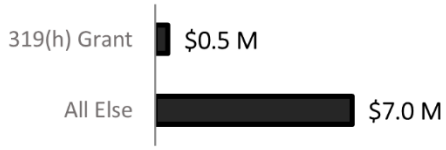
Developed | **67%**

Natural | **30%**

NPS Reduction Progress

From 2008 to 2024, Lower Jones Falls is 12% toward its 100K lbs/yr nitrogen reduction goal, 145% toward its 6K lbs/yr phosphorus reduction goal, and 180% toward its 6.1M lbs/yr sediment reduction goal.

Watershed Funding | SFY08 – SFY25



Cumulative NPS Reductions

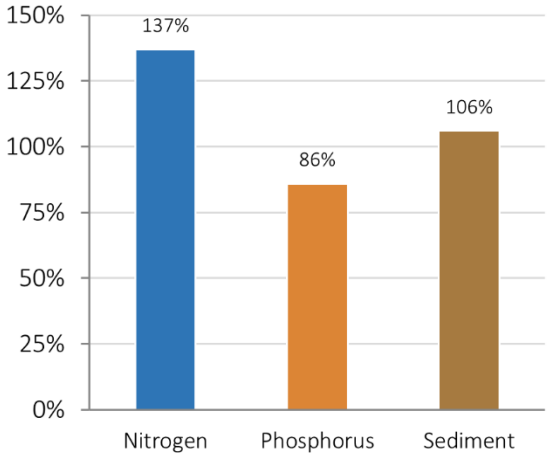
Funding Source	Nitrogen | lbs/yr	Phosphorus | lbs/yr	Sediment | lbs/yr
319(h) Grant	0.1K	0.1K	0.0M
All Else	12.1K	9.2K	11.0M
Total	**12.2K**	**9.2K**	**11.0M**

Watershed Profile

Monocacy River: Lower

Percent Progress Towards Target

Nitrogen, Phosphorus, Sediment



Land Use

Total Acres | **195K**

Agriculture | **34%**

Developed | **27%**

Natural | **39%**

NPS Reduction Progress

From 2008 to 2024, Monocacy River: Lower is 137% toward its 228K lbs/yr nitrogen reduction goal, 86% toward its 41K lbs/yr phosphorus reduction goal, and 106% toward its 41 M lbs/yr sediment reduction goal.

Watershed Funding | SFY08 – SFY25

Cumulative NPS Reductions

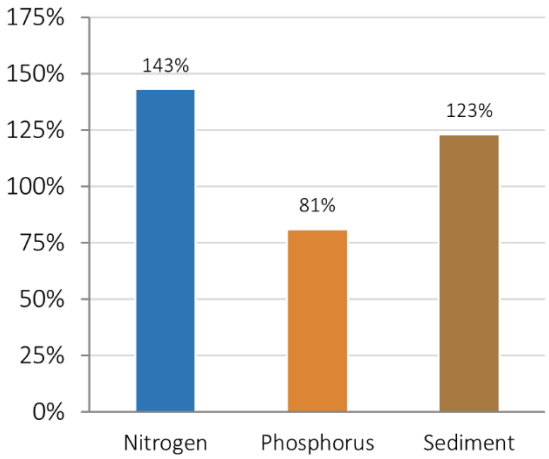
Funding Source	Nitrogen | lbs/yr	Phosphorus | lbs/yr	Sediment | lbs/yr
319(h) Grant	0.7K	0.2K	0.0M
All Else	311.1K	34.8K	43.5M
Total	**311.8K**	**35.0K**	**43.5M**

Watershed Profile

Sassafras River

Percent Progress Towards Target

Nitrogen, Phosphorus, Sediment



Land Use

Total Acres | **47K**

Agriculture | **57%**

Developed | **11%**

Natural | **32%**

NPS Reduction Progress

From 2009 to 2024, Sassafras River is 143% toward its 57K lbs/yr nitrogen reduction goal, 81% toward its 9K lbs/yr phosphorus reduction goal, and 123% toward its 3.6 M lbs/yr sediment reduction goal.

Watershed Funding | SFY09 – SFY25

Cumulative NPS Reductions

Funding Source	Nitrogen | lbs/yr	Phosphorus | lbs/yr	Sediment | lbs/yr
319(h) Grant	4.2K	0.3K	0.0M
All Else	77.2K	6.7K	4.5M
Total	**81.4K**	**6.9K**	**4.5M**

Appendix A | NPS Load Tracking

Nutrient and Sediment Tracking

Maryland tracks nutrient and sediment reductions for §319 Priority Watersheds using the Chesapeake Assessment Scenario Tool (CAST). In the following tables (A - 1 to A - 3), Reduction Source Document refers to how the Percent Reduction Required (PRR) was determined. All loads are reported as Edge of Stream: the nutrient and sediment entering directly into local waterbodies from the adjoining land.

The percent reduction for Watershed Plan was taken from the approved watershed plan. If no such number was given, PRR was calculated as the percent reduction of the watershed's Plan Start Date (PSD) NPS load necessary to achieve the watershed's TMDL for nitrogen, phosphorus, or sediment. If no TMDL was available, or the TMDL was exceeded, PRR was calculated as the percent reduction required of the watershed's PSD NPS load to achieve the watershed's Phase III WIP nutrient or sediment goals.

Maryland uses the Chesapeake Assessment and Scenario Tool (CAST) outputs to estimate its load reductions/increases as more of a "real time" assessment of how our efforts are going. CAST uses a number of data inputs that can affect the loads in our watersheds, BMP implementation being only one of them. Consequently, even with increased BMP implementation the model may assign greater loads to a watershed which offset any reductions achieved through BMP implementation. This variability is reflected in the tables and watershed profiles included in this section. Baseline loads were extracted directly from CAST and represent the load during a watershed's PSD. Target loads were calculated as ((1 – PRR) * Baseline Loads). Current Loads represent 2024 Progress loads in CAST for each watershed.

As previously mentioned, the load calculations data from CAST is up to SFY24, which ended on June 30, 2024. SFY25 progress has yet to be finalized at the time that this report is due. Progress in SFY25 will be included in the next annual report.

§319 Reductions come from the individual project calculations provided to MDE in the watershed work plans. Non-§319 Reductions are calculated as ((PSD - Current Loads) - §319 Reductions).

Negative values in the charts below connotate increases in load. CAST is a dynamic model whose output may show variation from year to year due to BMP retirement or annual BMP variation that may increase loads in some areas based on land use conditions.

Table A - 1: Nitrogen Tracking for 2024 (Edge of Stream loads - Pounds/Year)

Priority Watershed	Plan Start Date	Reduction Source Document	Percent Reduction Required	Baseline Loads	Target Loads	Current Loads (2022)	319 Reductions	Non-319 Reductions	Total Reductions	Target Reductions	Percent Progress
Antietam Creek	2012	Phase III WIP	5%	1,300,084	1,229,075	1,256,345	1,855	41,885	43,739	71,009	62%
Assawoman Bay	2020		19%	131,750	106,765	129,566	0	2,184	2,184	24,985	9%
Back River: Tidal	2010	Watershed Plan	15%	98,847	84,020	94,787	280	3,780	4,060	14,827	27%
Back River: Upper	2008	Watershed Plan	15%	166,230	141,296	155,726	1,419	9,085	10,504	24,935	42%
Casselman River	2011	Phase III WIP									
Choptank River: Upper	2010	Watershed Plan	39%	2,700,212	1,647,129	2,681,023	2,824	16,365	19,189	1,053,083	2%
Corsica River	2004	Local TMDL	20%	322,428	258,108	272,444	4,873	45,111	49,984	64,320	78%
Gwynns Falls: Middle	2014	Watershed Plan	29%	302,954	215,097	292,874	4,340	5,739	10,079	87,857	11%
Jennings Run: Upper	2019	Phase III WIP									
Jones Falls: Lower	2008	Watershed Plan	22%	446,290	346,321	434,129	90	12,070	12,160	99,969	12%
Monocacy River: Lower	2008	Phase III WIP	7%	3,336,578	3,108,395	3,024,800	726	311,052	311,778	228,183	137%
Sassafras River	2009	Watershed Plan	9%	627,891	570,753	546,461	4,204	77,226	81,430	57,138	143%
Watershed Totals *(Nitrogen)*				**9,517,616**	**8,117,480**	**9,333,492**	**20,611**	**163,514**	**184,124**	**1,400,136**	

Table A - 2: Phosphorus Tracking for 2024 (Edge of Stream loads - Pounds/Year)

Priority Watershed	Plan Start Date	Reduction Source Document	Percent Reduction Required	Baseline Loads	Target Loads	Current Loads (2022)	319 Reductions	Non-319 Reductions	Total Reductions	Target Reductions	Percent Progress
Antietam Creek	2012	Local TMDL	7%	72,390	67,196	54,735	957	16698	17655	5194	340%
Assawoman Bay	2020		9%	5,079	4,625	4,911	0	169	169	454	37%
Back River: Tidal	2010	Watershed Plan	15%	11,945	10,153	7,513	94	4338	4432	1792	247%
Back River: Upper	2008	Watershed Plan	15%	14,444	12,277	9,840	737	3867	4603	2167	212%
Casselman River	2011	Phase III WIP									
Choptank River: Upper	2010	Watershed Plan	28%	100,317	72,228	90,761	603	8953	9555	28089	34%
Corsica River	2004	Phase III WIP	50%	14,846	7,386	7,175	458	7213	7671	7460	103%
Gwynns Falls: Middle	2014	Watershed Plan	45%	25,979	14,263	15,780	1,690	8509	10199	11717	87%
Jennings Run: Upper	2019	Phase III WIP									
Jones Falls: Lower	2008	Watershed Plan	30%	21,635	15,253	12,395	91	9,150	9,241	6,382	145%
Monocacy River: Lower	2008	Phase III WIP	40%	101,112	60,276	66,159	169	34,784	34,953	40,837	86%
Sassafras River	2009	Watershed Plan	34%	25,096	16,588	18,183	254	6,659	6,913	8,507	81%
Watershed Totals *(Phosphorus)*				**396,724**	**302,168**	**315,291**	**5,052**	**76,380**	**81,433**	**94,556**	

Table A - 3: Sediment Tracking for 2024 (Edge of Stream loads - Pounds/Year)

Priority Watershed	Plan Start Date	Reduction Source Document	Percent Reduction Required	Baseline Loads	Target Loads	Current Loads (2022)	319 Reductions	Non-319 Reductions	Total Reductions	Target Reductions	Percent Progress
Antietam Creek	2012	Watershed Plan	52%	132,811,072	63,992,098	125,179,763	11,918	7,619,391	7,631,309	68,818,974	11%
Assawoman Bay	2020		27%	8,560,125	6,237,597	8,407,698	0	152,427	152,427	2,322,528	7%
Back River: Tidal	2010	Local TMDL	68%	18,880,593	6,041,790	16,587,799	428	2,292,366	2,292,794	12,838,803	18%
Back River: Upper	2008	Local TMDL	68%	47,781,280	15,290,010	43,779,177	981	4,001,122	4,002,103	32,491,270	12%
Casselman River	2011	Phase III WIP									
Choptank River: Upper	2010	Phase III WIP	34%	71,068,967	47,059,716	81,387,861	7,922	(10,326,816)	(10,318,894)	24,009,252	-43%
Corsica River	2004	Phase III WIP	19%	10,528,898	8,553,115	8,336,382	1,520	2,190,996	2,192,516	1,975,783	111%
Gwynns Falls: Middle	2014	Local TMDL	37%	61,902,596	38,998,635	56,651,396	3,768	5,247,431	5,251,200	22,903,960	23%
Jennings Run: Upper	2019	Phase III WIP									
Jones Falls: Lower	2008	Watershed Plan	8%	74,493,210	68,384,766	63,517,285	173	10,975,752	10,975,925	6,108,443	180%
Monocacy River: Lower	2008	Phase III WIP	16%	259,544,915	218,511,178	216,096,157	75	43,448,684	43,448,759	41,033,738	106%
Sassafras River	2009	Watershed Plan	15%	24,619,654	20,975,946	20,129,182	187	4,490,285	4,490,472	3,643,709	123%
Watershed Totals *(Sediment)*				**728,735,848**	**583,150,047**	**749,755,744**	**26,973**	**(21,046,869)**	**(21,019,896)**	**145,585,801**	

Other NPS Pollution – Bacteria

MDE does not currently have a system for tracking bacteria reductions within priority watersheds. Bacteria concentrations and loads tend to be highly variable and difficult to track, particularly when assessing the effectiveness of restoration. The State will continue to evaluate new tools, technologies, and monitoring designs to track progress towards applicable bacteria TMDLs in the future. This largely applies to the Antietam Creek priority watershed plan, which addresses the Bacteria TMDL for the watershed.

Other NPS Pollution – pH Impairments

The Casselman River and Upper Jennings Run priority watershed plans were developed to address the low pH impairment listings due to acid mine drainage. Rather than directly tracking pH, Maryland tracks pH remediation by evaluating how many streams within these watersheds have been successfully delisted for a pH impairment (**Table A - 4**), based on pre- and post-BMP implementation monitoring. Currently, four water quality segments within the Casselman River watershed have been delisted for pH.

In the Casselman River and Upper Jennings Run, restoration efforts to remediate low pH impairment listings are reported by MDE's Abandoned Mine Land program in an annual report.

Table A - 4: Casselman River sub-watersheds delisted for pH impairments

Casselman River | pH Delistings			
River Name	**HUC-12 Watershed**	**Impairment**	**Listing Category**
Alexander Run	050202040032	pH, Low	2 – Meets water quality criteria for the specified pollutant
Big Laurel Run	050202040033	pH, Low	2 – Meets water quality criteria for the specified pollutant
Spiker Run	050202040034	pH, Low	2 – Meets water quality criteria for the specified pollutant
Tarkiln Run	050202040032	pH, Low	2 – Meets water quality criteria for the specified pollutant

Estimating BMP Reductions

The following tables provide information on active Best Management Practices that were accepted in the CAST tool. Many of the priority watersheds received funding and completed projects before any watershed plan was approved, and other BMPs will have been implemented through a number of different funding sources and partners. The results below use CAST BMP efficiency assumptions that have been altered by local delivery factors for the Priority watersheds to better simulate the potential reductions BMPs would be able to produce if no baseline changes were altered. Delivery factors represent the fate and transport of nutrients and sediment from the land to the water. So, the higher the delivery factor, the higher the amount of nutrients and sediment are likely to run off from that area. These tables also reflect active BMPs in SFY24 and will change in SFY25 as BMPs are not verified and no longer receive credit. The BMP implementation numbers are taken from CAST inputs, which may vary

year to year as BMPs fail, do not get verified, new reporting partners come online, or get included in other model data inputs (e.g. tree planting BMPs become forests). Annual variability is to be expected.

MD-02070040 10 - Antietam Creek Permit Approval 2012/Washington Co.	Duration	Unit	Measure	LBS Reduced Nitrogen	Phosphorus	Sediment
Agriculture Practices						
Nutrient Management						
Core Nitrogen	annual	Acres	26,896.70	31,084.25	-	-
Rate Nitrogen	annual	Acres	11,566.39	4,492.73	-	-
Placement Nitrogen	annual	Acres	1,298.77	1,063.19	-	-
Timing Nitrogen	annual	Acres	803.16	661.01	-	-
Core Phosphorus	annual	Acres	26,896.70	-	1,810.42	-
Rate Phosphorus	annual	Acres	4,130.21	-	106.64	-
Placement Phosphorus	annual	Acres	1,167.68	-	14.76	-
Timing Phosphorus	annual	Acres	-	-	-	-
TOTAL				37,301.18	1,931.82	-
Tillage Management						
Conservation	annual	Acres	7,131.31	15,185.42	1,500.13	5,917,598.39
Continuous High Residue	annual	Acres	11,864.13	35,366.51	3,135.45	18,969,390.26
Low Residue	annual	Acres	-	-	-	-
TOTAL				50,551.93	4,644.58	24,886,988.65
Cover Crop						
Traditional	annual	Acres	6,029.12	13,851.83	-	-
Commodity	annual	Acres	3,897.01	6,915.19	-	-
TOTAL				20,767.02	-	-
Pasture Management						
Alternative Watering	cumulative	Acres	3,411.00	1,764.78	332.78	4,568.32
Prescribed Grazing	cumulative	Acres	1,371.22	1,341.87	401.34	5,570.15
Horse Pasture Management	cumulative	Acres	11.22	-	2.75	60.51
Forest Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	51.84	4,247.63	913.04	646,966.90
Grass Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	19.16	1,532.09	332.18	238,614.90
TOTAL				8,886.37	1,982.09	895,780.77
Forest Buffers	cumulative	Acres in Buffers	715.44	27,665.38	329.84	1,675,016.75
Wetland Restoration	cumulative	Acres	12.65	384.49	7.60	25,023.63
Wetland Creation	cumulative	Acres	3.85	64.73	1.23	4,644.43
Wetland Enhancement and Rehabilitation	cumulative	Acres	86.23	209.29	10.09	8,417.01
Land Retirement to Open Space	cumulative	Acres	517.78	6,385.32	-	671,669.05
Land Retirement to Pasture	cumulative	Acres	269.41	8,377.58	47.59	648,711.94
Grass Buffers	cumulative	Acres in Buffers	113.62	3,533.20	20.07	273,590.70
Tree Planting	cumulative	Acres	154.89	2,191.33	27.82	168,696.52
Alternative Crops	cumulative	Acres	72.37	1,435.22	-	143,386.88
Soil and Water Conservation Plan	cumulative	Acres	21,027.01	19,038.07	972.50	4,809,143.38
Crop Irrigation Management	cumulative	Acres	-	-	-	-
Manure Incorporation	annual	Acres	2,462.84	4,439.53	244.20	-
Capture & Reuse	annual	Acres	-	-	-	-
Non Urban Stream Restoration	cumulative	Feet	6,332.81	430.06	274.21	888,090.67
Non Urban Shoreline Management	cumulative	Feet	-	-	-	-
TOTAL				74,154.18	1,935.15	9,316,390.95
Agricultural Drainage Management						
Denitrifying Ditch Bioreactors	cumulative	Acres	74.88	319.42	-	-
Saturated Buffer	cumulative	Acres	74.88	3,916.67	-	150,141.30
Sorbing Materials in Ag Ditches	cumulative	Acres	74.88	-	12.29	-
Water Control Structures	cumulative	Acres	74.88	329.16	-	-
TOTAL			299.51	4,565.24	12.29	150,141.30
Animal Waste Management Systems						
Broiler Mortality Freezers	annual	Dry Tons (Carcasses)	0.04	-	-	-
Barnyard Runoff Control & Loafing Lot Management	cumulative	Acres	114.82	17,019.86	733.88	312,861.03
Ag Stormwater Management	cumulative	Acres Treated	-	-	-	-
Manure Transport	annual	Dry Tons	-	-	-	-
Dairy Precision Feeding	annual	Animal Units	1,556.33	3,620.18	404.49	96,321.37
Ammonia Emission Reductions (Litter Amendments)	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Biofilters)	cumulative	Animal Units	-	-	-	-
Ammonia Emission Reductions (Lagoon Covers)	cumulative	Animal Units	-	-	-	-
TOTAL				20,640.05	1,138.38	409,182.41
Urban/Suburban Practices						
Stormwater Management						
Runoff Reduction Performance Standard	cumulative	Acres Treated	1,108.31	3,695.98	119.69	-
Storm Water Treatment Performance Standard	cumulative	Acres Treated	423.21	1,428.62	139.69	283,507.68
Wet Ponds & Wetlands	cumulative	Acres Treated	1,500.40	2,958.18	390.49	935,540.88
Floating Treatment Wetlands	cumulative	Acres Treated (Wet Pond)	-	-	-	-
Dry Ponds	cumulative	Acres Treated	3,125.14	648.29	115.86	251,059.45
Extended Dry Ponds	cumulative	Acres Treated	3,223.17	1,441.46	265.98	421,740.60
Infiltration Practices	cumulative	Acres Treated	209.41	375.65	34.56	164,400.73
Filtering Practices	cumulative	Acres Treated	17.22	127.35	12.04	21,401.21
BioRetention	cumulative	Acres Treated	24.51	87.92	12.11	25,699.16
BioSwale	cumulative	Acres Treated	1.29	6.77	0.73	1,270.12
Permeable Pavement	cumulative	Acres Treated	-	-	-	-
Vegetated Open Channel	cumulative	Acres Treated	-	-	-	-
Urban Filter Strips	cumulative	Acres Treated	-	-	-	-
Impervious Disconnection	cumulative	Acres Treated	-	-	-	-
Conservation Landscaping Practices	cumulative	Acres Treated	-	-	-	-
TOTAL				10,773.24	1,091.14	2,104,588.83
Erosion and Sediment Control	annual	Acres	-	-	-	-
Impervious Surface Reduction	cumulative	Acres	98.73	491.58	-	220,550.30
Urban Forest Buffers	cumulative	Acres in Buffers	5.66	40.30	7.31	6,748.50
Urban Tree Planting	cumulative	Acres	110.70	99.08	14.34	11,243.60
Urban Forest Planting	cumulative	Acres	52.94	351.38	48.23	33,460.94
Urban Nutrient Management	annual	Acres	15,164.73	10,009.48	601.74	-
Urban Stream Restoration	cumulative	Feet	1.41	-	-	-
Storm Drain Cleanout	annual	Lbs of Sediment	-	-	-	-
Gray Infrastructure Nutrient Discharge Elimination	cumulative	Lbs of Nitrogen	-	-	-	-
Street Sweeping	annual	Acres	-	-	-	-
Urban Shoreline Management	cumulative	Feet	-	-	-	-
Septic Connections	cumulative	No. Systems	21.48	1.85	1.31	3,522.89
Septic Denitrification	cumulative	No. Systems	501.09	6,255.34	-	-
Septic Pumping	annual	No. Systems	-	-	-	-
Resource Practices						
Forest Harvesting Practices	annual	Acres	-	-	-	-
Dirt&Gravel Road E&S	cumulative	Feet	-	-	-	-
Non-Tidal Algal Flow-way	annual	Acres	-	-	-	-
Tidal Algal Flow-way	annual	Acres	-	-	-	-
TOTAL				17,238.02	672.92	275,526.24
GRAND TOTAL				**244,897.25**	**13,408.36**	**38,038,599.14**

MD-020600030703 - Tidal Back River (Hawk Cove) Permit Approval 2010/Baltimore City	Duration	Unit	Measure	LBS Reduced Nitrogen	 Phosphorus	 Sediment
Agriculture Practices						
Nutrient Management						
Core Nitrogen	annual	Acres	236.88	-	-	-
Rate Nitrogen	annual	Acres	102.36	-	-	-
Placement Nitrogen	annual	Acres	8.99	-	-	-
Timing Nitrogen	annual	Acres	10.17	-	-	-
Core Phosphorus	annual	Acres	236.88	-	-	-
Rate Phosphorus	annual	Acres	1.71	-	-	-
Placement Phosphorus	annual	Acres	6.55	-	-	-
Timing Phosphorus	annual	Acres	-	-	-	-
TOTAL				-	-	-
Tillage Management						
Conservation	annual	Acres	38.79	-	-	-
Continuous High Residue	annual	Acres	153.54	-	-	-
Low Residue	annual	Acres	-	-	-	-
TOTAL				-	-	-
Cover Crop						
Traditional	annual	Acres	50.26	-	-	-
Commodity	annual	Acres	27.43	-	-	-
TOTAL				-	-	-
Pasture Management						
Alternative Watering	cumulative	Acres	24.11	-	-	-
Prescribed Grazing	cumulative	Acres	2.92	-	-	-
Horse Pasture Management	cumulative	Acres	0.59	-	-	-
Forest Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	0.14	-	-	-
Grass Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	-	-	-	-
TOTAL				-	-	-
Forest Buffers	cumulative	Acres in Buffers	5.21	-	-	-
Wetland Restoration	cumulative	Acres	0.33	-	-	-
Wetland Creation	cumulative	Acres	0.77	-	-	-
Wetland Enhancement and Rehabilitation	cumulative	Acres	-	-	-	-
Land Retirement to Open Space	cumulative	Acres	1.33	-	-	-
Land Retirement to Pasture	cumulative	Acres	3.27	-	-	-
Grass Buffers	cumulative	Acres in Buffers	2.21	-	-	-
Tree Planting	cumulative	Acres	0.12	-	0.00	4.26
Alternative Crops	cumulative	Acres	0.67	-	-	-
Soil and Water Conservation Plan	cumulative	Acres	172.08	-	-	-
Crop Irrigation Management	cumulative	Acres	-	-	-	-
Manure Incorporation	annual	Acres	1.53	-	-	-
Capture & Reuse	annual	Acres	-	-	-	-
Non Urban Stream Restoration	cumulative	Feet	1,093.35	69.43	61.28	162,082.31
Non Urban Shoreline Management	cumulative	Feet	-	-	-	-
TOTAL				69.43	61.29	162,086.56
Agricultural Drainage Management						
Denitrifying Ditch Bioreactors	cumulative	Acres	0.37	-	-	-
Saturated Buffer	cumulative	Acres	0.37	-	-	-
Sorbing Materials in Ag Ditches	cumulative	Acres	0.37	199.06	16.44	1,175.74
Water Control Structures	cumulative	Acres	0.37	-	-	-
TOTAL				199.06	16.44	1,175.74
Animal Waste Management Systems						
Broiler Mortality Freezers	annual	Dry Tons (Carcasses)	-	-	-	-
Barnyard Runoff Control & Loafing Lot Management	cumulative	Acres	0.51	-	-	-
Ag Stormwater Management	cumulative	Acres Treated	-	-	-	-
Manure Transport	annual	Dry Tons	-	-	-	-
Dairy Precision Feeding	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Litter Amendments)	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Biofilters)	cumulative	Animal Units	-	-	-	-
Ammonia Emission Reductions (Lagoon Covers)	cumulative	Animal Units	-	-	-	-
TOTAL				-	-	-
Urban/Suburban Practices						
Stormwater Management						
Runoff Reduction Performance Standard	cumulative	Acres Treated	157.14	414.72	46.57	75,545.73
Storm Water Treatment Performance Standard	cumulative	Acres Treated	894.80	1,378.39	208.73	401,206.92
Wet Ponds & Wetlands	cumulative	Acres Treated	48.06	70.66	15.65	33,808.92
Floating Treatment Wetlands	cumulative	Acres Treated (Wet Pond)	-	-	-	-
Dry Ponds	cumulative	Acres Treated	374.31	137.29	26.91	43,881.53
Extended Dry Ponds	cumulative	Acres Treated	1,049.48	1,542.76	150.88	738,215.40
Infiltration Practices	cumulative	Acres Treated	1.95	11.84	1.20	2,173.88
Filtering Practices	cumulative	Acres Treated	0.12	0.35	0.05	110.56
BioRetention	cumulative	Acres Treated	0.65	2.79	0.32	571.54
BioSwale	cumulative	Acres Treated	1.70	8.74	0.92	1,593.02
Permeable Pavement	cumulative	Acres Treated	0.51	1.76	0.19	420.85
Vegetated Open Channel	cumulative	Acres Treated	-	-	-	-
Urban Filter Strips	cumulative	Acres Treated	-	-	-	-
Impervious Disconnection	cumulative	Acres Treated	-	-	-	-
Conservation Landscaping Practices	cumulative	Acres Treated	-	-	-	-
TOTAL				3,569.29	451.43	1,297,528.34
Erosion and Sediment Control	annual	Acres	-	-	-	-
Impervious Surface Reduction	cumulative	Acres	31.53	119.72	-	43,632.39
Urban Forest Buffers	cumulative	Acres in Buffers	-	-	-	-
Urban Tree Planting	cumulative	Acres	37.46	-	-	-
Urban Forest Planting	cumulative	Acres	0.01	0.05	0.01	3.84
Urban Nutrient Management	annual	Acres	4,388.30	-	-	-
Urban Stream Restoration	cumulative	Feet	7,863.36	499.32	440.74	1,165,690.76
Storm Drain Cleanout	annual	Lbs of Sediment	-	-	-	-
Gray Infrastructure Nutrient Discharge Elimination	cumulative	Lbs of Nitrogen	0.45	-	-	-
Street Sweeping	annual	Acres	-	-	-	-
Urban Shoreline Management	cumulative	Feet	13,191.04	1,138.65	804.92	2,163,330.52
Septic Connections	cumulative	Number of Systems	49.48	343.04	-	-
Septic Denitrification	cumulative	Number of Systems	5.58	25.58	-	-
Septic Pumping	annual	Number of Systems	-	-	-	-
Resource Practices				-	-	-
Forest Harvesting Practices	annual	Acres	-	-	-	-
Dirt&Gravel Road E&S	cumulative	Feet	-	-	-	-
Non-Tidal Algal Flow-way	annual	Acres	-	-	-	-
Tidal Algal Flow-way	annual	Acres	-	-	-	-
TOTAL				2,126.36	1,245.67	3,372,657.52
GRAND TOTAL				5,964.14	1,774.82	4,833,448.16

MD-020600030702 - Upper Back River (Redhouse Creek) Permit Approval 2009/Baltimore City	Duration	Unit	Measure	LBS Reduced Nitrogen	LBS Reduced Phosphorus	LBS Reduced Sediment
Agriculture Practices						
Nutrient Management						
Core Nitrogen	annual	Acres	5.97	-	-	-
Rate Nitrogen	annual	Acres	2.58	-	-	-
Placement Nitrogen	annual	Acres	0.23	-	-	-
Timing Nitrogen	annual	Acres	0.26	-	-	-
Core Phosphorus	annual	Acres	5.97	-	-	-
Rate Phosphorus	annual	Acres	0.04	-	-	-
Placement Phosphorus	annual	Acres	0.17	-	-	-
Timing Phosphorus	annual	Acres	-	-	-	-
TOTAL				-	-	-
Tillage Management						
Conservation	annual	Acres	0.98	-	-	-
Continuous High Residue	annual	Acres	3.87	-	-	-
Low Residue	annual	Acres	-	-	-	-
TOTAL				-	-	-
Cover Crop						
Traditional	annual	Acres	1.27	-	-	-
Commodity	annual	Acres	0.69	-	-	-
TOTAL				-	-	-
Pasture Management						
Alternative Watering	cumulative	Acres	0.72	-	-	-
Prescribed Grazing	cumulative	Acres	0.09	-	-	-
Horse Pasture Management	cumulative	Acres	0.02	-	-	-
Forest Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	-	-	-	-
Grass Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	-	-	-	-
TOTAL				-	-	-
Forest Buffers	cumulative	Acres in Buffers	12.58	-	-	-
Wetland Restoration	cumulative	Acres	0.01	-	-	-
Wetland Creation	cumulative	Acres	0.02	-	-	-
Wetland Enhancement and Rehabilitation	cumulative	Acres	-	-	-	-
Land Retirement to Open Space	cumulative	Acres	0.03	-	-	-
Land Retirement to Pasture	cumulative	Acres	0.08	-	-	-
Grass Buffers	cumulative	Acres in Buffers	0.06	-	-	-
Tree Planting	cumulative	Acres	-	-	-	-
Alternative Crops	cumulative	Acres	0.02	-	-	-
Soil and Water Conservation Plan	cumulative	Acres	4.68	-	-	-
Crop Irrigation Management	cumulative	Acres	-	-	-	-
Manure Incorporation	annual	Acres	0.04	-	-	-
Capture & Reuse	annual	Acres	-	-	-	-
Non Urban Stream Restoration	cumulative	Feet	596.03	37.85	33.41	88,357.84
Non Urban Shoreline Management	cumulative	Feet	-	-	-	-
TOTAL				37.85	33.41	88,357.84
Agricultural Drainage Management						
Denitrifying Ditch Bioreactors	cumulative	Acres	0.01	-	-	-
Saturated Buffer	cumulative	Acres	0.01	-	-	-
Sorbing Materials in Ag Ditches	cumulative	Acres	0.01	5.45	0.45	32.19
Water Control Structures	cumulative	Acres	0.01	-	-	-
TOTAL				5.45	0.45	32.19
Animal Waste Management Systems						
Broiler Mortality Freezers	annual	Dry Tons (Carcasses)	-	-	-	-
Barnyard Runoff Control & Loafing Lot Management	cumulative	Acres	0.01	-	-	-
Ag Stormwater Management	cumulative	Acres Treated	-	-	-	-
Manure Transport	annual	Dry Tons	-	-	-	-
Dairy Precision Feeding	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Litter Amendments)	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Biofilters)	cumulative	Animal Units	-	-	-	-
Ammonia Emission Reductions (Lagoon Covers)	cumulative	Animal Units	-	-	-	-
TOTAL				-	-	-
Urban/Suburban Practices						
Stormwater Management						
Runoff Reduction Performance Standard	cumulative	Acres Treated	103.61	273.45	30.70	49,810.80
Storm Water Treatment Performance Standard	cumulative	Acres Treated	261.74	403.20	61.06	117,359.07
Wet Ponds & Wetlands	cumulative	Acres Treated	367.57	540.34	119.72	258,554.50
Floating Treatment Wetlands	cumulative	Acres Treated (Wet Pond)	-	-	-	-
Dry Ponds	cumulative	Acres Treated	153.85	56.43	11.06	18,036.64
Extended Dry Ponds	cumulative	Acres Treated	220.24	323.76	31.66	154,919.04
Infiltration Practices	cumulative	Acres Treated	7.35	44.59	4.52	8,186.70
Filtering Practices	cumulative	Acres Treated	2.35	6.90	1.02	2,202.46
BioRetention	cumulative	Acres Treated	1.12	4.82	0.56	987.30
BioSwale	cumulative	Acres Treated	1.48	7.62	0.80	1,389.53
Permeable Pavement	cumulative	Acres Treated	0.01	0.04	0.00	10.46
Vegetated Open Channel	cumulative	Acres Treated	-	-	-	-
Urban Filter Strips	cumulative	Acres Treated	-	-	-	-
Impervious Disconnection	cumulative	Acres Treated	-	-	-	-
Conservation Landscaping Practices	cumulative	Acres Treated	-	-	-	-
TOTAL				1,661.15	261.10	611,456.52
Erosion and Sediment Control	annual	Acres	-	-	-	-
Impervious Surface Reduction	cumulative	Acres	8.77	33.29	-	12,134.25
Urban Forest Buffers	cumulative	Acres in Buffers	-	-	-	-
Urban Tree Planting	cumulative	Acres	8.08	-	-	-
Urban Forest Planting	cumulative	Acres	37.15	161.64	32.20	13,045.05
Urban Nutrient Management	annual	Acres	7,574.53	-	-	-
Urban Stream Restoration	cumulative	Feet	12,323.41	782.54	690.73	1,826,863.38
Storm Drain Cleanout	annual	Lbs of Sediment	-	-	-	-
Gray Infrastructure Nutrient Discharge Elimination	cumulative	Lbs of Nitrogen	1,664.59	12.62	-	-
Street Sweeping	annual	Acres	0.01	0.00	0.00	0.95
Urban Shoreline Management	cumulative	Feet	25.65	2.21	1.57	4,206.39
Septic Connections	cumulative	Number of Systems	3.27	22.68	-	-
Septic Denitrification	cumulative	Number of Systems	2.74	12.56	-	-
Septic Pumping	annual	Number of Systems	-	-	-	-
Resource Practices				-	-	-
Forest Harvesting Practices	annual	Acres	-	-	-	-
Dirt&Gravel Road E&S	cumulative	Feet	-	-	-	-
Non-Tidal Algal Flow-way	annual	Acres	-	-	-	-
Tidal Algal Flow-way	annual	Acres	-	-	-	-
TOTAL				1,027.55	724.49	1,856,250.02
GRAND TOTAL				**2,732.00**	**1,019.45**	**2,556,096.57**

MD-0206000502 - Upper Choptank River Permit Approval 2010/Talbot, Caroline, & Queen Anne's Co.	Duration	Unit	Measure	LBS Reduced Nitrogen	Phosphorus	Sediment
Agriculture Practices						
Nutrient Management						
Core Nitrogen	annual	Acres	34,822.41	91,732.29	119.36	-
Rate Nitrogen	annual	Acres	14,383.75	11,726.20	-	-
Placement Nitrogen	annual	Acres	4,442.21	9,126.31	-	-
Timing Nitrogen	annual	Acres	8,400.31	14,569.83	-	-
Core Phosphorus	annual	Acres	34,822.41	-	8,690.66	-
Rate Phosphorus	annual	Acres	1,813.77	-	233.77	-
Placement Phosphorus	annual	Acres	2,534.87	-	158.85	-
Timing Phosphorus	annual	Acres	-	-	-	-
TOTAL				127,154.63	9,202.64	-
Tillage Management						
Conservation	annual	Acres	7,918.44	8,908.64	2,043.32	1,187,249.77
Continuous High Residue	annual	Acres	20,190.88	68,147.05	7,552.29	5,833,124.18
Low Residue	annual	Acres	-	-	-	-
TOTAL				77,055.69	9,595.61	7,020,373.95
Cover Crop						
Traditional	annual	Acres	14,403.55	89,899.56	166.99	24,512.05
Commodity	annual	Acres	8,342.14	21,140.68	-	-
TOTAL				111,040.24	166.99	24,512.05
Pasture Management						
Alternative Watering	cumulative	Acres	97.87	50.97	14.50	192.77
Prescribed Grazing	cumulative	Acres	55.60	51.60	23.53	334.24
Horse Pasture Management	cumulative	Acres	11.28	-	4.03	90.37
Forest Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	3.00	153.35	48.99	23,448.09
Grass Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	0.08	3.83	1.22	585.76
TOTAL				259.75	92.27	24,601.24
Forest Buffers	cumulative	Acres in Buffers	136.32	11,517.86	291.38	103,820.89
Wetland Restoration	cumulative	Acres	368.04	19,872.14	777.46	217,213.39
Wetland Creation	cumulative	Acres	7.10	236.66	10.99	2,753.97
Wetland Enhancement and Rehabilitation	cumulative	Acres	9.93	41.18	3.57	327.73
Land Retirement to Open Space	cumulative	Acres	132.01	3,421.69	42.81	45,794.90
Land Retirement to Pasture	cumulative	Acres	72.93	1,890.47	23.65	35,635.94
Grass Buffers	cumulative	Acres in Buffers	1,403.53	92,064.25	1,877.61	1,059,937.15
Tree Planting	cumulative	Acres	80.60	2,313.83	96.47	28,537.24
Alternative Crops	cumulative	Acres	118.64	3,257.08	42.13	42,270.72
Soil and Water Conservation Plan	cumulative	Acres	27,028.93	53,014.09	3,967.83	2,123,870.20
Crop Irrigation Management	cumulative	Acres	-	-	-	-
Manure Incorporation	annual	Acres	4,155.31	11,380.15	730.72	-
Capture & Reuse	annual	Acres	-	-	-	-
Non Urban Stream Restoration	cumulative	Feet	1,092.17	67.45	57.86	62,462.73
Non Urban Shoreline Management	cumulative	Feet	0.01	0.00	0.00	2.08
TOTAL				199,076.83	7,922.47	3,722,626.95
Agricultural Drainage Management						
Denitrifying Ditch Bioreactors	cumulative	Acres	543.92	3,068.87	-	-
Saturated Buffer	cumulative	Acres	543.92	45,018.88	210.38	198,319.45
Sorbing Materials in Ag Ditches	cumulative	Acres	543.92	-	233.51	-
Water Control Structures	cumulative	Acres	543.92	4,506.53	-	-
TOTAL				52,594.28	443.89	198,319.45
Animal Waste Management Systems						
Broiler Mortality Freezers	annual	Dry Tons (Carcasses)	6,035.52	11,364.32	394.16	-
Barnyard Runoff Control & Loafing Lot Management	cumulative	Acres	11.12	2,585.49	132.07	625.32
Ag Stormwater Management	cumulative	Acres Treated	86.19	34,910.12	2,857.07	8,405.55
Manure Transport	annual	Dry Tons	1.05	1.28	0.48	-
Dairy Precision Feeding	annual	Animal Units	7.43	17.56	1.61	328.57
Ammonia Emission Reductions (Litter Amendments)	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Biofilters)	cumulative	Animal Units	-	-	-	-
Ammonia Emission Reductions (Lagoon Covers)	cumulative	Animal Units	-	-	-	-
TOTAL				48,878.77	3,385.38	9,359.45
Urban/Suburban Practices						
Stormwater Management						
Runoff Reduction Performance Standard	cumulative	Acres Treated	0.12	0.73	0.06	9.16
Storm Water Treatment Performance Standard	cumulative	Acres Treated	0.30	1.03	0.11	36.92
Wet Ponds & Wetlands	cumulative	Acres Treated	0.07	0.16	0.03	8.40
Floating Treatment Wetlands	cumulative	Acres Treated (Wet Pond)	-	-	-	-
Dry Ponds	cumulative	Acres Treated	1.52	0.83	0.12	22.67
Extended Dry Ponds	cumulative	Acres Treated	0.08	0.18	0.01	5.62
Infiltration Practices	cumulative	Acres Treated	2.37	21.54	1.59	340.92
Filtering Practices	cumulative	Acres Treated	-	-	-	-
BioRetention	cumulative	Acres Treated	-	-	-	-
BioSwale	cumulative	Acres Treated	0.01	0.10	0.01	1.87
Permeable Pavement	cumulative	Acres Treated	14.49	74.34	5.70	1,910.48
Vegetated Open Channel	cumulative	Acres Treated	-	-	-	-
Urban Filter Strips	cumulative	Acres Treated	-	-	-	-
Impervious Disconnection	cumulative	Acres Treated	-	-	-	-
Conservation Landscaping Practices	cumulative	Acres Treated	-	-	-	-
TOTAL				98.91	7.63	2,336.04
Erosion and Sediment Control	annual	Acres	0.00	-	-	-
Impervious Surface Reduction	cumulative	Acres	0.01	0.04	(0.00)	3.75
Urban Forest Buffers	cumulative	Acres in Buffers	0.04	0.41	0.05	8.32
Urban Tree Planting	cumulative	Acres	0.16	0.18	0.02	16.75
Urban Forest Planting	cumulative	Acres	0.19	1.54	0.16	16.06
Urban Nutrient Management	annual	Acres	7,631.51	6,417.47	325.41	263,391.65
Urban Stream Restoration	cumulative	Feet	-	-	-	-
Storm Drain Cleanout	annual	Lbs of Sediment	-	-	-	-
Gray Infrastructure Nutrient Discharge Elimination	cumulative	Lbs of Nitrogen	-	-	-	-
Street Sweeping	annual	Acres	-	-	-	-
Urban Shoreline Management	cumulative	Feet	-	-	-	-
Septic Connections	cumulative	Number of Systems	-	-	-	-
Septic Denitrification	cumulative	Number of Systems	223.81	1,417.32	-	-
Septic Pumping	annual	Number of Systems	-	-	-	-
Resource Practices						
Forest Harvesting Practices	annual	Acres	-	-	-	-
Dirt&Gravel Road E&S	cumulative	Feet	-	-	-	-
Non-Tidal Algal Flow-way	annual	Acres	-	-	-	-
Tidal Algal Flow-way	annual	Acres	-	-	-	-
TOTAL				7,836.96	325.64	263,436.53
GRAND TOTAL				**623,996.06**	**31,142.52**	**11,265,565.66**

MD-020600020409 - Corsica River				LBS Reduced		
Permit Approval 2006/Queen Anne's Co.	Duration	Unit	Measure	Nitrogen	Phosphorus	Sediment
Agriculture Practices						
Nutrient Management						
Core Nitrogen	annual	Acres	10,824.73	20,321.15	-	-
Rate Nitrogen	annual	Acres	5,256.27	3,086.54	-	-
Placement Nitrogen	annual	Acres	2,602.19	3,772.08	-	-
Timing Nitrogen	annual	Acres	751.58	934.56	-	-
Core Phosphorus	annual	Acres	10,824.73	-	2,262.58	-
Rate Phosphorus	annual	Acres	118.04	-	8.03	-
Placement Phosphorus	annual	Acres	2,082.85	-	69.90	-
Timing Phosphorus	annual	Acres	-	-	-	-
TOTAL				28,114.32	2,340.52	-
Tillage Management						
Conservation	annual	Acres	3,060.28	2,659.11	493.90	503,050.03
Continuous High Residue	annual	Acres	7,764.44	20,239.81	1,749.72	2,459,256.89
Low Residue	annual	Acres	-	-	-	-
TOTAL				22,898.92	2,243.62	2,962,306.92
Cover Crop						
Traditional	annual	Acres	4,975.72	23,980.77	23.49	5,871.84
Commodity	annual	Acres	1,490.37	3,022.73	-	-
TOTAL				27,003.50	23.49	5,871.84
Pasture Management						
Alternative Watering	cumulative	Acres	84.80	37.91	8.92	13.38
Prescribed Grazing	cumulative	Acres	13.48	10.99	4.96	5.32
Horse Pasture Management	cumulative	Acres	5.25	-	1.66	2.76
Forest Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	1.24	65.48	20.32	11,571.02
Grass Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	1.15	58.63	18.36	10,729.58
TOTAL				-	-	-
Forest Buffers	cumulative	Acres in Buffers	75.05	5,417.37	83.43	62,287.31
Wetland Restoration	cumulative	Acres	129.52	5,804.74	155.42	88,984.09
Wetland Creation	cumulative	Acres	32.79	845.11	26.55	14,067.93
Wetland Enhancement and Rehabilitation	cumulative	Acres	1.85	6.36	0.34	66.47
Land Retirement to Open Space	cumulative	Acres	238.05	4,475.75	11.95	94,299.45
Land Retirement to Pasture	cumulative	Acres	30.11	566.11	1.51	11,927.41
Grass Buffers	cumulative	Acres in Buffers	744.09	41,473.85	461.95	616,785.10
Tree Planting	cumulative	Acres	10.05	222.66	6.28	3,935.90
Alternative Crops	cumulative	Acres	34.64	731.51	3.99	13,755.85
Soil and Water Conservation Plan	cumulative	Acres	7,737.42	11,906.65	604.76	676,355.55
Crop Irrigation Management	cumulative	Acres	-	-	-	-
Manure Incorporation	annual	Acres	1,147.05	2,316.11	106.64	-
Capture & Reuse	annual	Acres	-	-	-	-
Non Urban Stream Restoration	cumulative	Feet	-	-	-	-
Non Urban Shoreline Management	cumulative	Feet	-	-	-	-
TOTAL				73,766.23	1,462.81	1,582,465.08
Agricultural Drainage Management						
Denitrifying Ditch Bioreactors	cumulative	Acres	47.90	208.68	-	-
Saturated Buffer	cumulative	Acres	47.90	3,071.51	6.35	19,360.40
Sorbing Materials in Ag Ditches	cumulative	Acres	47.90	-	10.90	-
Water Control Structures	cumulative	Acres	47.90	310.19	-	-
TOTAL				3,590.38	17.25	19,360.40
Animal Waste Management Systems						
Broiler Mortality Freezers	annual	Dry Tons (Carcasses)	780.87	1,008.94	20.39	-
Barnyard Runoff Control & Loafing Lot Management	cumulative	Acres	4.85	896.10	79.65	1,297.38
Ag Stormwater Management	cumulative	Acres Treated	11.86	3,814.52	543.88	5,494.79
Manure Transport	annual	Dry Tons	16.48	41.98	1.58	-
Dairy Precision Feeding	annual	Animal Units	117.55	254.59	34.79	9,708.67
Ammonia Emission Reductions (Litter Amendments)	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Biofilters)	cumulative	Animal Units	-	-	-	-
Ammonia Emission Reductions (Lagoon Covers)	cumulative	Animal Units	-	-	-	-
TOTAL				6,016.13	680.30	16,500.84
Urban/Suburban Practices						
Stormwater Management						
Runoff Reduction Performance Standard	cumulative	Acres Treated	3.54	18.19	2.28	784.81
Storm Water Treatment Performance Standard	cumulative	Acres Treated	9.13	27.33	4.62	1,883.13
Wet Ponds & Wetlands	cumulative	Acres Treated	2.36	4.15	1.06	408.36
Floating Treatment Wetlands	cumulative	Acres Treated (Wet Pond)	-	-	-	-
Dry Ponds	cumulative	Acres Treated	46.51	20.53	4.59	1,342.20
Extended Dry Ponds	cumulative	Acres Treated	2.46	4.33	0.49	426.40
Infiltration Practices	cumulative	Acres Treated	73.25	532.13	62.19	20,082.51
Filtering Practices	cumulative	Acres Treated	0.00	0.01	0.00	0.84
BioRetention	cumulative	Acres Treated	0.01	0.05	0.01	2.06
BioSwale	cumulative	Acres Treated	0.42	2.58	0.31	96.68
Permeable Pavement	cumulative	Acres Treated	446.98	1,836.54	223.60	90,300.35
Vegetated Open Channel	cumulative	Acres Treated	-	-	-	-
Urban Filter Strips	cumulative	Acres Treated	-	-	-	-
Impervious Disconnection	cumulative	Acres Treated	-	-	-	-
Conservation Landscaping Practices	cumulative	Acres Treated	-	-	-	-
TOTAL				2,445.85	299.15	115,327.33
Erosion and Sediment Control	annual	Acres	-	-	-	-
Impervious Surface Reduction	cumulative	Acres	0.22	1.13	-	98.42
Urban Forest Buffers	cumulative	Acres in Buffers	-	-	-	-
Urban Tree Planting	cumulative	Acres	4.32	4.27	0.74	395.98
Urban Forest Planting	cumulative	Acres	4.92	32.18	5.33	773.48
Urban Nutrient Management	annual	Acres	1,728.76	1,076.24	76.41	-
Urban Stream Restoration	cumulative	Feet	-	-	-	-
Storm Drain Cleanout	annual	Lbs of Sediment	-	-	-	-
Gray Infrastructure Nutrient Discharge Elimination	cumulative	Lbs of Nitrogen	-	-	-	-
Street Sweeping	annual	Acres	-	-	-	-
Urban Shoreline Management	cumulative	Feet	-	-	-	-
Septic Connections	cumulative	Number of Systems	0.08	0.63	-	-
Septic Denitrification	cumulative	Number of Systems	90.58	476.89	-	-
Septic Pumping	annual	Number of Systems	-	-	-	-
Resource Practices						
Forest Harvesting Practices	annual	Acres	-	-	-	-
Dirt&Gravel Road E&S	cumulative	Feet	-	-	-	-
Non-Tidal Algal Flow-way	annual	Acres	-	-	-	-
Tidal Algal Flow-way	annual	Acres	-	-	-	-
TOTAL				1,591.33	82.49	1,267.88
GRAND TOTAL				165,426.66	7,149.62	4,703,100.30

MD-020600030902 - Middle Gywnns Falls (Dead Run) Permit Approval 2014/Baltimore City	Duration	Unit	Measure	LBS Reduced Nitrogen	Phosphorus	Sediment
Agriculture Practices						
Nutrient Management						
Core Nitrogen	annual	Acres	76.18	-	-	-
Rate Nitrogen	annual	Acres	32.92	-	-	-
Placement Nitrogen	annual	Acres	2.89	-	-	-
Timing Nitrogen	annual	Acres	3.27	-	-	-
Core Phosphorus	annual	Acres	76.18	-	-	-
Rate Phosphorus	annual	Acres	0.55	-	-	-
Placement Phosphorus	annual	Acres	2.11	-	-	-
Timing Phosphorus	annual	Acres	-	-	-	-
TOTAL				-	-	-
Tillage Management						
Conservation	annual	Acres	12.48	-	-	-
Continuous High Residue	annual	Acres	49.38	-	-	-
Low Residue	annual	Acres	-	-	-	-
TOTAL				-	-	-
Cover Crop						
Traditional	annual	Acres	16.16	-	-	-
Commodity	annual	Acres	8.80	-	-	-
TOTAL				-	-	-
Pasture Management						
Alternative Watering	cumulative	Acres	10.82	-	-	-
Prescribed Grazing	cumulative	Acres	1.31	-	-	-
Horse Pasture Management	cumulative	Acres	0.27	-	-	-
Forest Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	0.06	-	-	-
Grass Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	-	-	-	-
TOTAL				-	-	-
Forest Buffers	cumulative	Acres in Buffers	8.64	-	-	-
Wetland Restoration	cumulative	Acres	0.12	-	-	-
Wetland Creation	cumulative	Acres	0.28	-	-	-
Wetland Enhancement and Rehabilitation	cumulative	Acres	-	-	-	-
Land Retirement to Open Space	cumulative	Acres	0.43	-	-	-
Land Retirement to Pasture	cumulative	Acres	1.05	-	-	-
Grass Buffers	cumulative	Acres in Buffers	0.76	-	-	-
Tree Planting	cumulative	Acres	0.04	-	-	1.56
Alternative Crops	cumulative	Acres	0.22	-	-	-
Soil and Water Conservation Plan	cumulative	Acres	62.93	-	-	-
Crop Irrigation Management	cumulative	Acres	-	-	-	-
Manure Incorporation	annual	Acres	0.49	-	-	-
Capture & Reuse	cumulative	Acres	-	-	-	-
Non Urban Stream Restoration	cumulative	Acres	1,775.30	112.73	99.51	263,176.87
Non Urban Shoreline Management	cumulative	Feet	-	-	-	-
TOTAL				112.73	99.51	263,178.43
Agricultural Drainage Management						
Denitrifying Ditch Bioreactors	cumulative	Acres	0.13	-	-	-
Saturated Buffer	cumulative	Acres	0.13	-	-	-
Sorbing Materials in Ag Ditches	cumulative	Acres	0.13	72.27	5.97	426.88
Water Control Structures	cumulative	Acres	0.13	-	-	-
TOTAL				72.27	5.97	426.88
Animal Waste Management Systems						
Broiler Mortality Freezers	annual	Dry Tons (Carcasses)	-	-	-	-
Barnyard Runoff Control & Loafing Lot Management	cumulative	Acres	0.18	-	-	-
Ag Stormwater Management	cumulative	Acres Treated	-	-	-	-
Manure Transport	annual	Dry Tons	-	-	-	-
Dairy Precision Feeding	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Litter Amendments)	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Biofilters)	cumulative	Animal Units	-	-	-	-
Ammonia Emission Reductions (Lagoon Covers)	cumulative	Animal Units	-	-	-	-
TOTAL				-	-	-
Urban/Suburban Practices						
Stormwater Management						
Runoff Reduction Performance Standard	cumulative	Acres Treated	260.17	686.67	77.10	125,083.41
Storm Water Treatment Performance Standard	cumulative	Acres Treated	1,150.39	1,772.10	268.35	515,803.16
Wet Ponds & Wetlands	cumulative	Acres Treated	391.35	575.29	127.46	275,277.58
Floating Treatment Wetlands	cumulative	Acres Treated (Wet Pond)	-	-	-	-
Dry Ponds	cumulative	Acres Treated	1,615.46	592.50	116.14	189,385.89
Extended Dry Ponds	cumulative	Acres Treated	2,233.03	3,282.60	321.04	1,570,731.20
Infiltration Practices	cumulative	Acres Treated	40.67	246.70	25.00	45,296.60
Filtering Practices	cumulative	Acres Treated	2.60	7.64	1.13	2,435.90
BioRetention	cumulative	Acres Treated	1.56	6.70	0.77	1,373.00
BioSwale	cumulative	Acres Treated	2.49	12.82	1.35	2,336.10
Permeable Pavement	cumulative	Acres Treated	4.98	17.10	1.80	4,089.43
Vegetated Open Channel	cumulative	Acres Treated	-	-	-	-
Urban Filter Strips	cumulative	Acres Treated	-	-	-	-
Impervious Disconnection	cumulative	Acres Treated	-	-	-	-
Conservation Landscaping Practices	cumulative	Acres Treated	-	-	-	-
TOTAL				7,200.11	940.14	2,731,812.28
Erosion and Sediment Control	annual	Acres	-	-	-	-
Impervious Surface Reduction	cumulative	Acres	37.44	142.17	-	51,815.01
Urban Forest Buffers	cumulative	Acres in Buffers	-	-	-	-
Urban Tree Planting	cumulative	Acres	7.31	-	-	-
Urban Forest Planting	cumulative	Acres	-	-	-	-
Urban Nutrient Management	annual	Acres	10,121.50	-	-	-
Urban Stream Restoration	cumulative	Feet	9,706.80	616.38	544.07	1,438,967.83
Storm Drain Cleanout	annual	Lbs of Sediment	-	-	-	-
Gray Infrastructure Nutrient Discharge Elimination	cumulative	Lbs of Nitrogen	1,794.46	13.60	-	-
Street Sweeping	annual	Acres	0.01	0.00	0.00	1.01
Urban Shoreline Management	cumulative	Feet	-	-	-	-
Septic Connections	cumulative	Number of Systems	26.43	183.21	-	-
Septic Denitrification	cumulative	Number of Systems	7.85	35.95	-	-
Septic Pumping	annual	Number of Systems	-	-	-	-
Resource Practices				-	-	-
Forest Harvesting Practices	annual	Acres	-	-	-	-
Dirt&Gravel Road E&S	cumulative	Feet	-	-	-	-
Non-Tidal Algal Flow-way	annual	Acres	-	-	-	-
Tidal Algal Flow-way	annual	Acres	-	-	-	-
TOTAL				991.32	544.07	1,490,783.85
GRAND TOTAL				**8,376.43**	**1,589.68**	**4,486,201.44**

MD-N24510WM0_3650_0001 - Lower Jones Falls Permit Approval 2008/Baltimore City & Co.	Duration	Unit	Measure	LBS Reduced Nitrogen	Phosphorus	Sediment
Agriculture Practices						
Nutrient Management						
Core Nitrogen	annual	Acres	-	-	-	-
Rate Nitrogen	annual	Acres	-	-	-	-
Placement Nitrogen	annual	Acres	-	-	-	-
Timing Nitrogen	annual	Acres	-	-	-	-
Core Phosphorus	annual	Acres	-	-	-	-
Rate Phosphorus	annual	Acres	-	-	-	-
Placement Phosphorus	annual	Acres	-	-	-	-
Timing Phosphorus	annual	Acres	-	-	-	-
TOTAL				-	-	-
Tillage Management						
Conservation	annual	Acres	-	-	-	-
Continuous High Residue	annual	Acres	-	-	-	-
Low Residue	annual	Acres	-	-	-	-
TOTAL				-	-	-
Cover Crop						
Traditional	annual	Acres	-	-	-	-
Commodity	annual	Acres	-	-	-	-
TOTAL				-	-	-
Pasture Management						
Alternative Watering	cumulative	Acres	-	-	-	-
Prescribed Grazing	cumulative	Acres	-	-	-	-
Horse Pasture Management	cumulative	Acres	-	-	-	-
Forest Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	-	-	-	-
Grass Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	-	-	-	-
TOTAL				-	-	-
Forest Buffers	cumulative	Acres in Buffers	2.70	36.43	0.43	818.25
Wetland Restoration	cumulative	Acres	-	-	-	-
Wetland Creation	cumulative	Acres	-	-	-	-
Wetland Enhancement and Rehabilitation	cumulative	Acres	-	-	-	-
Land Retirement to Open Space	cumulative	Acres	-	-	-	-
Land Retirement to Pasture	cumulative	Acres	-	-	-	-
Grass Buffers	cumulative	Acres in Buffers	-	-	-	-
Tree Planting	cumulative	Acres	-	-	-	-
Alternative Crops	cumulative	Acres	-	-	-	-
Soil and Water Conservation Plan	cumulative	Acres	-	-	-	-
Crop Irrigation Management	cumulative	Acres	-	-	-	-
Manure Incorporation	annual	Acres	-	-	-	-
Capture & Reuse	annual	Acres	-	-	-	-
Non Urban Stream Restoration	cumulative	Feet	-	-	-	-
Non Urban Shoreline Management	cumulative	Feet	-	-	-	-
TOTAL				36.43	0.43	818.25
Agricultural Drainage Management						
Denitrifying Ditch Bioreactors	cumulative	Acres	-	-	-	-
Saturated Buffer	cumulative	Acres	-	-	-	-
Sorbing Materials in Ag Ditches	cumulative	Acres	-	-	-	-
Water Control Structures	cumulative	Acres	-	-	-	-
TOTAL				-	-	-
Animal Waste Management Systems						
Broiler Mortality Freezers	annual	Dry Tons (Carcasses)	-	-	-	-
Barnyard Runoff Control & Loafing Lot Management	cumulative	Acres	-	-	-	-
Ag Stormwater Management	cumulative	Acres Treated	-	-	-	-
Manure Transport	annual	Dry Tons	-	-	-	-
Dairy Precision Feeding	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Litter Amendments)	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Biofilters)	cumulative	Animal Units	-	-	-	-
Ammonia Emission Reductions (Lagoon Covers)	cumulative	Animal Units	-	-	-	-
TOTAL				-	-	-
Urban/Suburban Practices						
Stormwater Management						
Runoff Reduction Performance Standard	cumulative	Acres Treated	47.34	122.89	13.33	20,519.26
Storm Water Treatment Performance Standard	cumulative	Acres Treated	180.67	273.78	40.03	73,026.93
Wet Ponds & Wetlands	cumulative	Acres Treated	198.80	288.91	61.44	122,899.51
Floating Treatment Wetlands	cumulative	Acres Treated (Wet Pond)	-	-	-	-
Dry Ponds	cumulative	Acres Treated	134.30	48.73	9.17	13,836.99
Extended Dry Ponds	cumulative	Acres Treated	5.42	7.87	0.74	3,347.82
Infiltration Practices	cumulative	Acres Treated	5.86	35.15	3.42	5,737.89
Filtering Practices	cumulative	Acres Treated	2.24	6.51	0.92	1,847.46
BioRetention	cumulative	Acres Treated	0.71	3.02	0.33	550.89
BioSwale	cumulative	Acres Treated	0.54	2.77	0.28	448.45
Permeable Pavement	cumulative	Acres Treated	-	-	-	-
Vegetated Open Channel	cumulative	Acres Treated	-	-	-	-
Urban Filter Strips	cumulative	Acres Treated	-	-	-	-
Impervious Disconnection	cumulative	Acres Treated	-	-	-	-
Conservation Landscaping Practices	cumulative	Acres Treated	-	-	-	-
TOTAL				789.63	129.67	242,215.19
Erosion and Sediment Control	annual	Acres	-	-	-	-
Impervious Surface Reduction	cumulative	Acres	1.35	5.07	(0.20)	1,758.45
Urban Forest Buffers	cumulative	Acres in Buffers	-	-	-	-
Urban Tree Planting	cumulative	Acres	-	-	-	-
Urban Forest Planting	cumulative	Acres	-	-	-	-
Urban Nutrient Management	annual	Acres	3,784.42	559.90	30.59	-
Urban Stream Restoration	cumulative	Feet	-	-	-	-
Storm Drain Cleanout	annual	Lbs of Sediment	-	-	-	-
Gray Infrastructure Nutrient Discharge Elimination	cumulative	Lbs of Nitrogen	3,540.25	30.82	1.51	-
Street Sweeping	annual	Acres	0.09	0.02	0.00	13.25
Urban Shoreline Management	cumulative	Feet	-	-	-	-
Septic Connections	cumulative	Number of Systems	-	-	-	-
Septic Denitrification	cumulative	Number of Systems	-	-	-	-
Septic Pumping	annual	Number of Systems	-	-	-	-
Resource Practices				-	-	-
Forest Harvesting Practices	annual	Acres	-	-	-	-
Dirt&Gravel Road E&S	cumulative	Feet	-	-	-	-
Non-Tidal Algal Flow-way	annual	Acres	-	-	-	-
Tidal Algal Flow-way	annual	Acres	-	-	-	-
TOTAL				595.80	31.90	1,771.70
GRAND TOTAL				1,421.86	162.00	244,805.14

MD-0207000907 - Lower Monocacy Permit Approval 2008/Fredrick Co.	Duration	Unit	Measure	LBS Reduced Nitrogen	Phosphorus	Sediment
Agriculture Practices						
Nutrient Management						
Core Nitrogen	annual	Acres	18,377.15	24,722.78	-	-
Rate Nitrogen	annual	Acres	8,134.41	3,738.57	-	-
Placement Nitrogen	annual	Acres	559.76	525.71	-	-
Timing Nitrogen	annual	Acres	785.99	777.24	-	-
Core Phosphorus	annual	Acres	18,377.15	-	1,516.67	-
Rate Phosphorus	annual	Acres	591.31	-	22.14	-
Placement Phosphorus	annual	Acres	534.71	-	9.73	-
Timing Phosphorus	annual	Acres	-	-	-	-
TOTAL				29,764.30	1,548.54	-
Tillage Management						
Conservation	annual	Acres	3,493.56	9,433.34	732.32	2,407,938.85
Continuous High Residue	annual	Acres	11,999.93	45,357.80	3,252.34	15,936,747.49
Low Residue	annual	Acres	-	-	-	-
TOTAL				54,791.15	3,984.66	18,344,686.34
Cover Crop						
Traditional	annual	Acres	7,193.44	39,184.37	54.56	124,827.46
Commodity	annual	Acres	2,486.10	6,183.85	-	-
TOTAL				45,368.22	54.56	124,827.46
Pasture Management						
Alternative Watering	cumulative	Acres	2,215.13	1,124.95	168.44	2,105.52
Prescribed Grazing	cumulative	Acres	300.88	329.29	67.82	871.04
Horse Pasture Management	cumulative	Acres	26.63	-	4.99	102.34
Forest Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	17.07	1,014.22	264.87	168,072.75
Grass Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	4.03	230.31	60.62	39,676.19
TOTAL				2,698.77	566.73	210,827.84
Forest Buffers	cumulative	Acres in Buffers	800.07	49,343.86	614.27	1,866,587.00
Wetland Restoration	cumulative	Acres	8.46	355.36	7.50	16,279.53
Wetland Creation	cumulative	Acres	0.32	7.35	0.18	365.34
Wetland Enhancement and Rehabilitation	cumulative	Acres	17.88	61.70	2.36	1,754.44
Land Retirement to Open Space	cumulative	Acres	529.42	9,101.07	25.41	628,153.90
Land Retirement to Pasture	cumulative	Acres	230.27	3,958.52	190.03	225,468.75
Grass Buffers	cumulative	Acres in Buffers	137.83	6,636.28	40.41	327,375.29
Tree Planting	cumulative	Acres	22.68	448.74	9.41	23,775.44
Alternative Crops	cumulative	Acres	52.41	1,350.40	3.90	86,430.17
Soil and Water Conservation Plan	cumulative	Acres	13,720.24	-	2,494.20	-
Crop Irrigation Management	cumulative	Acres	-	-	-	-
Manure Incorporation	annual	Acres	871.43	1,803.92	93.83	-
Capture & Reuse	annual	Acres	-	-	-	-
Non Urban Stream Restoration	cumulative	Feet	3,445.82	191.69	149.14	444,915.11
Non Urban Shoreline Management	cumulative	Feet	-	-	-	-
TOTAL				73,258.88	3,630.65	3,621,104.98
Agricultural Drainage Management						
Denitrifying Ditch Bioreactors	cumulative	Acres	118.60	641.60	-	-
Saturated Buffer	cumulative	Acres	118.60	8,119.95	11.31	198,814.51
Sorbing Materials in Ag Ditches	cumulative	Acres	118.60	-	21.56	-
Water Control Structures	cumulative	Acres	118.60	700.81	-	-
TOTAL				9,462.36	32.87	198,814.51
Animal Waste Management Systems						
Broiler Mortality Freezers	annual	Dry Tons (Carcasses)	25.48	-	-	-
Barnyard Runoff Control & Loafing Lot Management	cumulative	Acres	36.07	3,074.96	85.50	101,426.46
Ag Stormwater Management	cumulative	Acres Treated	0.87	129.88	5.79	4,263.69
Manure Transport	annual	Dry Tons	-	-	-	-
Dairy Precision Feeding	annual	Animal Units	408.43	953.06	65.50	16,942.75
Ammonia Emission Reductions (Litter Amendments)	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Biofilters)	cumulative	Animal Units	-	-	-	-
Ammonia Emission Reductions (Lagoon Covers)	cumulative	Animal Units	-	-	-	-
TOTAL				4,157.90	156.78	122,632.90
Urban/Suburban Practices						
Stormwater Management						
Runoff Reduction Performance Standard	cumulative	Acres Treated	632.13	2,283.94	152.84	391,953.27
Storm Water Treatment Performance Standard	cumulative	Acres Treated	1,299.54	2,745.86	247.02	750,710.13
Wet Ponds & Wetlands	cumulative	Acres Treated	2,288.78	5,030.96	671.73	1,694,297.68
Floating Treatment Wetlands	cumulative	Acres Treated (Wet Pond)	-	-	-	-
Dry Ponds	cumulative	Acres Treated	791.96	435.36	51.79	97,710.31
Extended Dry Ponds	cumulative	Acres Treated	1,201.17	2,640.29	157.09	889,180.74
Infiltration Practices	cumulative	Acres Treated	204.90	1,857.81	113.57	240,161.91
Filtering Practices	cumulative	Acres Treated	140.50	617.68	55.02	138,679.90
BioRetention	cumulative	Acres Treated	66.76	427.97	29.74	61,773.14
BioSwale	cumulative	Acres Treated	29.03	223.31	14.19	28,651.38
Permeable Pavement	cumulative	Acres Treated	-	-	-	-
Vegetated Open Channel	cumulative	Acres Treated	-	-	-	-
Urban Filter Strips	cumulative	Acres Treated	-	-	-	-
Impervious Disconnection	cumulative	Acres Treated	-	-	-	-
Conservation Landscaping Practices	cumulative	Acres Treated	-	-	-	-
TOTAL				16,263.17	1,492.99	4,293,118.47
Erosion and Sediment Control	annual	Acres	-	-	-	-
Impervious Surface Reduction	cumulative	Acres	103.87	649.66	-	210,265.29
Urban Forest Buffers	cumulative	Acres in Buffers	-	-	-	-
Urban Tree Planting	cumulative	Acres	63.79	67.16	6.57	-
Urban Forest Planting	cumulative	Acres	0.04	0.36	0.03	24.21
Urban Nutrient Management	annual	Acres	13,744.59	11,308.63	468.69	-
Urban Stream Restoration	cumulative	Feet	9,513.41	529.23	411.74	1,228,346.48
Storm Drain Cleanout	annual	Lbs of Sediment	-	-	-	-
Gray Infrastructure Nutrient Discharge Elimination	cumulative	Lbs of Nitrogen	-	-	-	-
Street Sweeping	annual	Acres	0.06	0.02	0.00	12.84
Urban Shoreline Management	cumulative	Feet	-	-	-	-
Septic Connections	cumulative	Number of Systems	15.81	165.09	-	-
Septic Denitrification	cumulative	Number of Systems	225.07	1,519.60	-	-
Septic Pumping	annual	Number of Systems	-	-	-	-
Resource Practices						
Forest Harvesting Practices	annual	Acres	-	-	-	-
Dirt&Gravel Road E&S	cumulative	Feet	-	-	-	-
Non-Tidal Algal Flow-way	annual	Acres	-	-	-	-
Tidal Algal Flow-way	annual	Acres	-	-	-	-
TOTAL				14,239.75	887.03	1,438,648.83
GRAND TOTAL				**250,004.49**	**12,354.81**	**29,354,661.33**

MD-0206000203 - Sassafras River Permit Approval 2010/Cecil & Kent Co.	Duration	Unit	Measure	LBS Reduced Nitrogen	 Phosphorus	 Sediment
Agriculture Practices						
Nutrient Management						
Core Nitrogen	annual	Acres	23,793.14	29,835.89	-	-
Rate Nitrogen	annual	Acres	13,185.40	5,989.59	-	-
Placement Nitrogen	annual	Acres	2,149.67	2,136.59	-	-
Timing Nitrogen	annual	Acres	3,137.54	3,101.82	-	-
Core Phosphorus	annual	Acres	23,793.14	-	3,192.72	-
Rate Phosphorus	annual	Acres	474.31	-	25.19	-
Placement Phosphorus	annual	Acres	1,655.76	-	43.44	-
Timing Phosphorus	annual	Acres	-	-	-	-
TOTAL				41,063.90	3,261.34	-
Tillage Management						
Conservation	annual	Acres	7,872.80	7,812.32	1,368.24	2,252,547.75
Continuous High Residue	annual	Acres	13,234.42	32,612.05	3,124.31	7,296,153.28
Low Residue	annual	Acres	-	-	-	-
TOTAL				40,424.37	4,492.55	9,548,701.03
Cover Crop						
Traditional	annual	Acres	10,826.67	48,038.86	88.81	37,453.13
Commodity	annual	Acres	3,310.38	6,623.01	-	-
TOTAL				54,661.87	88.81	37,453.13
Pasture Management						
Alternative Watering	cumulative	Acres	188.57	88.79	26.17	96.31
Prescribed Grazing	cumulative	Acres	105.55	91.72	42.90	167.91
Horse Pasture Management	cumulative	Acres	3.92	-	1.32	8.22
Forest Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	11.73	1,148.83	307.61	163,935.36
Grass Buffers on Fenced Pasture Corridor	cumulative	Acres in Buffers	2.33	133.27	34.49	20,338.77
TOTAL				1,462.61	412.48	184,546.56
Forest Buffers	cumulative	Acres in Buffers	168.61	10,482.62	164.48	221,937.80
Wetland Restoration	cumulative	Acres	84.90	3,607.34	96.93	97,457.94
Wetland Creation	cumulative	Acres	56.21	1,218.08	37.40	36,776.20
Wetland Enhancement and Rehabilitation	cumulative	Acres	20.45	59.17	3.50	1,036.64
Land Retirement to Open Space	cumulative	Acres	853.13	13,377.65	55.54	533,257.98
Land Retirement to Pasture	cumulative	Acres	63.47	995.28	4.13	39,673.85
Grass Buffers	cumulative	Acres in Buffers	1,056.37	50,539.32	427.68	1,390,232.29
Tree Planting	cumulative	Acres	84.62	1,567.10	41.48	50,364.17
Alternative Crops	cumulative	Acres	74.54	1,423.16	-	49,992.17
Soil and Water Conservation Plan	cumulative	Acres	17,856.68	22,893.00	1,291.99	2,364,595.13
Crop Irrigation Management	cumulative	Acres	-	-	-	-
Manure Incorporation	annual	Acres	2,559.49	4,396.26	240.26	-
Capture & Reuse	annual	Acres	-	-	-	-
Non Urban Stream Restoration	cumulative	Feet	761.75	50.25	41.72	82,048.14
Non Urban Shoreline Management	cumulative	Feet	-	-	-	-
TOTAL				110,609.25	2,405.11	4,867,372.32
Agricultural Drainage Management						
Denitrifying Ditch Bioreactors	cumulative	Acres	371.69	1,490.78	-	-
Saturated Buffer	cumulative	Acres	371.69	19,520.54	9.17	306,438.38
Sorbing Materials in Ag Ditches	cumulative	Acres	371.69	-	80.80	-
Water Control Structures	cumulative	Acres	371.69	2,056.10	-	-
TOTAL				23,067.42	89.96	306,438.38
Animal Waste Management Systems						
Broiler Mortality Freezers	annual	Dry Tons (Carcasses)	277.20	(203.70)	20.67	-
Barnyard Runoff Control & Loafing Lot Management	cumulative	Acres	20.03	2,595.35	276.64	31,730.96
Ag Stormwater Management	cumulative	Acres Treated	11.45	2,830.10	504.18	34,465.67
Manure Transport	annual	Dry Tons	2,772.65	-	1,096.60	-
Dairy Precision Feeding	annual	Animal Units	491.87	1,071.96	174.52	33,194.71
Ammonia Emission Reductions (Litter Amendments)	annual	Animal Units	-	-	-	-
Ammonia Emission Reductions (Biofilters)	cumulative	Animal Units	-	-	-	-
Ammonia Emission Reductions (Lagoon Covers)	cumulative	Animal Units	-	-	-	-
TOTAL				6,293.72	2,072.61	99,391.34
Urban/Suburban Practices						
Stormwater Management						
Runoff Reduction Performance Standard	cumulative	Acres Treated	50.22	246.51	34.94	23,331.81
Storm Water Treatment Performance Standard	cumulative	Acres Treated	113.45	324.71	62.00	49,041.62
Wet Ponds & Wetlands	cumulative	Acres Treated	114.70	194.82	54.56	42,824.08
Floating Treatment Wetlands	cumulative	Acres Treated (Wet Pond)	-	-	-	-
Dry Ponds	cumulative	Acres Treated	42.62	18.12	4.55	2,652.23
Extended Dry Ponds	cumulative	Acres Treated	22.81	38.74	4.82	8,515.48
Infiltration Practices	cumulative	Acres Treated	0.93	6.48	0.83	547.03
Filtering Practices	cumulative	Acres Treated	-	-	-	-
BioRetention	cumulative	Acres Treated	0.40	2.00	0.29	188.09
BioSwale	cumulative	Acres Treated	0.22	1.29	0.17	107.89
Permeable Pavement	cumulative	Acres Treated	-	-	-	-
Vegetated Open Channel	cumulative	Acres Treated	-	-	-	-
Urban Filter Strips	cumulative	Acres Treated	-	-	-	-
Impervious Disconnection	cumulative	Acres Treated	-	-	-	-
Conservation Landscaping Practices	cumulative	Acres Treated	-	-	-	-
TOTAL				832.66	162.17	127,208.23
Erosion and Sediment Control	annual	Acres	-	-	-	-
Impervious Surface Reduction	cumulative	Acres	0.06	-	-	59.45
Urban Forest Buffers	cumulative	Acres in Buffers	5.05	41.72	8.25	2,899.24
Urban Tree Planting	cumulative	Acres	3.42	3.19	0.63	96.94
Urban Forest Planting	cumulative	Acres	0.59	3.71	0.67	184.29
Urban Nutrient Management	annual	Acres	3,309.59	2,079.91	165.04	-
Urban Stream Restoration	cumulative	Feet	-	-	-	-
Storm Drain Cleanout	annual	Lbs of Sediment	-	-	-	-
Gray Infrastructure Nutrient Discharge Elimination	cumulative	Lbs of Nitrogen	-	-	-	-
Street Sweeping	annual	Acres	-	-	-	-
Urban Shoreline Management	cumulative	Feet	-	-	-	-
Septic Connections	cumulative	Number of Systems	0.37	3.35	-	-
Septic Denitrification	cumulative	Number of Systems	139.61	827.58	-	-
Septic Pumping	annual	Number of Systems	-	-	-	-
Resource Practices						
Forest Harvesting Practices	annual	Acres	-	-	-	-
Dirt&Gravel Road E&S	cumulative	Feet	-	-	-	-
Non-Tidal Algal Flow-way	annual	Acres	-	-	-	-
Tidal Algal Flow-way	annual	Acres	-	-	-	-
TOTAL				2,959.46	174.58	3,239.92
GRAND TOTAL				**281,375.26**	**13,159.64**	**15,174,350.91**

Appendix B | Milestones and BMP Goals

The following annual milestones coincide with Maryland's NPS Management Program objectives presented in Chapter 2 of Maryland's 2021-2025 Nonpoint Source Management Plan (Plan). The Plan is intended to achieve and maintain water quality standards and to maximize water quality benefits among other broad strategic goals presented in Chapter 1 of the Plan. These milestones, in concert with the Plan's goals and objectives, address Key Component #1 of EPA's Nonpoint Source Program and Grants Guidelines entitled, "Key Components of an Effective State Nonpoint Source Management Program" (November 2012).

Each year, the following tables are included in Maryland's NPS Annual Report with updates to reflect annual progress. These results show what was accomplished in SFY2025 (unless otherwise noted).

Objective 3: Pollutants & Stressors	Lead	2025	Cumulative Progress
Annual Nitrogen Nonpoint Source Loads to Bay: (lbs/yr)	MDE	41,492,139 (SFY2024)	-
Nitrogen: For all watersheds with EPA-accepted plans, overall total annual reduction by NPS implementation completed during the past year: (Cumulative lbs/yr from plan start)	MDE	1,584,194 (SFY2024)	-
Annual Phosphorus Nonpoint Source Loads to Bay: (lbs/yr)	MDE	2,593,050 (SFY2024)	-
Phosphorus: For all watersheds with EPA-accepted plans, overall total annual reduction by NPS implementation completed during the past year: (Cumulative lbs/yr from plan start)	MDE	81,761 (SFY2024)	-

Sediment: 319-funded projects Estimated annual reductions in pounds of sediment to local water bodies (lbs/yr)	MDE	26,974,000 (SFY2024)	-
Sediment: For all watersheds with EPA-accepted plans, overall total annual reduction by NPS implementation completed during the past year: (Cumulative lbs/yr from plan start)	MDE	46,281,191 (SFY2024)	-
Bacteria: Annual Report on Monitoring Results for Maryland Beaches	MDE	https://mde.maryland.gov/programs/water/Beaches/Documents/2025_beach_report.pdf	
Bacteria: Conduct Annual Meetings of County Beach Management Programs	MDE	Annual meetings conducted.	
Bacteria: Conduct annual Shoreline Field Surveys near Shellfish Waters to identify pollutant sources of concern (part of a 7-year cycle).	MDE	23 Routine Surveys; 7 Separate Aquaculture Surveys	126 Surveys
Bacteria: Conduct annual Sanitary Surveys of relevant data for all shellfish growing areas. These are reviews of all potential pollution sources in a shellfish growing area, which are informed by Shoreline Field Surveys.	MDE	49 Surveys/year	

Chloride: Development of a Statewide Implementation Strategy in the form of a 5S plan to address chloride impairments in a consistent manner across the State. This path was discussed with Region 3 staff, and MDE's ultimate goal is a 4b plan.	MDE	Agreement with EPA Region 3 could not be reached on a 4b approach; therefore, these chloride impairments remain in Category 5s. Maryland's salt/chloride reduction strategies are documented here and are available on MDE's winter salts web page.	-
Chloride: Certify 150 individuals over the life of this 5-year NPS State Management Program Plan through the Annual Parking lots and Sidewalks Salt Application Management Training by MDE designee.	MDE	MDE's Smart Salting Enhanced Winter maintenance Training Program continues to be a success. In addition to the 21 participants who completed the entire training in its first year, 54 received certificates of completion in SFY25. Plans are underway to offer training again with UMD EFC in October-December 2025.	75 participants who earned a certificate of completion
Chloride: Track and report the # of personnel trained through the Annual Road Salt Application Management Training by State Highway Administration.	MDE	84 People	493 People
Chloride: Update Maryland's 319 Program webpage to summarize Maryland's existing chloride mitigation activities, information about chloride pollution, and partnerships established within and outside of the State.	MDE	Updates ongoing; https://mde.maryland.gov/programs/water/319NonPointSource/Pages/411-on-Salt.aspx	

PCBs: Develop one new PCB TMDL over the life of this 5-year NPS State Management Program Plan.	MDE	Draft PCB TMDL for the Conowingo Pool and Lower Susquehanna River continues to undergo review. MDE anticipates submitting the TMDL to EPA by Fall 2026.	TBD
Temperature: Update Maryland's 319 Program webpage to summarize state initiatives designed to reduce temperature. Project Summer 2022 for completion.	MDE	Management scenarios were drafted for Prettyboy Reservoir watershed, however, this project is currently on hold due to resource constraints. MDE made the Gwynns Falls Temperature TMDL available for public comment and received approximately seventy comments. Staff have responded to all comments and are preparing the final document for submission.	https://mde.maryland.gov/programs/water/TMDL/WaterQualityStandards/Pages/Protecting-Cold-Water-Resources-in-Maryland.aspx
Trash: Update Maryland's 319 Program webpage to summarize status of TMDLs designed to reduce trash. Project Summer 2022 for completion.	MDE	Morgan State finalized the public survey and completed the analysis of the data. Currently a draft TMDL is being completed and we will be going to public comment in January.	https://mde.geodata.md.gov/TMDL/

Objective 4: Pollutant Sources	Lead	2025	Cumulative Progress
Maintain Annual Cover Crop Implementation Acreage Levels	MDA	511,998 acres (SFY2024)	-
Maintain Annual Nutrient Management Plan Acreage Levels	MDA	997,104 acres (SFY2024)	-
Maintain Annual Soil Conservation and Water Quality Plan Acreage Levels	MDA	815,524 acres (SFY2024)	-

Maintain Annual Manure Transported out of Chesapeake Bay watershed (tons)	MDA	Manure Transport out of the WS increased by 12,156 tons in FY24	Manure Transport out of the WS increased to 53,056 tons
Maintain Annual Conservation Tillage (Inc. High Residue) Acreage Levels	MDA	Conservation Tillage levels were maintained in FY24 at 911,332 acres.	-
Plant Riparian Forest Buffers (Acres/year; cumulative)	MDA	24,556 acres of buffer planted (SFY2024)	24,556 acres of buffer planted
Wetland Restoration (Acres/year)	MDA	0 acres created (SFY2024)	615 acres created
Phosphorus Management Tool – Maintain use of PMT for operations in the high-risk group, medium-risk group, and low-risk group. (# of operations utilizing the tool by risk group)	MDA	PMT is fully implemented with 20% of MD farm fields requiring use of the PMT at this time, which translates to roughly 200,000 acres of fields.	
Upgrade septic systems to nitrogen removal technology (systems/year; figures may vary from year to year due to edits to the BATMN database resulting from BAT units being replaced with sewer connection or conventional septic tanks, vacancy, catastrophe, error, etc.)	MDE	741 BAT upgrades	-
Stormwater retrofits of land without sufficient controls (cumulative pounds of nitrogen reduced/year). (May be refined in future Chesapeake Bay 2-Yr Milestones.)	MDE	https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/FAP-WPRP/2024%20Stormwater%20Financial%20Assurance%20Plan%20Annual%20Report%20_MSAR%20%23%2010954.docx.pdf	

Complete the redevelopment of the MS4 geodatabase that will aid MDE in the assessment of management programs and improve current Phase I MS4 stormwater data tracking, collection, and validation of BMPs:	MDE	The geodatabase was completed and is being utilized for the next generation of the stormwater permit.	-
Online BMP Reporting Tool for Non-MS4 local governments:	MDE	Complete: a tool has been created that can be used for these jurisdictions.	
SMART Homeowner BMP Tracking Tool: Track number of BMPs	UMD	The tool is being upgraded, new BMP counts will be reported in the following year	1,584 BMPs
Online BMP Reporting Tools for Phase II MS4 and Non-MS4 local governments: Make the tool available to users.	MDE	No progress, planning to remove the milestone for the following 5 year work plan	No Progress
Local Stormwater WLA Implementation Plans: Review Plans submitted as part of Phase I MS4 requirements. (Number of jurisdictions, which may include multiple plans for each jurisdiction) Anticipate salt plans in 2024.	MDE	10 TMDL SW-WLA Implementation Plans and 9 Countywise TMDL Implementation Plans across 11 jurisdictions.	-
Erosion and Sediment site "inspection compliance rate" conducted by MDE (Source: Annual Enforcement & Compliance Report)	MDE	Report not yet published.	https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/Annual%20Report%20E%26SC%20Violations%202024%20MDE.pdf

Lawn-to-Woodland Program: Track and report the number of landowners assisted and acres forested through the Lawn-to-Woodland Program, which provides landowners with trees, tools and technical assistance for planting and maintaining a healthy tree canopy that will support a myriad of environmental, economic and recreational benefits.	DNR	The Lawn-to-Woodland program has not been funded in recent years, but by working with partners, such as Healthy Forests Healthy Waters and the Western MD Tree Planting Program, services that address tree planting opportunities have been implemented	https://dnr.maryland.gov/forests/Pages/tree-planting.aspx#:~:text=Lawn%20to%20Woodland%20helps%20Maryland,tree%20shelters%20by%20a%20contractor.
Maryland's 5 million trees by 2030 initiative (Report status of program and # of trees planted)	MDE	555,330 trees	1,537,131 trees cumulatively
Sustainably manage forests on 38,000 acres (annually) by 2030 from baseline as part of Maryland's revised 2021 Greenhouse Gas Reduction Act (GGRA) plan goals.	DNR	36,502 acres	https://mde.maryland.gov/programs/Air/ClimateChange/Pages/Greenhouse-Gas-Emissions-Reduction-Act-(GGRA)-Plan.aspx
Coal Mining site "inspection coverage rate" conducted by MDE	MDE	100%	-
Non-Coal Mining site "inspection coverage rate" conducted by MDE	MDE	100%	-
Non-tidal wetlands and floodplains permit site "inspection coverage rate"	MDE	30%	-
Tidal wetlands permit site "inspection coverage rate"	MDE	5%	-

Objective 5: Types of Waterbodies	Lead	2025
Statewide Lakes and Reservoirs		
Lakes/Reservoirs: Triadelphia and Liberty chlorides/temperature monitoring Study (Trends analysis to help determine if we can see drops in salt levels, started in 2019)	MDE	Initial analyses have been completed and additional analyses are being planned
Patuxent Reservoirs Annual Report of the Technical Advisory Committee	WSSC	2024 Annual Report

Central Maryland – Chesapeake Bay Drainage	Watersheds with EPA-accepted watershed plans that are eligible for 319(h) Grant implementation funding.	
Antietam Creek Watershed. Water quality goal is to reduce annual pollutant loads: 12,923 tons/yr sediment, approx. 3 million-billion E. coli MPN. (see the Washington County Soil Conservation District's 2012 watershed plan Tables 8, 10, 13, 18, and 19)		
Watershed plan milestones: Report progress in the 319 Annual Report.	WCSCD	MDE's NPS program has funded 16 projects in this watershed, the most of any watershed in MD. Antietam Creek was also selected to participate in Maryland's Whole Watershed Program, which is a new 5-year pilot program that will provide funding for restoration practices, public health enhancements, and outreach.
Assess Implementation Progress toward sediment and bacteria reduction watershed plan milestones and update plan if needed.		Review of revisions has stalled due to staff turnover. MDE will reevaluate once positions have been filled.
Update watershed implementation plan		Review of revisions has stalled due to staff turnover. MDE will reevaluate once positions have been filled.
Back River – Tidal Watershed. Water quality goal is to reduce annual nutrient loads: 6,498 lbs/yr nitrogen and 679 lbs/yr phosphorus. (see Baltimore County's 2010 watershed plan Table 3-2 and Appendix A-1)		
Watershed plan milestones: Report progress in the 319 Annual Report.	Baltimore County	No new progress

Assess action items progress: Stormwater retrofit and Stream restoration		No action for 2025
Back River – Upper Watershed. Water quality goal is to reduce annual nutrient loads: 48,189.6 lbs/yr nitrogen and 6,055.8 lbs/yr phosphorus. (see Baltimore County's 2008 watershed plan Table 3-2 and Appendix A Table A-2)		
Watershed plan milestones: Report progress in the 319 Annual Report.	Baltimore County	No new progress
Assess plan implementation progress, particularly: open space tree planting, impervious area removal on institutional land.		No action for 2025
Choptank River – Upper Watershed. Water quality goal is to reduce nutrient loads from 2002 levels by 39% for nitrogen (704,000 lbs/yr) and 28% for phosphorus (34,5000 lbs/yr). (see Caroline County's 2010 watershed plan, Table 11)		
Watershed plan milestones: Report progress in the 319 Annual Report.	Caroline County	BMP implementation has continued due in large part to the funding of a Technical Assistance Circuit Rider. Several projects have received funding, including the Pealiquor Road stormwater BMP project and partnership with MDA for an agricultural drainage management project. Additional proposals have been selected for FY25 funding, pending the receipt of the grant award, such as the Goldsboro Town Hall stormwater BMP project, Chester Park stormwater BMP project in St. Michaels, and Camp Mardela projects. The Upper Choptank was also selected to participate in Maryland's Whole Watershed Program, which is a new 5-year pilot program that will provide funding for restoration practices, public health enhancements, and outreach.
Assess BMP implementation progress and update plan if needed.		Additional proposals have been selected for FY25 funding, pending the receipt of the grant award, such as the Goldsboro Town Hall stormwater BMP project and Chester Park stormwater BMP project in St. Michaels. Older funding is slated to be reallocated to the Camp Mardela stormwater BMP and shorelines restoration projects.
Greater Choptank Watershed Plan (Tuckahoe and Lower Choptank)		MDE submitted another draft of the WBP to EPA in 2025. Another revised draft will be submitted in 2026 to address additional comments.

Jonestown SW BMP installation		Phase II of the project was completed in summer 2025. This project has proved to be a huge success and has been used as a demonstration project to attract other communities to seek out similar projects. The 319 program has already received proposals from two additional communities as a result of Jonestown community members spreading the word.
Technical Assistance Circuit Rider project		Phase I will be completed in fall 2025. This project has continued to be integral to not only the 319 program's work in this watershed but other organizations. More than 10 grant proposals have been supported by the TACR, with 3 receiving 319 grant funding. 20+ community members have been trained through the LEAD the Coast program and 10 community members have served as ambassadors, assisting with work within their area and promoting it to others.
Conococheague Creek Watershed		
Plan is being drafted and will come to MDE for review. MDE anticipates review in Spring 2022 and submission to EPA in late summer of 2022 for review. Milestones for implementation will be added upon acceptance.	Washington County	MDE expects a draft to be submitted to EPA for review in Fall 2025.
Corsica River Watershed. Water quality goal is to continue meeting the Corsica TMDL for nitrogen and phosphorus.		
Watershed plan milestones: Conduct outreach to the owners of this plan to increase 319 project implantation and Report progress in the 319 Annual Report.	Centreville	No response to RFP for FFY25 funding
Assess implementation progress for BMP goals and update plan if needed.		Future projects are not expected. Frequency of monitoring was reduced this year to accommodate the growing need in other areas.

Gwynns Falls – Middle Watershed. Water quality goal for 2017 is to reduce annual nutrient loads: 35,350 lbs/yr nitrogen and 5,915 lbs/yr phosphorus. (see Baltimore County's 2014 watershed plan Table 3-24 and Appendix A Table A-2)		
Report implementation progress in the 319 Annual Report.	Baltimore County	No new 319 projects in this watershed.
Jones Falls – Lower Watershed. Water quality goal is to reduce annual pollutant loads: 23,146 lbs/yr nitrogen, 3,887 lbs/yr phosphorus, 204.9 tons/yr sediment. (see Baltimore County's 2008 watershed plan Table 5.4)		
Watershed plan milestones: Report progress in the 319 Annual Report.	Baltimore County	No new 319 projects in this watershed.
Monocacy River – Lower Watershed. Water quality goal is to reduce annual pollutant loads: 649,998 lbs/yr nitrogen, 68,952 lbs/yr phosphorus, 10,345 tons/yr sediment. (see Frederick County's 2008 watershed plan page 16 and Table "X" p34)		
Watershed plan milestones: Conduct outreach to the owners of this plan to increase 319 project implantation and Report progress in the 319 Annual Report.	Frederick County	The design of the SPSC system will be completed in Fall 2025. MDE has checked with CWP about the proposal for construction and was told the partnering entity has found other funding.
Assess implementation progress and update plan if needed.		No new 319 projects in this watershed
Sassafras River Watershed. Water quality goal is to reduce annual pollutant loads: 462,225 lbs/yr nitrogen, 12,602 lbs/yr phosphorus, 1,143 tons/yr sediment. (see the Sassafras River Association's 2009 watershed plan Table 5.4)		
Watershed plan milestones: Conduct outreach to the owners of this plan to increase 319 project implementation and Report progress in the 319 Annual Report.		MDA's agricultural drainage management project was selected to be funded by the FFY25 grant, pending receipt of the award. There have been no new proposals from other entities; however, the MDA project could spark some additional interest.

Central Maryland – Chesapeake Bay Drainage	Plans not designed to seek 319(h) implementation funds.	
Phase III Watershed Implementation Plan for the Chesapeake Bay TMDL.		
Evaluate 2025 progress for pollutant load reductions to be achieved for nonpoint sources of nitrogen, phosphorus, and sediment. Report Annually.	MDE	FY24 NPS annual progress: Nitrogen and phosphorus loads decreased due to BMP implementation, which is steadily increasing in Maryland. Maryland is on par to meet its Phase III WIP goals for nitrogen, phosphorus, and sediment.

Western Maryland – Casselman River and Youghiogheny River	Watersheds with EPA-accepted watershed plans that are eligible for 319(h) grant implementation funding.	
Casselman River Watershed Management Plan Water quality goal is to meet the pH water quality standard. (see MDE's 2011 watershed plan Chapter 3.2)		
Watershed plan milestones: Report progress in the 319 Annual Report, including, number/percentage of pH-impaired stream segments, NPS Program Success Stories and implementation progress.	MDE	The Abandoned Mine Lands program is still subsisting off of BIL funding; however, MDE expects for interest to be renewed in the next year or two due to the finite nature of the BIL money.
Percentage of impaired stream segments remediated and meet the State water quality standard for pH.	MDE	50%
Report 303(d) stream segments that achieve pH criteria via Maryland's Integrated Report.	MDE	In text; complete
Cherry Creek Watershed Protection Plan Water quality goal to be determined when the plan is finalized.		
Plan completion anticipated in 2022. Potential milestones TBD.	MDE	Some varying interest has resumed in the Cherry Creek, although there hasn't been a sustainable effort to revive the plan yet.

Upper Jennings Run Watershed Plan Water quality goal to be determined when the plan is finalized.		
Tentatively accepted pH mitigation Plan is being updated to include sediment. Report progress in the 319 Annual Report.	MDE	Allegany County hasn't shown interest in updating the WS Plan to include other sources of impairment. Sampling by MDE was pared down to target remediation sites.

Coastal Region – Coastal Bays and Atlantic Ocean		
Coastal Bays Conservation and Management Plan Water quality goal to be determined when plans are finalized.		
Assawoman Bay is conditionally approved: Report progress in the 319 Annual Report.	MCBP	The design for the Greys Creek project was completed but construction stalled out due to delays from partners. Worcester County plans to reapply for 319 funding in the next RFP.
Next steps are to create plans for Assateague, Isle of Wight, Newport, and Sinepuxent Bays. Report progress on creation of these plans and incorporate updates to milestones for any new plans in updates to this NPS plan.	MCBP	MDE has developed a TMDL Implementation Progress and Planning (TIPP) spreadsheet pollutant load modeling tool for the Coastal Bays to simulate reductions of nutrients and sediment. MDE is continuing to develop partnerships with local entities that may be involved with updating the WS Plan to include additional Bays. Newport Bay was also selected to participate in Maryland's Whole Watershed Program, which is a new 5-year pilot program that will provide funding for restoration practices, public health enhancements, and outreach.