

## Bay Restoration Fund Advisory Committee Members

Committee Members	Affiliation
Christopher P. Murphy	Acting Committee Chairman
Ben Grumbles	Maryland Department of the Environment
Joseph Bartenfelder	Maryland Department of Agriculture
Robert S. McCord	Maryland Department of Planning
Jeannie Haddaway-Riccio	Maryland Department of Natural Resources
David R. Brinkley	Maryland Department of Budget and Management
William P. Ball, Ph.D.	Johns Hopkins University
Bob Buglass	Washington Suburban Sanitary Commission (WSSC)
John Dinkel	DBD, LLC
Mark Hoffman	Chesapeake Bay Commission
Cheryl A. Lewis	Town of Oxford
Doug Meyers	Chesapeake Bay Foundation
Sara L. Trescott	Conference of Environmental Health Directors

## PURPOSE OF THIS REPORT

Section 1605.2 of the Environment Article, *Annotated Code of Maryland*, requires that, beginning January 2006, and every year thereafter, the Bay Restoration Fund (BRF) Advisory Committee (BRFAC) provide an update to the Governor and the General Assembly on the implementation of the BRF program, and report on its findings and recommendations.

## EXECUTIVE SUMMARY

The BRFAC is pleased to present to Governor Larry Hogan and the Maryland General Assembly its 17<sup>th</sup> annual Legislative Update Report. Great strides have been made in implementing this historic BRF, but many challenges remain as we continue with the multi-year task of upgrading the state's wastewater treatment plants (WWTPs) and onsite sewage disposal systems (OSDSs), and planting cover crops to reduce nitrogen and phosphorus in the Chesapeake Bay.

### Accomplishments

- As of June 30, 2021, the Comptroller of Maryland (CoM) has deposited approximately, since the 2004 program inception, \$1.412 billion in the Maryland Department of the Environment (MDE) WWTP fund, \$204 million in the MDE Septic Systems Upgrade fund, and \$145 million in the Maryland Department of Agriculture (MDA) Cover Crop Program fund, for a total of \$1.761 billion in BRF fees (wastewater and septic users).
- Enhanced Nutrient Removal (ENR) upgrades of the state's major sewage treatment plants are almost completed with 64 of the 67 major facilities currently in operation. Upgrades to two other facilities are under construction, and the one remaining is in planning.
- Upgrades are underway for some minor sewage treatment plants (less than 0.5 million gallons per day). To date, nine minor facilities have completed the ENR upgrade and are in operation. Seven more are under construction, and 15 additional plants have signed the funding agreement and have progressed into planning or design. **All facilities that pay into the BRF are eligible to receive BRF grants if MDE determines that the ENR upgrade would be cost effective at the selected facility.** MDE estimates that approximately 80 minor facilities may meet the cost effective criteria and can be upgraded if they apply for BRF funding.
- MDE is using BRF to upgrade septic systems with the Best Available Technology (BAT) for nitrogen removal. As of June 30, 2021, the BRF has funded 13,635 BAT upgrades throughout Maryland, of which 8,416 upgrades were completed within Maryland's Critical Areas. In addition, 1,134 homes have been connected to public sewers using BRF.
- In April 2018, MDE adopted regulations to implement the State Clean Water Commerce Act (CWCA) of 2017, which authorizes the use of BRF to purchase nitrogen, phosphorus and sediment reductions. Subsequent to the adoption of the regulations, MDE solicited three times (for FY19, FY20, and FY21) for proposals to purchase these reductions achieved through environmental practices. The program ended in FY21, and within three fiscal years, MDE was successful in securing the Board of Public Works (BPW) approval for five proposals, which

were fully executed into agreements. The annual purchases began in 2020 as the funded environmental practices started achieving the reductions.

- In the 2021 legislative session, the legislature established a Clean Water Commerce Account to allow MDE to purchase nitrogen reductions from environmental practices with a life of at least 10 years. Twenty million dollars a year will be transferred from the Wastewater BRF to the Clean Water Commerce Account to be used for these purchases. MDE intends to start soliciting for funding applications for this program during the third or fourth quarter of FY22.
- MDA dedicates its portion of BRF for the implementation of the statewide Cover Crop Program.
- In FY21, Maryland farmers applied to plant 640,864 acres of cover crops. Typically they enroll more acreage than they plant. Farmers planted 433,116 acres attaining an estimated nutrient reduction of 3 million pounds of nitrogen and 3,500 pounds of phosphorus.
- Cover crops are planted in the fall to prevent excess nitrogen runoff from the soil after crop harvest. It is one of the Best Management Practices (BMPs) within Maryland's Watershed Implementation Plan (WIP) to meet Total Maximum Daily Loads (TMDL) nutrient reductions. The practice is recognized as one of the state's most cost effective BMPs available to prevent nitrogen movement to groundwater and subsequently the Bay. Cover crops also prevent soil erosion and improve soil quality.
- Expenditures for FY21 utilized appropriations of \$7.5 million from BRF, and \$11.6 million from Chesapeake and Atlantic Coastal Bays Trust Fund (Trust Fund).
- This summer, 638,000 acres were enrolled in next years' (FY22) Cover Crop Program. The program is traditional, meaning the crop recovers unused plant nutrients in the fall then recycles the nutrients for the following spring crop. The traditional planted acres along with commodity acres reported by the U.S. Department of Agriculture (USDA) Farm Service Agency should allow Maryland farmers to reach Chesapeake Bay goals.
- MDE and the Maryland Department of Planning (MDP or Planning) are continuing their efforts to implement the requirements of Chapter 257 of the 2007 Acts, which requires MDE and Planning, in concert with the BRFAC and in consultation with local governments, to report on the growth influences that ENR-upgraded WWTPs may be having in the jurisdiction served. As part of this report, Planning is continuing its analysis, and is reporting on all qualifying WWTPs, grouped by regions, found in Tables 1 of this report.

### **Conclusions and Recommendations**

MDE will continue to ensure that BRF-funded projects remain on schedule to assist the state in meeting its final 2025 nutrient reduction targets for the Bay.

## Programs and Administrative Functions

### CoM:

The role of the CoM is to act as the collection agent for BRF and make distributions to MDE and MDA as required by the law.

In the third year of administering BRF, the CoM began the compliance phase of the fee administration. The law specifies that BRF shall be administered under the same provisions allocable to administering the sales and use tax. Granted that authority, the CoM began the audit process for both filers and non-filers of BRF quarterly reports.

For non-filers, CoM began contacting the billing authorities and users who have failed to file or pay BRF, and is obtaining sufficient documentation to make an assessment and begin collection activity. **Federal government billing authorities and users have, to date, refused to participate in the BRF process.** MDE secured an agreement with the U.S. Department of Defense (DoD) to have WWTPs upgrade their systems over a defined period of time to exempt them from BRF. A copy of the agreement was provided by MDE to CoM, and those BRF accounts were subsequently placed on inactive status.

The CoM is continuing its audits of billing authorities to ensure fees are calculated correctly, and are being collected.

### MDE:

Three units within MDE are involved in the implementation of BRF.

1. *Maryland Water Quality Financing Administration:*

The Maryland Water Quality Financing Administration was established under Title 9, Subtitle 16 of the Maryland Code. It has primary responsibility for the capital budget development, financial management, and fund accounting of the Water Quality Revolving Loan Fund, the Drinking Water Revolving Loan Fund and BRF. Specifically for BRF, it is responsible for the issuance of revenue bonds, payment disbursements, and the overall financial accounting, including audited financial statements.

2. *Engineering and Capital Projects Program:*

The Engineering and Capital Projects Program manages the engineering and project management of federal capital funds consisting of special federal appropriation grants, and state revolving loan funds for water quality and drinking water projects. Also, it manages projects funded by state grant programs, including BRF, Special Water Quality/Health, Small Creeks and Estuaries Restoration, Stormwater, Biological Nutrient Removal, and Water Supply Financial Assistance. There may be as many as 250 active capital projects ranging in levels of complexity at any given time. Individual projects range in value from \$10,000 to \$500 million. A single project may involve as many as eight different funding sources, and multiple construction and engineering contracts over a period of three to 10 years. The program is responsible for assuring compliance with the requirements for each funding source while achieving the maximum benefit of funds to the recipient and timely completion of the individual projects.

3. *Wastewater Permits Program:*

The Wastewater Permits Program (WWPP) issues permits for surface and groundwater discharges from municipal and industrial sources, and oversees onsite sewage disposal and well construction programs delegated to local approving authorities. Large municipal and industrial discharges to the groundwater are regulated through individual groundwater discharge permits. All surface water discharges are regulated through combined state and federal permits under the National Pollutant Discharge Elimination System. These permits are issued for sewage treatment plants, some water treatment plants and industrial facilities that discharge to state surface waters. These permits are designed to protect the quality of the body of water receiving the discharge.

Anyone who discharges wastewater (WW) to surface waters needs a surface water discharge permit. Applicants include industrial facilities, municipalities, counties, federal facilities, schools, and commercial water and WWTPs, as well as treatment systems for private residences that discharge to surface waters.

WWPP will ensure that the ENR goals and/or limits are included in the discharge permits of facilities upgraded under BRF. To accommodate the implementation of the OSDS portion of BRF, the program has been designated as the lead for the OSDS upgrade program.

**MDA:**

MDA delivers soil conservation and water quality programs to agricultural landowners and operators using a number of mechanisms to promote and support the implementation of BMPs. Programs include information, outreach, technical assistance, financial assistance and regulatory programs such as Nutrient Management. Soil Conservation Districts (SCDs) are the local delivery system for many of these programs.

BRF provides a dedicated funding source for the Cover Crop Program. In prior years, funding fluctuated, and program guidelines were modified accordingly to try to get the best return on public investment. For FY21, incentive payments were streamlined. A maximum payment could have reached \$75/acre for those meeting all of the incentive criteria, which included a \$10/acre spring delayed crop termination incentive.

For FY21, several changes were made to the incentive structure to facilitate improved program delivery 1) The incentive for aerial seeding into standing corn remained at \$10/acre, but the planting date range was extended until Sept.10 to allow for additional acres to be enrolled. 2) The early planting incentives were consolidated into a single tier, which offered a \$10/acre bonus to any field planted before Oct.10. 3) Applicants were also eligible for a \$10/acre incentive to delay cover crop termination until after May 1. This promotes greater nutrient uptake of residual nutrients and also promotes soil health. A maximum payment could have reached \$75/acre for those meeting all of the incentive criteria, which included the updated incentives.

MDA is projected to receive \$11.3 million in BRF support in FY22. It is projected that BRF will provide financial assistance for approximately 225,000 acres of cover crops.

Over the past 7 years, the Cover Crop Program has been co-funded by the BRF and Trust Fund, and has worked to support the increased level of farmer participation.

MDA's outreach for the program included news releases, print ads, direct mail, posters, outdoor banners at commercial grain facilities and equipment dealer facilities, cover crop field signs, seed testing bags, bumper stickers, and educational displays targeted toward farmers.

MDA administers the Cover Crop Program through the Conservation Grants Program, which offers several incentive programs and provides financial assistance to farm operators to help them implement more than 40 BMPs. **Cover crops are one of the most cost-effective methods for sequestering residual nutrients from the soil following the fall harvest of crops.** They minimize nitrogen leaching, prevent soil erosion, and improve soil quality.

### **Planning:**

Planning is a statutory member of the BRFAC. Chapter 80 of the Acts of 2014 allows for the use of BRF monies for the remediation of failing septic systems, outside of the Priority Funding Area (PFA), connecting to the qualified WWTPs. Such cases must meet certain conditions and gain approval from the Smart Growth Coordinating Committee prior to using BRF. Planning works with local governments to ensure that land use plans maintain consistency with both local development goals and state growth policies, in light of these external PFA sewer extensions to remediate failing septic systems.

Specific functions that Planning carries out that relate directly or indirectly to BRF are summarized below. HB 893 enacted by the 2007 session, added an additional BRF reporting responsibility, which is discussed later in this report.

#### **State Clearinghouse Review:**

All state and federal financial assistance applications, including those for BRF funds are required to be submitted for review through the State Clearinghouse, which is part of Planning. The Clearinghouse solicits comments on these applications from all relevant state agencies and local jurisdictions. The applicant and funding agency are subsequently notified of any comments received. This review ensures that the interests of all reviewing parties are considered before a project is sent forward for final federal or state approval.

#### **County Water and Sewerage Plans and Amendments:**

Planning assists local governments in the preparation of amendments and revisions to the water and sewer planning document; when requested by the local governments.

Planning is directed by law to advise MDE regarding the consistency of County Water and Sewerage Plans, and amendments with regard to the "local master plan and other appropriate matters" (Environment Article § 9-507 (b) (2)).

The law requires that County Water and Sewerage Plans, and amendments be consistent with the local comprehensive plans. If a plan or amendment is not consistent, it is subject to disapproval, in whole or in part, by MDE.

PFA:

PFA are delineated by local governments in accordance with statutory criteria that focus on concentrating high density growth in and near existing communities. If the local PFA designations do not meet the legal requirements in the law, Planning indicates those portions as “comment areas” to indicate that not all requirements of the §5-7B-02 and 03 State Finance and Procurement Article are met. In these areas “growth-related projects” are ineligible for certain state funding until requirements are met or unless an exception is granted by the Maryland Smart Growth Coordinating Committee. The PFA statute lists the specific state financial assistance programs that are required to focus their funding on projects inside the PFA, with certain specified exceptions. BRF was enacted after the PFA law and is not included in the list of state financial programs subject to the PFA funding restrictions, but is monitored so not to negatively affect the efforts of Smart Growth policies, namely support to new development at lower densities, especially outside of designated growth areas. Even though PFA law is not directly applicable to this capacity, as highlighted in Table 1 of this report, it appears that treatment capacity has been consistently used for service connections within the PFA. Planning will continue to monitor this activity, especially in areas where major failing septic systems are increasing in numbers, and other jurisdictions where the remediation of failing septic systems for public health and safety reasons is on the rise. Where BRF septic funds are provided for these types of connections, local governments are guided and advised by MDE and Planning.

Local Comprehensive Plan Review and Comment: Local Comprehensive Plans must be prepared by every county and municipality, pursuant to the Land Use Article of the Annotated Code. Planning provides comments on draft local comprehensive plans and amendments. Through the Clearinghouse review process, Planning coordinates other state agency comments prior to being adopted by local governing bodies. While these plans are not subject to state approval and comments provided are advisory only, local governing bodies provide full consideration to the state advisory comments since state funds may later be needed to implement specific recommendations of the local plans. Planning works closely with, and provides technical assistance to local governments in the processes leading to the adoption of local comprehensive plans. Planning ensures coordination with state policies including the plans, policies, and programs of the Governor’s Smart Growth Subcabinet.

### **BRF Status**

BRF fees collected from WWTP users are identified as “Wastewater” fees, and those collected from users on individual OSDs are identified as “Septic” fees. These fees are collected by the CoM and deposited as follows:

- Wastewater fees (net of local administrative expenses) are deposited into MDE’s “Wastewater Fund.”
- Sixty percent of the Septic fees (net of local administrative expenses) are deposited into MDE’s “Septic Fund.”
- Forty percent of the Septic fees (net of local administrative expenses) are deposited into MDA’s “Septic Fund.”

The status of the deposits from the CoM to MDE and MDA for each of the sub-funds identified above, as of June 30, 2021, is as follows:

**Wastewater Fund (MDE 100% - FY21):**

<u>Sources:</u>	<u>\$ Million</u>	<u>Uses:</u>	<u>\$ Million</u>
Cash Deposits	\$ 98.1	Grant Awards	\$ 52.6
Cash Interest Earnings	\$ 0.5	Admin. Expense Allowance	\$ 1.4
Net Bond Proceeds	<u>\$ 0.0</u>	Bond DS Payments	<u>\$ 31.8</u>
Total	\$ 98.6	Total	\$ 85.8

**Wastewater Fund (MDE 100% - cumulative since inception 2004):**

<u>Sources:</u>	<u>\$ Billion</u>	<u>Uses:</u>	<u>\$ Billion</u>
Cash Deposits	\$ 1.412	Grant Awards	\$1.602*
Cash Interest Earnings	\$ .036	Admin. Expense Allowance	\$ .021
Net Bond Proceeds	<u>\$ .362</u>	Bond DS Payments	<u>\$ .200</u>
Total	\$ 1.810	Total	\$1.823

*\*Funds are awarded after construction bids have opened (except for planning/design) and payment disbursements are made as expenses are incurred; \$100 million in additional revenue bonds issuance is projected for FY23.*

As of June 30, 2021, the grants under the Wastewater Fund were awarded as follows:

**MAJOR WWTP ENR GRANTS:**

Aberdeen, City of	Aberdeen WWTP ENR	\$14,581,773.00
Allegany County	Georges Creek WWTP ENR	9,875,136.00
Allegany County	Celanese WWTP ENR	2,333,382.00
Anne Arundel County	Annapolis Water Reclamation Facility (WRF) ENR	14,683,515.00
Anne Arundel County	Broadneck WRF	7,762,678.00
Anne Arundel County	Broadwater WRF ENR	6,044,053.00
Anne Arundel County	Cox Creek WRF ENR	88,600,000.00
Anne Arundel County	Maryland City WRF ENR	3,473,000.00
Anne Arundel County	Mayo WRF Biological Nutrient Program (BNR)/ENR	8,854,528.00
Anne Arundel County	Patuxent WRF ENR	3,713,000.00
Baltimore City	Back River WWTP ENR (SC877)	300,885,432.00
Baltimore City	Back River WWTP ENR (SC882)	46,219,057.00
Baltimore City	Patapsco WWTP ENR	158,922,000.00
Bowie, City of	Bowie WWTP ENR	8,668,492.00



Brunswick, City of	Brunswick WWTP ENR	8,263,000.00
Cambridge, City of	Cambridge WWTP ENR	8,618,255.00
Carroll County	Hampstead WWTP ENR	10,012,819.00
Cecil County	Northeast River WWTP ENR	10,923,342.00
Chesapeake Beach, Town of	Chesapeake Beach WWTP	7,099,652.00
Chestertown, Town of	Chestertown WWTP BNR/ENR	1,490,854.14
Crisfield, City of	Crisfield WWTP BNR/ENR	4,230,766.00
Cumberland, City of	Cumberland WWTP BNR/ENR	25,654,866.00
Delmar, Town of	Delmar WWTP BNR/ENR	2,369,464.00
Denton, Town of	Denton WWTP ENR	4,405,615.00
Denton, Town of	Denton WWTP ENR Refinement	779,754.00
Easton, Town of	Easton WWTP ENR	7,788,021.00
Elkton, Town of	Elkton WWTP BNR/ENR	7,403,154.00
Emmitsburg, Town of	Emmitsburg WWTP ENR	5,517,848.00
Federalburg, Town of	Federalburg BNR/ENR	2,900,000.00
Frederick, City of	Frederick Gas House WWTP ENR	17,422,090.00
Frederick County	Ballenger Creek McKinney WWTP	29,812,509.00
Fruitland, City of	Fruitland WWTP ENR	4,700,298.00
Hagerstown, City of	Hagerstown WWTP ENR	10,191,836.00
Harford County	Joppatowne WWTP ENR	3,399,778.00
Harford County	Sod Run WWTP ENR	36,640,567.00
Havre de Grace, City of	Havre de Grace WWTP ENR	10,474,820.00
Howard County	Little Patuxent WRF ENR	35,493,172.00
Hurlock, Town of	Hurlock WWTP ENR	941,147.75
Indian Head, Town of	Indian Head WWTP ENR	5,822,098.00
LaPlata, Town of	La Plata WWTP ENR	9,367,610.00
Leonardtown, Town of	Leonardtown WWTP ENR	8,667,382.00
Maryland Environmental Services(MES)	Freedom District WWTP ENR	7,716,359.00
MES	MCI WWTP ENR	6,764,539.00
MES	Dorsey Run WWTP ENR	47,986.00
Mt. Airy, Town of	Mt Airy WWTP/ENR	3,354,144.00
Perryville, Town of	Perryville ENR Upgrade	3,888,168.00
Perryville, Town of	Perryville WWTP ENR Refinement	350,493.00
Pocomoke, City of	Pocomoke WWTP ENR	3,214,878.00
Poolesville, Town of	Poolesville WWTP ENR	223,132.00

Poolesville, Town of	Poolesville WWTP ENR Refinements	249,760.00
Queen Anne's County	Kent Island WWTP ENR	6,380,645.09
Salisbury, City of	Salisbury WWTP ENR Upgrade	2,553,876.86
Salisbury, City of	Salisbury WWTP BNR ENR	11,362,766.00
Snow Hill, Town of	Snow Hill WWTP ENR	3,275,455.00
Somerset Co.	Princess Anne WWTP ENR	23,000.00
St. Mary's County	Marlay Taylor WRF ENR	9,896,000.00
Talbot County	St Michaels WWTP ENR	1,978,698.78
Taneytown, City of	Taneytown WWTP ENR	5,381,998.00
Thurmont, Town of	Thurmont WWTP ENR	6,680,679.00
Washington County	Winebrenner WWTP ENR	2,990,607.00
Washington County	Conococheague WWTP ENR	18,725,544.00
Westminster, City of	Westminster WWTP ENR	40,347,789.00
Washington Suburban Sanitary Commission (WSSC)	Blue Plains WWTP ENR	143,632,166.00
WSSC	Damascus WWTP ENR	5,053,399.00
WSSC	Parkway WWTP ENR	14,271,803.00
WSSC	Piscataway WWTP ENR	6,324,000.00
WSSC	Seneca WWTP ENR	5,550,048.00
WSSC	Western Branch WWTP ENR	37,589,528.00

**MAJOR WWTP-ENR GRANT SUBTOTAL**

\$1,302,834,225.62

**MINOR WWTP & EXPANDED USE PROJECT GRANTS:**

**Minor WWTP Projects**

Betterton, Town of	Betterton WWTP BNR/ENR	\$5,935,956.00
Boonsboro, Town of	Boonsboro WWTP ENR	2,000,000.00
Cecil County	Harbour View WWTP ENR	5,131,902.00
Cecil County	Port Deposit WWTP ENR	7,837,445.00
Chesapeake City, Town of	Chesapeake City WWTP ENR	6,868,900.00
Galena, Town of	Galena WWTP ENR	1,768,370.00
Garrett County	Trout Run-Oakland WWTP ENR	1,621,035.00
Greensboro, Town of	Greensboro WWTP ENR	2,581,838.00
Hancock, Town of	Hancock WWTP ENR.	56,500.00
Manchester, Town of	Manchester WWTP ENR	105,575.00
MES	Elk Neck State Park WWTP ENR	80,668.00

MES	Victor Cullen WWTP ENR	5,146,650.00
MES	Cheltenham Village ENR	27,565.00
MES	Point Lookout State Park WWTP ENR	53,035.00
Oxford, Town of	Oxford WWTP ENR	7,321,718.00
Preston, Town of	Preston WWTP ENR	9,120,869.00
Queenstown, Town of	Queenstown WWTP ENR	842,895.00
Rising Sun, Town of	WWTP ENR Upgrade	1,099,268.00
Rock Hall, Town of	WWTP ENR Upgrade	108,571.00
Secretary, Town of	Twin Cities WWTP ENR	317,185.00
Somerset County	Smith Island BNR/ENR	1,121,073.00
Sudlersville, Town of	Sudlersville BNR/ENR	2,299,722.00
Talbot County	Region V-Tilghman Island WWTP ENR	28,990.00
Trappe, Town of	Trappe WWTP ENR	25,975.00
Upper Potomac River Commission (UPRC).	UPRC WWTP ENR	100,000.00
Vienna, Town of	Vienna WWTP ENR	23,475.00

**Sewer Projects**

Allegany County	Bedford Rd Sewer Rehab Phase VI	\$1,137,500.00
Baltimore City	Patapsco Sanitary Sewer Improvements (SSI) (SC- 903)	19,869,452.00
Baltimore City	Herring Run SSI HR07A (SC-937)	5,055,835.00
Baltimore City	Low Level Sanitary Sewer Improvements (SC-914)	12,566,952.00
Baltimore City	SSI SW SC963 & Maiden Choice	12,958,000.00
Baltimore City	Gwynns Falls Sewershed SC921	8,454,271.00
Baltimore City	Gwynns Falls Sewershed SC977	5,720,729.00
Baltimore City	Herring Run Sewershed II SC910	10,686,000.00
Baltimore City	Improvements to Sanitary Sewer Herring Run SC956	6,135,657.00
Baltimore City	Improvement to Sewer SC965	9,803,428.00
Baltimore City	Hydraulic Improvements to SS SC940	10,601,422.00
Carroll County	SW Management-Greens Westm.	347,340.00
Carroll County	SW Management- Woodsyde	833,739.00

Carroll County	SW Management-EastWest Pond	577,904.00
Carroll County	SW Management-Trevanion Terr.	632,010.00
Cumberland, City of	Combined Sewer Overflow (CSO) Storage Facility Phase I	25,895,569.00
Frostburg, City of	CSO Phase VIII-B	2,130,050.00
Frostburg, City of	CSO Phase IX-A	1,779,049.00
Frostburg, City of	CSO Ph IX-B Stoyer Str Corridor	2,001,788.00
Greensboro, Town of	Goldsboro Regional Wastewater Phase V	2,213,095.00
Howard County	Ashleigh Knolls Shared Facility	2,940,900.00
197 Sewer/St Johns Properties	Dover Rd Sewer Connection	42,220.00
197 Sewer/St Johns Properties	BWI Commerce Park Sewer Ext	1,366,176.00
197 Sewer/St Johns Properties	ITC Sewer Extension	1,197,564.00
197 Sewer/St Johns Properties	Business Park Sewer Ext	911,121.00
La Vale Sanitary Commission	La Vale Manhole Rehab Phase II	714,855.00
Luke, Town of	Landslide Sewer Repair	65,000.00
Queen Anne's County	Southern Kent Island Sanitary Ph II	2,000,000.00
WSSC	Lower Anacostia Sewer Basin	3,719,375.00
WSSC	NorthEast Sewer Basin PGC	5,362,875.00

**TOTAL MINOR WWTP & EXPANDED USE PROJECT GRANTS**

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\$219,387,056.00

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**SEWER PROJECTS (PRE FY10)**

Allegany County	Braddock Run Interceptor	\$499,748.00
Baltimore City	Gwynns Run Sewer	1,575,000.00
Baltimore City	Greenmount Br Sewer Interceptor	2,300,000.00
Baltimore City	Greenmount Br Sewer Interceptor II	1,000,000.00

Cumberland, City of	CSO Elimination-Evitts Creek	1,319,889.00
Denton, Town of	Lockerman St. Lift Station	100,000.00
Emmitsburg, Town of	South Seton Ave Sewer Line	600,000.00
Federalsburg, Town of	Maple Ave Sewer	600,000.00
Frostburg, Town of	CSO Phase IV	1,000,000.00
Frostburg, Town of	CSO - Phase V	800,000.00
Frostburg, Town of	CSO - Phase VI Elimination	1,100,000.00
Fruitland, City of	Infiltration & Inflow Sewer	800,000.00
Hagerstown, City of	Collection System Rehab	800,000.00
	Inflow & Infiltration(I&I)	
Havre de Grace, City of	Sewer Reduction	166,500.00
Mountain Lake Park, Town of	Sewer Rehab III	731,884.00
Port Deposit, Town of	I&I Reduction	178,199.00
Secretary, Town of	Gordon Street Lift Station	150,000.00
Secretary, Town of	I&I Reduction	172,068.00
St. Mary's METCOM	Evergreen Park Sewer	203,714.00
St. Mary's METCOM	Piney Point Sewer Repair	465,559.00
Talbot County	St Michaels Sewer Upgrade	1,000,000.00
Talbot County	St Michaels Region II Sewer	450,000.00
Taneytown, City of	Baltimore St Main	200,000.00
Thurmont, Town of	Sewer Line Rehab	947,000.00
Washington County	Halfway Inflow/Infiltration Reduction	200,000.00
Westernport , Town of	CSO	936,000.00
Westernport , Town of	CSO Philos Ave Area	1,032,519.00
Williamsport, Town of	I&I Reduction	383,226.00
<b>SEWER GRANT SUBTOTAL (PRE FY10)</b>		<b>\$19,711,306.00</b>

**OPERATION AND  
MANAGEMENT  
(O&M) GRANTS**

Allegheny County	North Branch WWTP O&M	\$552,000.00
Allegheny County	George's Creek WWTP O&M	160,800.00
Anne Arundel County	Annapolis WWTP O&M	1,500,000.00
Anne Arundel County	Broadneck WWTP O&M	1,350,000.00
Anne Arundel County	Broadwater WWTP O&M	260,000.00
Anne Arundel County	Cox Creek WWTP	600,000.00

Anne Arundel County	Maryland City WWTP O&M	425,000.00
Anne Arundel County	Patuxent WWTP O&M	1,350,000.00
Baltimore, City of	Back River WWTP O&M	125,000.00
Boonsboro, Town of	Boonsboro WWTP O&M	189,540.00
Bowie, City of	Bowie WWTP O&M	455,400.00
Brunswick, City of	Brunswick WWTP O&M	369,600.00
Cambridge, City of	Cambridge WWTP O&M	1,275,750.00
Cecil County	Northeast River WWTP O&M	195,000.00
Charles County	Mattawoman WWTP O&M	816,000.00
Chesapeake Beach, Town of	Chesapeake Beach WWTP O&M	11,250.00
Chestertown, Town of	Chestertown WWTP O&M	235,650.00
Crisfield, City of	Crisfield WWTP O&M	78,000.00
Cumberland, City of	Cumberland WWTP O&M	2,298,000.00
Delmar, Town of	Delmar WWTP O&M	70,000.00
Denton, Town of	Denton WWTP O&M	195,000.00
Easton Utilities	Easton WWTP O&M	1,104,000.00
Elkton, Town of	Elkton WWTP O&M	786,900.00
Emmitsburg, Town of	Emmitsburg WWTP O&M	60,000.00
Federsburg, Town of	Federsburg WWTP O&M	133,500.00
Frederick, City of	Gas House Pike WWTP O&M	380,000.00
Frederick County	Ballenger Creek WWTP O&M	1,450,000.00
Fruitland, City of	Fruitland WWTP O&M	27,500.00
Greensboro, Town of	Greensboro WWTP O&M	52,500.00
Hagerstown, City of	Hagerstown WWTP O&M	2,064,000.00
Harford County	Aberdeen WWTP O&M	720,000.00
Harford County	Joppatowne WWTP O&M	197,500.00
Harford County	Sod Run WWTP O&M	1,725,000.00
Havre de Grace, City of	Havre de Grace WWTP O&M	700,200.00
Howard County	Little Patuxent WWTP O&M	2,200,000.00
Hurlock, Town of	Hurlock WWTP O&M	455,400.00
Indian Head, Town of	Indian Head WWTP O&M	219,000.00
La Plata, Town of	La Plata WWTP O&M	262,500.00
Leonardtown, Town of	Leonardtown WWTP O&M	72,500.00
MES	Dorsey Run WWTP O&M	300,000.00
MES	Freedom District WWTP O&M	192,500.00
MES	ECI WWTP O&M	180,000.00
MES	MD Correctional Institute WWTP O&M	96,000.00
MES	Rocky Gap WWTP O&M	30,000.00

MES	South MD Pre-release WWTP O&M	87,500.00
Mount Airy, Town of	Mount Airy WWTP O&M	273,600.00
Perryville, Town of	Perryville WWTP O&M	209,700.00
Pocomoke City, City of	Pocomoke City WWTP O&M	185,220.00
Poolesville, Town of	Poolesville WWTP O&M	13,500.00
Queen Anne County	Kent Island WWTP O&M	738,000.00
Queenstown, Town of	Queenstown WWTP O&M	60,000.00
Rising Sun, Town of	Rising Sun WWTP O&M	42,500.00
Salisbury, City of	Salisbury WWTP O&M	510,000.00
Snow Hill, Town of	Snow Hill WWTP O&M	190,000.00
St. Mary's County	Marlay Taylor WWTP O&M	435,000.00
Talbot County	Talbot Region II WWTP O&M	254,850.00
Thurmont, Town of	Thurmont WWTP O&M	210,000.00
Washington County	Conococheague WWTP O&M	247,500.00
Washington County	Winebrenner WWTP O&M	90,000.00
WSSC	Blue Plains WWTP O&M	300,000.00
WSSC	Damascus WWTP O&M	315,000.00
WSSC	Parkway WWTP O&M	1,481,250.00
WSSC	Piscataway WWTP O&M	1,500,000.00
WSSC	Seneca WWTP O&M	1,500,000.00
WSSC	Western Branch WWTP O&M	1,500,000.00

**O&M GRANT  
SUBTOTAL**

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\$35,749,610.00

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**CWCA: Nutrient Load Reduction GRANTS**

Anne Arundel County DPW	Municipal Discharge Broadneck & Annapolis WRFs	\$8,181,550.00
Anne Arundel County DPW	Municipal Discharge Cox Creek/Patuxent	9,498,475.00
HGS/Res. Environmental Solutions	Tributary to Winters Run Stream	4,910,825.00
Howard County DPW	Little Patuxent WRF	1,818,450.00

**CWCA GRANT  
SUBTOTAL**

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\$24,409,300.00

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**TOTAL BRF A0111 Grants (WW, Sewer, CWCA &  
O&M)**

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**\$1,602,091,497.62**

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**Septic Fund (MDE 60% for OSDS upgrades FY21):**

<u>Sources:</u>	<u>\$ Million</u>	<u>Uses:</u>	<u>\$ Million</u>
Cash Deposits	\$ 17	Capital Grant Awards	\$ 15
Cash Interest Earnings	\$ 0	Admin. Expense Allowance	\$ 2
		HB-12 Local Admin Grant	\$ 2
<u>Total</u>	<u>\$ 17</u>	<u>Total</u>	<u>\$ 19</u>

**Septic Fund (MDE 60% for OSDS upgrades except 22.4% in FY10 - cumulative since inception 2004):**

<u>Sources:</u>	<u>\$ Million</u>	<u>Uses:</u>	<u>\$ Million</u>
Cash Deposits	\$ 204	Capital Grant Awards	\$ 182*
Cash Interest Earnings	\$ 3	Admin. Expense Allowance	\$ 15
		HB-12 Local Admin Grant	\$ 12 **
<u>Total</u>	<u>\$ 207</u>	<u>Total</u>	<u>\$ 209</u>

*\*Does not include \$15 million of FY21 grant awarded in June 2020. Payment disbursements are made as BATs, and public sewer connections are installed and expenses are incurred.*

*\*\* HB12 passed during the 2014 session allows for up to 10% of the MDE septic fee allocation to be used for grants to local health departments to implement and enforce the septic regulations requiring BAT for nitrogen reduction from septic systems.*

As of June 30, 2021, the grants under the Septic Fund were awarded as follows:

	<b>Capital Program <u>Grant Award</u></b>	<b>HB12 Admin <u>Grant Award</u></b>
Allegany County Health Dept.	\$848,364.85	\$165,000.00
Anne Arundel County Health Dept.	32,169,821.27	435,000.00
Baltimore County Health Dept.	5,349,656.41	513,000.00
Calvert County Health Dept.	16,667,506.69	800,000.00
Caroline County Health Dept.	4,276,444.46	640,000.00
Carroll County Health Dept.	2,804,621.48	267,000.00
Cecil County Health Dept.	9,032,969.16	343,000.00
Charles County Health Dept.	4,921,907.10	483,000.00
Dorchester County Health Dept.	8,377,721.25	698,000.00
Frederick County Health Dept.	4,198,246.55	466,000.00
Garrett County Health Dept.	1,214,231.28	280,000.00
Harford County Health Dept.	4,956,019.06	456,000.00
Howard County Health Dept.	1,925,046.75	259,000.00
Kent County Health Dept.	7,064,126.09	666,000.00



Montgomery County Health Dept.	2,658,606.50	120,000.00
Prince George's County Health Dept.	624,968.16	105,000.00
Queen Anne's County Health Dept.	14,361,476.64	391,000.00
Somerset County Health Dept.	3,678,542.78	389,000.00
St. Mary's County Health Dept.	13,196,437.94	786,000.00
Talbot County Health Dept.	9,766,063.26	692,000.00
Washington County Health Dept.	4,040,259.55	275,000.00
Wicomico County Health Dept.	8,396,319.00	331,000.00
Worcester County Health Dept.	3,665,925.86	155,000.00
Direct Grant Awards Individual	\$17,725,266.58	-
Direct-2nd year O&M BAT vendor	\$408,350.00	-
<b>Total BRF SEPTIC Grant Awards</b>	<b>\$182,338,898.67</b>	<b>\$9,715,000.00</b>

**Septic Fund (MDA 40% for Cover Crops)**

<u>Sources:</u>		<u>Uses:</u>	
Cash Deposits*	\$133,616,727	Grant Awards	\$130,890,568
		Admin. Expense	\$2,726,158
		Total	\$133,616,726

\*Cumulative revenue and expenditures as of June 30, 2021.

Historically there is attrition between acres enrolled and actual payments for cover crops planted under the Conservation Grants Program. The main cause of reduced acreage is one of time and labor availability in the fall planting of cover crops after harvest. Other causes include delays due to weather and other uncontrolled factors. There is also a smaller reduction in acres planted and those paid due to conversions from traditional to commodity cover crops or removal of acres from the program. The Table below illustrates the “typical” program attrition profile.

MDA Cover Crop Program 1 – Acres

Year	Application Acres	Approved Acres	Fall Certification	Paid Acres
2005/2006	210,258	205,268	135,328	126,245
2006/2007	451,467	290,000	243,945	238,674
2007/2008	336,800	303,364	203,497	187,479
2008/2009	398,225	387,022	237,144	238,839
2009/2010	330,469	330,469	206,810	206,810
2010/2011	508,000	492,757	400,311	381,949

Year	Application Acres	Approved Acres	Fall Certification	Paid Acres
2011/2012	570,183	567,154	429,818	400,795
2012/2013	607,433	604,186	415,437	414,558
2013/2014	608,427	602,481	423,212	415,550
2014/2015	631,374	617,714	475,559	473,790
2015/2016	656,173	652,594	501,205	500,022
2016/2017	691,787	689,389	561,344	558,976
2017/2018	636,904	636,904	395,862	359,873
2018/2019	617,269	604,135	362,976	359,702
2019/2020	649,89	620,900	488,214	485,206
2020/2021	640,864	634,739	433,116	429,095
2021/2022	638,226	627,778	TBD	TBD

**CWCA of 2017:**

CWCA passed during the 2017 Session (CH 366/367). This law expanded the uses of the BRF to include the costs associated with the purchase of cost-effective nitrogen, phosphorus, or sediment load reductions, not to exceed \$4 million in FY18, \$6 million in FY19, and \$10 million in FY20 and FY21. The nitrogen, phosphorus, and sediment load reductions purchased cannot come from the agriculture sector. MDE may enter into any contract until June 30, 2021, and may be funded for the expected life of the environmental practice resulting from nutrient load reduction.

In April 2018, MDE adopted regulations with the input of stakeholders, as required by the law, to implement the program. Shortly after the adoption of the regulations, solicitation for proposals was forwarded to all known potential sellers in order to utilize FY19 authorized funding. The required implementing regulations were not completed in time to utilize FY18 funds for the CWCA. FY18 funding was instead used for other eligible projects within the BRF Wastewater Account.

**FY19 Proposals Received:**

Applicant	Nitrogen (\$/Lb /yr)	Phosphorus (\$/Lb /yr)	Sediment (\$/Ton/yr)	Evaluation Results
HGS, LLC (a RES company)	\$105.12	\$144.34	\$552.80	Selected
OptiRTC, Inc.	\$265.00	\$1,535.00	\$1,995.00	Not Selected

**FY19 Grant Awards:**

***Tributaries to Winters Run Stream Restoration by HGS, LLC (a RES company)***

On April 24, 2019, BPW approved up to \$4,409,300 in grants for HGS, LLC to restore approximately 6,236 linear feet of degraded stream channel. Current stream bank erosion throughout the course is significant, resulting in downstream pollution from sediment loss. The proposed project will stabilize the stream and greatly improve water quality for the Winters Run watershed and ultimately the

Chesapeake Bay. The project is currently under construction and is expected to be completed in the spring of 2022. Upon completion of the construction, HGS will provide 20 years of monitoring and maintenance activities, and all restoration areas will be protected in perpetuity by deed restrictions. MDE will provide annual payments for the purchase of verified annual reductions of nitrogen, phosphorus and sediment based on the agreed upon unit prices. Annual purchases are estimated to be between \$220,000 and \$375,000 depending on the actual verified reductions.

The following were the approved prices and estimated budget:

Reduction Type	Estimated Units/Year		Delivery Factor	Unit/Year Delivered	Price per Unit/Year	Total Price/Year
<b>Nitrogen</b>	1,626.00	Lbs/yr	0.43	699.18	\$105.12	\$73,497.80
<b>Phosphorus</b>	749.00	Lbs/yr	0.68	509.32	\$144.34	\$73,515.25
<b>Sediment</b>	129.00	Tons/yr	1.03	132.87	\$552.80	\$73,450.54
Total Annual Price						\$220,463.59
Practice Useful Life (years)						20
Total Over 20 Years						\$4,409,271.73

**FY20 Proposals Received:**

Applicant	Nitrogen (\$/Lb/yr)	Phosphorus (\$/Lb/yr)	Sediment (\$/Ton/yr)	Evaluation Results
Broadneck WRF	\$75.00	\$100.00	\$300.00	Selected
Annapolis WRF	\$75.00	\$100.00	\$300.00	Selected
Little Patuxent WRF	\$79.00	\$99.00		Selected
HGS, LLC (a RES company)	\$105.12	\$144.34	\$552.80	Not Selected
Blue Oyster Environmental	\$750.00	\$8,000		Not Selected

**FY20 Grant Awards:**

***Little Patuxent Water Reclamation Plant Advanced Process Instrumentation and Control System***

On Aug. 14, 2019, BPW approved up to \$1,818,450 in grants for Howard County Department of Public Works to implement advanced online instrumentation coupled with automated control and active management, along with expanded treatment regime to achieve treatment level and performance exceeding ENR to provide additional nitrogen and phosphorus reductions from the original ENR goals. MDE will provide annual payments for the purchase of verified annual reductions of nitrogen and phosphorus beyond ENR based on the agreed upon unit prices. Annual purchases are estimated to be between \$146,000 and \$746,520 depending on the actual verified reductions. The advanced operational improvements started in 2019. The additional nutrient reductions were verified, and a payment of \$403,503 was made for CY19 performance and \$746,520 for CY20.

The following were the approved prices and estimated budget:

Reduction Type	Estimated Units/Year		Delivery Factor	Unit/Year Delivered	Price per Unit/Year	Total Price/Year
<b>Nitrogen</b>	589	Lbs/yr	0.80	471	\$75.00	\$35,325.00
<b>Phosphorus</b>	2,000	Lbs/yr	0.74	1,480	\$99.00	\$146,520.00
Total Annual Price						\$181,845.00
Practice Useful Life (years)						10
Total Over 20 Years						\$1,818,450.00

***Broadneck and Annapolis WRFs***

On April 1, 2020, BPW approved up to \$8,181,550 in grants for Anne Arundel County Department of Public Works to develop and implement an advanced online instrumentation coupled with automated control and active management, along with expanded treatment regime to achieve treatment level and performance exceeding the ENR in order to provide additional nitrogen, phosphorus and sediment reductions from the original ENR goals. MDE will provide annual payments for the purchase of verified annual reductions of nitrogen, phosphorus and sediment beyond ENR based on the agreed upon unit prices. Annual purchases are estimated to be between \$1 and \$2 million depending on the actual verified reductions. The advanced operational improvements started in 2020. The additional nutrient reductions were verified and a payment of \$1,869,666 was made for CY20 performance.

The following were the approved prices and estimated budget:

Reduction Type	Estimated Units/Year		Delivery Factor	Unit/Year Delivered	Price per Unit/Year	Total Price/Year
<b>Nitrogen</b>	20,626	Lbs/yr	1.00	20,626	\$75	\$1,546,950
<b>Phosphorus</b>	3,840	Lbs/yr	1.00	3,840	\$99	\$380,160
<b>Sediment</b>	285	Tons/yr	1.00	285	\$300	\$85,500
Total Annual Price						\$2,012,610
Practice Useful Life (years)						5
Total Over 20 Years						\$10,063,050
(Only \$8,181,550 are available)						

**FY21 Proposals Received:**

In December 2019, MDE solicited for FY21 CWCA authorized funds (\$10 million). On Jan.31, 2020, MDE received seven proposals, six were from WWTPs and only one was from a nonpoint source practice. MDE decided to reject all proposals and re-solicit to allow for more time and competition. On June 1, 2020, MDE received 14 proposals for the second solicitation; eight were from WWTPs and six were from nonpoint source practices.

<b>Applicant</b>	<b>Nitrogen (\$/Lb/yr)</b>	<b>Phosphorus (\$/Lb/yr)</b>	<b>Sediment (\$/Ton/yr)</b>	<b>Evaluation Results</b>
Patuxent	\$50.00	\$75.00	\$250.00	Selected
Cox Creek	\$50.00	\$75.00	\$250.00	Selected
Winters Run	\$55.20		\$40.00	Selected
Rockville Rest	\$63.50	\$84.10	\$254.70	Not Selected
Pea Hill Branch	\$69.00	\$89.00	\$289.00	Not Selected
North East River	\$72.00	\$94.00	\$250.00	Not Selected
Damascus	\$72.50	\$95.00		Not Selected
Seneca	\$72.50	\$95.00		Not Selected
Parkway	\$72.50	\$95.00		Not Selected
Western Branch	\$75.00	\$99.00		Not Selected
Piscataway	\$75.00	\$99.00		Not Selected
Irvine Old Pond	\$95.95	\$590.77	\$4,022.83	Not Selected
Oyster Aquaculture	\$150.00	\$1,500.00		Not Selected
Cheston Point	\$285.86	\$765.73	\$761.90	Not Selected

**FY21 Grant Awards:**

***Patuxent and Cox Creek Water Reclamation Facilities:***

On May 5, 2021, BPW approved up to \$9,498,475 in grants for Anne Arundel to develop and implement advanced online instrumentation coupled with automated control and active management, along with expanded treatment regime to achieve treatment level and performance exceeding the ENR in order to provide additional nitrogen and phosphorus reductions from the original ENR goals. MDE will provide annual payments for the purchase of verified annual reductions of nitrogen and phosphorus beyond ENR based on the agreed upon unit prices. Annual purchases are estimated to be between \$1 and \$2 million depending on the actual verified reductions. The advanced operational improvements started in 2021. The additional nutrient reductions will be verified in spring 2022 in order to pay for CY21 performance.

The following were the approved prices and estimated budget:

<b>Reduction Type</b>	<b>Estimated Units/Year</b>		<b>Delivery Factor</b>	<b>Unit/Year Delivered</b>	<b>Price per Unit/Year</b>	<b>Total Price/Year</b>
<b>Nitrogen</b>	27,500	Lbs/yr	0.80-1.00	26,000	\$50	\$1,300,000
<b>Phosphorus</b>	850	Lbs/yr	0.75-1.00	759	\$75	\$56,925

Total Annual Price	\$1,356,925
Practice Useful Life (years)	7
Total Over 20 Years	\$9,498,475

***Tributaries to Winters Run Stream Restoration by HGS, LLC (a RES company)***

On Dec.2, 2020, BPW approved up to \$501,525 in additional grants for HGS, LLC to restore approximately 6,236 linear feet of degraded stream channel. Current stream bank erosion throughout the course is significant, resulting in downstream pollution from sediment loss. The proposed project will stabilize the stream and greatly improve water quality for the Winters Run watershed and ultimately the Chesapeake Bay by ceasing bank erosion and sediment loss. The project is currently under construction and is expected to be completed in the spring of 2022. Upon completion of the construction, HGS will provide 20 years of monitoring and maintenance activities, and all restoration areas will be protected in perpetuity by deed restrictions. MDE will provide annual payments for the purchase of verified annual reductions of nitrogen, phosphorus and sediment based on the agreed upon unit prices.

On April 24, 2019, BPW previously approved up to \$4,409,300 in grants for HGS, LLC toward this project. The new action would obligate an additional \$501,525 to purchase additional nitrogen and sediment reductions, thereby increasing the state grant funds from \$4,409,300 to \$4,910,825.

The following were the approved prices and estimated budget:

<b>Reduction Type</b>	<b>Estimated Units/Year</b>		<b>Delivery Factor</b>	<b>Unit/Year Delivered</b>	<b>Price per Unit/Year</b>	<b>Total Price/Year</b>
<b>Nitrogen</b>	1,407.00	Lbs/yr	0.43	605	\$50.00	\$30,250.00
<b>Sediment</b>	873.80	Tons/yr	1.03	900	\$40.00	\$36,000.00
Total Annual Price						\$66,250
Practice Useful Life (years)						20
Total Available Grants						\$501,525

**Clean Water Commerce Account:**

During the 2021 legislative session, the General Assembly established a Clean Water Commerce Account to allow MDE to purchase nitrogen reductions from environmental practices with a life of at least 10 years. Twenty million dollars a year will be transferred from the Wastewater BRF to this account to be used for these purchases. MDE intends to start soliciting for funding applications for this program during the third or fourth quarter of FY22.

In each fiscal year, the purchase must include:

- At least 35% from agricultural practices.
- At least 20% from projects in communities disproportionately burdened by environmental harms or risks.
- At least 10% from nonagricultural landscape restoration projects.

Any unencumbered funds not used during the fiscal year for the above categories become available in the subsequent fiscal years for any eligible environmental practice.

## WWTP Upgrades with Enhanced Nutrient Removal

### Status of Upgrades:

MDE is implementing a strategy and is providing financial assistance to upgrade WWTPs in order to achieve ENR level of treatment. MDE's strategy and BRF set forth annual average nutrient goals of WWTP effluent quality of Total Nitrogen (TN) at 3 mg/l and Total Phosphorus (TP) at 0.3 mg/l, where feasible, for all major WWTPs with a design capacity of 0.5 million gallons per day (MGD) or greater. Other smaller WWTPs are currently being selected by MDE for upgrade on a case-by-case basis, based on the cost effectiveness of the upgrade, environmental benefits, and land use factors. Primarily, Maryland's 67 major sewage treatment facilities were targeted for the initial upgrades.

### Major WWTPs:

ENR upgrades of the state's major sewage treatment plants are almost completed with 64 of the 67 major facilities having been upgraded and in operation. Upgrades to two other facilities are under construction, and one is in planning.

### Minor WWTPs:

ENR upgrades are underway for some minor sewage treatment plants (less than 0.5 MGD). MDE and Planning have been assisting local governments in applying for BRF grants, and to date, nine minor facilities have completed the ENR upgrade and are in operation. Seven more are under construction, and 15 additional plants have signed the funding agreement and have progressed into planning or design. All facilities that pay into the BRF are eligible to receive BRF grants if MDE determines that the ENR upgrade would be cost effective at the selected facility. MDE estimates that approximately 80 minor facilities may meet the cost effective criteria and can be upgraded if they apply BRF funding.

### DoD and Other Federal WWTPs:

On July 19, 2006, the State of Maryland and the DoD signed a Memorandum of Understanding (MOU) to resolve a dispute regarding the applicability of BRF to DoD. The state's legal position is that the federal government is not exempt from paying the BRF fee; however, the DoD asserts that the BRF fee is a tax and that the state may not tax the federal government. With the advice of counsel, the state chose to settle the matter with DoD rather than to litigate. In the MOU, neither party concedes any legal position with respect to the BRF fee. MDE has agreed to accept DoD's proposal to undertake ENR upgrades at certain DoD-owned WWTPs at its own expense in lieu of paying the fee.

In addition to the DoD facilities, Beltsville Agricultural Research Center, owned by USDA, has a relatively large WWTP. USDA requested to be covered under the MOU and is currently upgrading its WWTP to ENR in lieu of paying the fee.

No other federal facility is exempt from paying the BRF fee under this MOU. Many federal facilities are connected to public water or sewer systems and are paying the fee through the local billing authorities.

MDE has worked with DoD to complete the ENR upgrade of the targeted facilities as specified in the MOU. Specifically, the following targeted DoD facilities were upgraded to ENR:

<b>DoD Facility</b>	<b>Date of Start Meeting ENR Goals</b>
Aberdeen Proving Ground – Aberdeen	March 2006
Aberdeen Proving Ground – Edgewood	March 2016
Fort Detrick	June 2012
Naval Station – Indian Head	September 2011
Fort Meade	January 2015
Naval Support Activity – Annapolis	April 2021

The following are the upgraded major, minor and federal facilities with their nitrogen and phosphorus reductions achieved in CY20:

<b>ENR WWTP</b>	<b>County</b>	<b>CY20 Average Flow (MGD)</b>	<b>TN Reduction (Lbs)</b>	<b>TP Reduction (Lbs)</b>
Cumberland	Allegany	10.718	208,810.65	59,380.53
George's Creek	Allegany	0.922	45,748.56	5,332.65
North Branch	Allegany	1.357	70,637.43	7,311.59
Rocky Gap	Allegany	0.044	2,276.99	259.84
Annapolis	Anne Arundel	8.760	165,331.16	49,599.35
Broadneck	Anne Arundel	4.646	91,928.78	27,295.77
Broadwater	Anne Arundel	1.233	25,522.95	7,206.48
Cox Creek	Anne Arundel	11.227	228,979.94	66,301.65
Dorsey Run	Anne Arundel	0.902	46,678.23	4,805.11
Fort Mead	Anne Arundel	0.999	49,265.11	5,747.60
Maryland City	Anne Arundel	1.407	27,839.82	8,437.61
Patuxent	Anne Arundel	5.808	109,616.82	33,238.65
Back River	Baltimore	142.400	2,167,399.20	43,347.98
Patapsco	Baltimore City	49.449	1,685,910	186,654
Chesapeake Beach	Calvert	0.825	9,040.98	4,219.12
Denton	Caroline	0.570	9,716.77	3,105.90
Federalsburg	Caroline	0.298	13,969.98	1,660.07
Greensboro	Caroline	0.201	8,933.22	856.61
Freedom District	Carroll	2.115	36,698.15	12,619.01
Mount Airy	Carroll	0.742	14,681.69	4,314.16
Taneytown	Carroll	0.989	11,440.34	4,967.51
Elkton	Cecil	1.869	96,720.19	10,354.75
Northeast River	Cecil	1.244	23,478.53	37.87
Perryville	Cecil	0.630	30,300.97	3,605.43
Rising Sun	Cecil	0.243	11,761.49	1,412.86
Indian Head	Charles	0.402	20,681.01	2,288.37
La Plata	Charles	1.224	23,473.66	7,228.40



<b>ENR WWTP</b>	<b>County</b>	<b>CY20 Average Flow (MGD)</b>	<b>TN Reduction (Lbs)</b>	<b>TP Reduction (Lbs)</b>
Mattawoman	Charles	10.887	487,174.42	2,982.70
Naval Station	Charles	0.501	24,401.51	2,775.67
SMPRU	Charles	0.022	1,051.43	117.87
Swan Point	Charles	0.117	4,843.77	658.90
Cambridge	Dorchester	3.210	55,697.90	17,588.81
Hurlock	Dorchester	1.323	64,437.51	7,410.31
Ballenger Creek	Frederick	7.403	148,734.12	44,394.88
Brunswick	Frederick	0.633	29,481.80	3,718.95
Emmitsburg	Frederick	0.435	20,789.68	2,290.84
Fort Detrick	Frederick	0.849	43,935.50	5,091.35
Frederick	Frederick	5.878	91,255.42	31,134.20
Thurmont	Frederick	0.580	11,476.26	3,407.57
Aberdeen	Harford	1.756	29,934.46	10,102.88
APG-Aberdeen	Harford	0.521	25,692.81	3,140.23
APG-Edgewood	Harford	0.831	39,209.53	4,806.33
Havre de Grace	Harford	2.511	35,925.55	13,988.04
Joppatowne	Harford	0.930	16,986.08	5,350.61
Sod Run	Harford	11.367	200,693.25	63,668.20
Little Patuxent	Howard	18.243	360,967.86	44,426.81
Chestertown	Kent	0.679	32,451.02	3,906.52
Galena	Kent	0.035	1,726	190
Damascus	Montgomery	0.852	17,117.58	4,953.72
Poolesville	Montgomery	0.630	8,054.69	3,662.97
Seneca	Montgomery	15.252	273,928.82	6,592.86
Bowie	Prince George's	1.591	29,058.98	4,068.26
Parkway	Prince George's	6.631	125,149.65	18,772.45
Piscataway	Prince George's	29.441	528,765.95	12,546.99
Western Branch	Prince George's	24.875	416,470.93	48,462.07
Centreville	Queen Anne's	0.464	21,893.17	1,581.96
Kent Island	Queen Anne's	2.350	114,458.16	13,806.52
Queenstown	Queen Anne's	0.108	5,325.96	621.36
Sudlersville	Queen Anne's	0.118	4,490	711
Blue Plains	Regional	122.100	1,858,423.05	29,734.77
Crisfield	Somerset	0.608	29,242.84	3,516.54
ECI	Somerset	0.486	25,002.41	2,884.89
Leonardtown	St. Mary's	0.678	11,764.23	3,921.41
Marlay Taylor	St. Mary's	3.745	61,560.83	19,836.27
Easton	Talbot	2.954	152,868.61	17,624.85

ENR WWTP	County	CY20 Average Flow (MGD)	TN Reduction (Lbs)	TP Reduction (Lbs)
Talbot Region II	Talbot	0.406	20,392.43	2,385.30
Boonsboro	Washington	0.301	14,843.64	1,823.39
Conococheague	Washington	2.976	55,261.37	16,216.04
Hagerstown	Washington	5.581	108,730.38	30,410.53
MCI	Washington	0.806	18,646.94	4,882.55
Winebrenner	Washington	0.175	8,150.58	948.24
Delmar	Wicomico	0.692	27,595.38	3,770.67
Fruitland	Wicomico	0.631	11,140.80	3,707.20
Salisbury	Wicomico	5.128	260,689.42	30,595.88
Pocomoke City	Worcester	0.669	13,440.92	3,848.99
Snow Hill	Worcester	0.431	21,123.31	2,466.57
<b>Total</b>			11,207,299.81	1,127,095.02

**Annual O&M Grants for the Upgraded Facilities:**

Starting in FY10, the law allows up to 10% of the annual fee generated from users of WWTPs to be earmarked for grants for O&M costs of ENR technologies. To ensure that each upgraded facility receives a reasonable and fair amount of grant, MDE, in consultation with BRAC, is allocating the base grants at the following rates:

- Minimum annual allocation per facility (for design capacity ≤ 1 MGD) = \$30,000
- For facility with design capacity between 1 and 10 MGD = \$30,000 per MGD
- Maximum allocation per facility (for design capacity ≥ 10 MGD) = \$300,000

In addition to the base grants specified above, on April 19, 2021, MDE adopted a change in the regulations to allow the department to provide additional funding for WWTPs achieving better than ENR. The goal is to allocate the full amount of the authorized annual O&M fund, which is approximately \$11 million per year based on \$110 million in annual revenue. After distributing the base grants based on the above rates, the remaining amount of the authorized fund is allocated to each WWTP achieving beyond ENR based on the additional load reduction achieved beyond ENR.

On Aug. 11, 2021, BPW approved \$11 million (under FY22 authorization) for facilities that achieved ENR level of treatment during CY20. Also, additional grants were provided for facilities achieving better than ENR level of treatment.

MDE is requesting authorization for \$11 million in FY23. The upgraded facilities will be receiving O&M grants based on the above rates if they continue to achieve ENR level of treatment in CY21.

### **Chesapeake Bay TMDL Implications:**

In early November 2009, the U.S. Environmental Protection Agency (EPA) officially transmitted the WIP guidance. EPA, in coordination with the Bay watershed jurisdictions of Maryland, Virginia, Pennsylvania, Delaware, West Virginia, New York, and Washington D.C., developed and, on Dec.29, 2010, established the TMDL and a nutrient and sediment pollution diet for the Chesapeake Bay, consistent with Clean Water Act requirements. Current model estimates are that the states' Bay water quality standards can be met at basin-wide loading levels of 200 million pounds of nitrogen per year and 15 million pounds of phosphorus per year. Maryland's current target loads are 45.8 million pounds of nitrogen per year and 3.68 million pounds of phosphorus per year by 2025. Currently, Maryland's nutrient loads entering the Chesapeake Bay are 52.7 million pounds of nitrogen per year and 3.62 million pounds of phosphorus per year.

Continuing to upgrade major and minor WWTPs as described above is essential for Maryland to meet its 2025 target loads. In addition, MDE is providing more incentive through the O&M grants for facilities achieving better than ENR levels of treatment.

## Chapter 257 Implementation

Chapter 257 (HB 893) of 2007 - *Bay Restoration Fund - Wastewater Treatment Facilities Upgrades - Reporting Requirements* requires that “Beginning January 1, 2009, and every year thereafter, MDE and Planning shall jointly report on the impact that a wastewater treatment facility that was upgraded to enhanced nutrient removal during the calendar year before the previous calendar year with funds from the Bay Restoration Fund had on growth within the municipality or county in which the wastewater treatment facility is located.”

As required by this law, Planning and MDE have advised the BRFAC with the best available information and data analysis to address this mandate.

### Available Capacity

This report addresses the following funded facilities that were upgraded to ENR with BRF, and completed prior to Jan.1, 2020, and operational for one calendar year:

Facility	County	Design Capacity (MGD)		Flow in CY20 (MGD)
		Original	At Upgrade	
Cumberland	Allegany	15	15	10.718
George’s Creek	Allegany	0.6	0.6	0.992
North Branch	Allegany	2	2	1.357
Annapolis	Anne Arundel	13	13	8.76
Broadneck	Anne Arundel	6	6	4.646
Broadwater	Anne Arundel	2	2	1.233
Cox Creek	Anne Arundel	15	15	11.227
Maryland City	Anne Arundel	2.5	2.5	1.407
Patuxent	Anne Arundel	7.5	7.5	5.808
Back River	Baltimore City	180	180	142.4
Chesapeake Beach	Calvert	1.32	1.5	0.825
Denton	Caroline	0.8	0.8	0.57
Federalsburg	Caroline	0.75	0.75	0.298
Greensboro	Caroline	0.28	0.332	0.201
Freedom District	Carroll	3.5	3.5	2.115
Mount Airy	Carroll	1.2	1.2	0.742
Taneytown	Carroll	1.1	1.1	0.989
Elkton	Cecil	2.7	3.05	1.869
North East River	Cecil	2	2	1.244
Perryville	Cecil	1.65	2	0.63
Rising Sun	Cecil	0.275	0.5	0.243
Indian Head	Charles	0.5	0.5	0.402
La Plata	Charles	1.5	1.5	1.224
Cambridge	Dorchester	8.1	8.1	3.21
Hurlock	Dorchester	2	1.65	1.323

Facility	County	Design Capacity (MGD)		Flow in CY20 (MGD)
		Original	At Upgrade	
Ballenger Creek	Frederick	6	15	7.403
Brunswick	Frederick	0.7	1.4	0.633
Emmitsburg	Frederick	0.75	0.75	0.435
Frederick	Frederick	8	8	5.878
Thurmont	Frederick	1	1	0.58
Aberdeen	Harford	4	4	1.756
Havre De Grace	Harford	1.89	3.03	2.511
Joppatowne	Harford	0.95	0.95	0.93
Sod Run	Harford	20	20	11.367
Little Patuxent	Howard	25	29	18.243
Chestertown	Kent	0.9	0.9	0.679
Galena	Kent	0.08	0.11	0.035
Damascus (WSSC)	Montgomery	1.5	1.5	0.852
Poolesville	Montgomery	0.75	0.75	0.63
Seneca (WSSC)	Montgomery	26	26	15.252
Blue Plains	Regional	169.6	169.6	122.1
Bowie	Princes George's	3.3	3.3	1.591
Parkway (WSSC)	Prince George's	7.5	7.5	6.631
Piscataway (WSSC)	Prince George's	30	30	29.441
Western Branch (WSSC)	Prince George's	30	30	24.875
Kent Narrows	Queen Anne's	2	3	2.35
Queenstown	Queen Anne's	0.085	0.2	0.108
Sudlersville	Queen Anne's	0.20	0.2	0.118
Crisfield	Somerset	1	1	0.608
Leonardtown	St. Mary's	0.68	0.68	0.678
Marlay Taylor	St. Mary's	6	6	3.745
Easton	Talbot	2.35	4	2.954
Talbot Region II	Talbot	0.5	0.66	0.406
Boonsboro	Washington	0.46	0.53	0.301
Conococheague	Washington	4.1	4.5	2.976
Hagerstown	Washington	8	8	5.581
MCI	Washington	1.6	1.6	0.806
Winebrenner	Washington	1	0.6	0.175
Delmar	Wicomico	0.65	0.85	0.692
Fruitland	Wicomico	0.8	0.8	0.631
Salisbury	Wicomico	6.8	8.5	5.128
Pocomoke City	Worcester	1.47	1.47	0.669
Snow Hill	Worcester	0.5	0.5	0.431

## 2021 BRF Analysis Findings

### Methodology

MDP conducts a BRF analysis for each calendar year, as directed by Chapter 257 (HB 893) of 2007 - *Bay Restoration Fund - Wastewater Treatment Facilities Upgrades - Reporting Requirements*. The purpose is to provide the BRAC and legislature with information on the impact that an ENR-upgraded WWTPs may have on growth in the municipalities and counties in which the facility is located. Growth is measured before and after ENR upgrades within existing and planned sewer service area boundaries and PFAs using Geographical Information System mapping software. These findings help assess changes in growth patterns, the capacity of the upgraded facility to meet the demands of current and future users, and possible changes in development patterns that could be influenced by upgrades.

Planning works with every county and many municipalities to maintain and annually update the Statewide Sewer Service Data layer to ensure as accurate a representation as possible. Planning has successfully conducted a BRF analysis each year since 2009 by utilizing the most recently published data from Maryland Property View and the Sewer Service Data layers. It should be noted that data for each of these datasets affects the annual findings.

In 2018, Planning updated the BRF analysis methodology to confirm data boundary discrepancies within the existing sewer service areas both before and after ENR technology implementation, resulting in improved data outputs. Planning is committed to continuous improvement to its processes, contributing to the overarching goal of restoring water quality in the Chesapeake Bay.

### Available Capacity

An ENR upgrade can create the possibility for capacity expansion beyond the original design capacity. However, the limitations of the WWTP nutrient discharge caps established by Maryland's Point Source Policy for the Bay<sup>1</sup> heavily influence whether that possibility can become reality, notwithstanding new treatment technologies or the use of multiple discharge means or wastewater reuse. As required by state regulations that guide county water and sewer plans, to date, all ENR upgrades and plant expansions have been found to be consistent with locally -adopted and -approved comprehensive plans. **Our analyses show that the nutrient discharge caps following the ENR upgrades have not had any noted compromising effects on development.**

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<sup>1</sup> Annual nutrient load caps for major WWTPs were based on an annual average concentration of 3 mg/l total nitrogen and 0.3 mg/l total phosphorus, at the approved design capacity of the plant. Design capacity for major WWTPs met both of the following two conditions: (1) A discharge permit was issued based on the plant capacity, or MDE issued a letter to the jurisdiction with design effluent limits based on the new capacity as of April 30, 2003; (2) Planned capacity was either consistent with the MDE-approved County Water and Sewer Plan as of April 30, 2003, or shown in the locally-adopted Water and Sewer Plan Update or Amendment to the County Water and Sewer Plan, which was under review by MDE as of April 30, 2003 and subsequently approved by MDE.

## Planning's Findings

For this year's reporting period, Planning reviewed development served by 61 WWTPs with ENR upgrades completed within the timeframe specified in Chapter 257 (HB 893) of 2007 - *Bay Restoration Fund - Wastewater Treatment Facilities Upgrades - Reporting Requirements*. The selection of ENR upgrades to be analyzed in the annual report is based on the following criteria: (1) ENR upgrades completed before Jan. 1, 2018, and (2) operational for one calendar year. One new ENR upgrade is included in this year's report, the Upper Eastern Shore Region had one upgrade in Galena.

Table 1 (Attachment 1) summarizes the ENR upgrades that Planning reports to MDE. These ENR upgrades are completed, operational and meet the criteria. Table 1 also distinguishes new ENR upgrades since the last reporting period. The table depicts growth activity by the number of connections before and after an ENR upgrade. The starting point for each plant's reporting is the calendar year prior to the start of ENR funding; the table also shows the year in which the upgrade was completed and became operational. It then summarizes information on the number of connections before ENR funding, and the current number of connections, which includes connections to new development on sewer as well as connections of existing septic systems to sewer.

The table compares development in and outside PFAs, which are designated by local governments and recognized by the state as areas to concentrate growth and development due to the presence of existing or planned infrastructure. BRF funding is not restricted to PFAs, but PFAs provide a useful geographic frame of reference for reviewing possible effects of BRF upgrades on growth as required by the legislation.

The table also shows that for each WWTP, the percentages of connections of improved parcels inside PFAs before and after ENR upgrades are very similar, within a few percentage points in every case.

Columns J and K in the table show the difference between last year's and this year's data. This indicates how many parcels were connected within each sewer shed and how many parcels within the PFA had connections in the sewer shed within the last year.

Planning's analysis shows Little Patuxent has had the largest total increase of connections since conversion to ENR (which occurred in 2012), with an increase of 8,143 connections. Overall, the Washington Region had the largest regional total increase of new connections since conversion of WWTPs to ENR with 15,676 connections. Compared to last year, the Washington Region saw the biggest increase in connections from year-to-year with 1,645 new connections. Statewide, there was an increase of 2,930 additional improved parcels connected during this year's reporting period. Overall, 36,655 improved parcels have been connected since WWTPs statewide have been upgraded to ENR.

Although every effort is made to ensure data is current and correct, there may be significant increases or decreases of new connections from year-to-year. For example, the number of total improved parcels with existing sewer (Column F) may appear to decrease from one year to the next. However, the reason for the decrease may not be related to the number of improved parcels no longer having sewer, but rather adjustments in the MDProperty View data, the PFA layer, or the

sewer layer. Planning evaluates many factors that play a part in source data and findings and make adjustments or corrections, where necessary. It is noted that Annapolis lost a large number of connections since the last reporting period, due to a major update to the MDProperty View data; last year's report was based on 2015/2016 data and this year's report was based on the most recent data available from the 2017/2018 update.

## **OSDS Upgrade Program**

### **Program Implementation**

The BRF Septic System Upgrade Program provides funding for the upgrade of OSDS to the BAT for nitrogen removal and for connecting properties to sewer for conveyance of flows to ENR/BNR WWTPs. The program is managed at the county level with MDE oversight and assistance, with day-to-day management performed mostly by county health departments, but in some counties the county environmental departments or a nonprofit consultant assists in managing the program. The Canaan Valley Institute, a nonprofit corporation based in West Virginia, provides program management for Allegany County, Frederick County, Howard County, Montgomery County, and Washington County.

The BRF statute (Annotated Code of Maryland under 9-1605.2) requires that funding priority for BAT installations be “first given to failing septic systems and holding tanks in the Chesapeake and Atlantic Coastal Bays Critical Areas and then to failing septic systems that the Department (MDE) determines are a threat to public health or water quality.” Chapter 280 (SB 554) Acts of 2009, requires new and replacement septic systems serving property in the Critical Areas to include the BAT for removing nitrogen. In addition, Code of Maryland Regulation (COMAR) 26.04.02.07 effective Jan. 1, 2013, requires all OSDS installed in the Chesapeake Bay and Coastal Bays watersheds for new construction to include BAT.

All BATs must be inspected and have the necessary operation and maintenance performed by a certified service provider at a minimum of once per year for the life of the system. The regulations also require that both individuals that install BATs and individuals that perform operation and maintenance complete a course of study approved by MDE to maintain professional certification.

On Nov.14, 2016, MDE finalized a regulatory change to COMAR 26.04.02.07. This regulatory change will reform the universal requirement that BAT units be installed outside of the Critical Area for all new construction, unless the local jurisdiction enacts a code in order to protect public health or waters of the state, or the system design is 5,000 gallons per day or greater.

Consistent with the above, MDE is requiring all new grant recipients to prioritize applications for financial assistance based on the following:

1. Failing OSDS or holding tanks in the Critical Areas
2. Failing OSDS or holding tanks not in the Critical Areas
3. Non-Conforming OSDS in the Critical Areas
4. Non-conforming OSDS outside the Critical Areas
5. Other OSDS in the Critical Areas, including new construction



6. Other OSDS outside the Critical Areas, including new construction

The program guidance and other information are available on the website at:

[mde.maryland.gov/programs/Water/BayRestorationFund/OnsiteDisposalSystems/Pages/index.aspx](http://mde.maryland.gov/programs/Water/BayRestorationFund/OnsiteDisposalSystems/Pages/index.aspx)

The webpage below (under financial Reports) shows BRF funded BAT installations and sewer connections for FY21. During this fiscal year, 937 BAT installations were completed, and 187 septic systems were eliminated by connecting the dwellings to public sewer.

[mde.maryland.gov/programs/Water/BayRestorationFund/Pages/annualreports.aspx](http://mde.maryland.gov/programs/Water/BayRestorationFund/Pages/annualreports.aspx)

Passed during the 2018 legislative session, the Septic Stewardship Program (HB1765) was created to:

1. Allow nitrogen reduction from OSDS to be counted in the WIP only if the operation and maintenance of the systems are current.
2. Allow nitrogen reduction from pumping out of OSDS to be counted in the WIP if they are part of a local Septic Stewardship Plan.
3. Allow local jurisdictions to provide financial assistance (not to exceed 10% of their allocated funds) toward the pumping out of OSDS.
4. Allow MDE to provide financial assistance to local jurisdictions in FY20 and FY21 to develop Septic Stewardship Plans.

The Septic Stewardship Program became effective October 2, 2018, which allows local jurisdictions the availability to develop plans with FY20 and FY21 funds. MDE introduced the program through regional workshops involving the WIP in June 2018. Conceptual septic stewardship plans have been provided to each county health department or local approving authority, acknowledging that each plan should be customized to address local goals. Despite efforts to promote the program and the availability of funding to develop plans, no counties have elected to participate in this voluntary program in the last fiscal year.

The BRF continues to promote sewer connection to BNR/ENR WWTPs. This includes working with counties on sewer planning activities, including ensuring adequate local wastewater treatment capacity and PFA compliance for areas where counties are looking to expand their sewer service and perform sewer connections.

## **BAT CLASSIFICATION DEFINITIONS**

Effective on July 1, 2015, there are five different classifications of BAT. Each of these classifications works in conjunction with Regulation 26.04.02 for the reduction of nitrogen through OSDS. This classification is intended only to classify the use of BAT systems on domestic wastewater usage. Domestic wastewater is defined by the BAT Technical Review Committee (TRC) as having a TN influent concentration of 60 mg/L. Supporting documents that clearly and concisely define the methods in which each of these classifications can be used are on MDE's webpage for reference.

**BAT Class I** systems are standalone units that are approved through MDE protocols as BAT units capable of reducing TN to 30 mg/L or less. These units are currently on the approved BAT list and have successfully completed the field verification process. The flow chart for approval of BAT Class I units is available on MDE's website.

**BAT Class II** systems are standalone units that are undergoing field verification for BAT Class I. Upon successful completion of the field verification, they will become BAT Class I. All requirements and guidance for BAT Class I apply to BAT Class II technologies. Technologies that do not reduce the effluent nitrogen to 30 mg/l or less will be either removed from the BAT listing, enter a modified field verification process (contingent on prior approval from BAT TRC), or be classified as BAT Class III at the discretion of the BAT TRC and working with the manufacturer's representative.

**BAT Class III** systems are pretreatment technologies approved by MDE as capable of reducing nitrogen to 48 mg/L effluent. These technologies may only be installed as BAT when paired with a BAT Class IV soil disposal system. BAT Class III technologies must have one of the following certifications: National Sanitation Foundation (NSF) 245, NSF 40 Class I, CAN/BNQ 3680-600, CEN Standard 12566-3 or equivalent. Technologies proposed as BAT Class III, must first apply to MDE for BAT classification using the technology application found on the MDE website. The application needs to be accompanied by the final report of the verification organization. Once submitted to the BAT TRC, analysis of the data and the application will begin. The BAT TRC will analyze the TN reduction capabilities of the unit. If the analysis of data concludes the unit will not reduce TN to 48 mg/L, the technology will be denied entry into the BAT program.

**BAT Class IV** systems are OSDS that are installed above, at, or just below (12-inch maximum depth) grade, and are thus capable of reducing effluent TN by 30%. For inclusion as a BAT in Maryland, these units are to be paired with a BAT Class III, Class II or Class I system. No modification of this is authorized unless applied for and approved by MDE on a case-by-case basis.

BAT Class IV systems, installed under the BAT classification, must be maintained on the same frequency as any BAT in accordance with COMAR Regulation 26.04.02.07. Since no specific manufacturer is tied to this type of system, the operation and maintenance provider of the BAT Class III, II, or I unit must successfully complete the MDE-approved course for the Installation and Operation and Maintenance of the specific system.

Sand Mound, At Grade Systems, and Low Pressure Dosing are addressed in COMAR 26.04.02.05. All practices and criteria listed in this regulation must be applied when installing these as BAT. All installation contractors of sand mounds must be certified by MDE. The MDE Design and Construction Manual for Sand Mound Systems and the Construction Manual for At Grade systems is to be utilized for the latest and best installation practices for these systems. Information sheets are available for each system type.

**SAND MOUNDS** – An elevated sand mound system is an OSDS that is elevated above the natural soil surface in a suitable sand fill material. Gravel-filled absorption trenches or beds are constructed in the sand fill, and the effluent is pumped into the absorption area through a pressure distribution network. Pretreatment of sewage occurs either in a septic tank or advanced pretreatment unit, and additional treatment occurs as the effluent moves downward through the sand fill and into the underlying natural soil. The sand mound must be installed over a natural surface, A or B horizon.

No BAT credit is given to sand mounds installed over sand or loamy sand soils. Please refer to, “BAT Class IV: Sand Mound,” for exact details as to what is needed to qualify for BAT Classification.

**AT-GRADE SYSTEMS** – The at-grade system is an OSDS that utilizes a raised bed of gravel or stone over the natural soil surface with a pressure distribution system constructed to equally distribute the pre-treated effluent along the length of the gravel bed. The purpose of the design is to overcome site limitations that prohibit the use of conventional trench or seepage pit OSDS. Please refer to, “BAT Class IV: At-Grade Mound Systems,” for exact details as to what is needed to qualify for BAT Classification.

**SHALLOW PLACED LOW PRESSURE DISTRIBUTION** – Shallow-placed pressure dosing allows for uniform distribution of effluent at a depth not to exceed 12 inches across the entire dispersal field. Dosing allows for the creation of fluctuating aerobic/anoxic environments, which sets up the conditions for nitrification and denitrification to occur. Please refer to, “BAT Class IV: Shallow-Placed Pressure-Dosed Dispersal,” for exact details as to what is needed to qualify for BAT Classification.

**BAT Class V** systems are technologies that mitigate the impact of TN on groundwater, but do not fit into any of the above BAT classifications. As systems are identified that will apply for classification as BAT Class V, the BAT TRC will develop a concise plan for the unit to enter the BAT classification. Examples include, but are not limited to, waterless toilets, and individually engineered peat systems.

## Cover Crop Activities

### Recent Program Streamlining and Targeting to Achieve Maximum Nutrient Reduction:

In FY21, MDA continued to implement a targeting strategy to maximize nutrient reduction effectiveness of cover crops. The 2021 program included incentives to:

1. Plant aurally into standing corn,
2. Plant cover crops as early as possible in the fall,
3. Use planting methods that maximize seed to soil contact to assure germination and early growth, and
4. Delay termination of the cover crop until May 1, 2021.

MDA has applied these criteria by structuring the incentive payments to reward farmers who adhered to one or more of these priorities. They are based both on historical surveys (Schaefer Center of Public Policy at the University of Baltimore) of farm operators' opinions to streamline and adapt the program to be responsive to participants while maximizing water quality benefits.

### Status of Implementation of BRF for Cover Crop Activities:

The MDA cumulative portion of BRF is \$144,943,261 as of June 30, 2021. In FY21, \$11.3 million from BRF was supplemented by an additional \$11.2 million from the Trust Fund to fund the Cover Crops Program.

Similar to last year, cover crop applications were mailed to past participants rather than having farmers visiting SCDs to sign up to encourage social distancing. Those farmers that did not participate last year were able to download applications from the MDA website.

Due to weather conditions and a later than usual harvest, the planting deadline was extended a week to Nov.12, 2020. A second extension was granted until Dec.1, 2020. However acres planted during this extension must remain a cover crop and not terminated until May 1, 2021 in order to receive the base payment of \$40/acre.

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*It is with great pleasure that the BRAC acknowledges the steadfast, commitment, and unwavering service of the professionals who have contributed their time, energy, and efforts toward the production of this report, annually for over 10 years. Thank you!*

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Jeff Fretwell, MDE*

*Jason Dubow, MDP  
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Table 1: Connections to Wastewater Treatment Facilities Upgraded to ENR

			Connections Before ENR Funding					Total Connections Upgraded since Conversion to ENR				Upgraded Connections Since Last Reporting Period	
ENR WWTP	County	ENR Upgrade Completed and Operational (Month-Year)	Column A: Reporting Year before ENR Funding	Column B: Number of Improved Parcels in the Sewershed	Column C: Number of Improved Parcels in Existing Service Area ("S1")	Column D: Number of Improved Parcels in "S1" within PFA	Column E: % of Connections Located in "S1" & PFA (Column D ÷ C)	Column F: Total Improved Parcels in S1	Column G: Total Improved Parcels in S1 & PFA	Column H: % Total Improved Parcels Located in "S1" within PFA (Column G ÷ F)	Column I: Total Increased Improved Parcels in S1 (Total Number New Connections)	Column J: Difference in Improved Parcels in S1	Column K: Difference in Improved Parcels in S1 & PFA
<b>Western Region</b>													
North Branch	ALLE	Nov-06	2005	1,913	1,801	1,794	99.6%	1,832	1,815	99.1%	31	6	7
George's Creek	ALLE	Nov-10	2009	2,069	1,938	1,876	96.8%	1,980	1,921	97%	42	7	7
City of Cumberland	ALLE	Feb-11	2010	17,656	16,412	16,243	99%	16,730	16,576	99.1%	318	29	31
City of Hagerstown	WASH	Dec-10	2009	21,975	18,825	17,769	94.4%	20,449	20,173	98.7%	1,624	84	84
Winebrenner	FRED/WASH	Feb-17	2016	455	455	446	98%	452	443	98%	-3	-6	-6
Conococheague	WASH	Mar-18	2017	6,550	5,980	5,980	100%	6,153	6,153	100%	173	44	44
<b>Western Region Total</b>				<b>50,618</b>	<b>45,411</b>	<b>44,108</b>	<b>97%</b>	<b>47,596</b>	<b>47,081</b>	<b>98.9%</b>	<b>2,185</b>	<b>164</b>	<b>167</b>
<b>Washington Region</b>													
City of Brunswick	FRED	Sep-08	2007	2,446	1,957	1,957	100%	2,279	2,279	100%	322	-1	-1
Town of Thurmont	FRED	Apr-13	2012	2,385	2,345	2,204	94%	2,400	2,271	94.6%	55	-285	15
Town of Poolesville	MONT	Jul-10	2009	1,742	1,719	1,651	96%	1,744	1,673	95.9%	25	-4	-4

Damascus	MONT	Feb-13	2012	3,997	3,793	3,437	90.6%	3,802	3,444	90.6%	9	0	0
City of Bowie	PRIN	Feb-11	2010	20,712	20,559	20,269	98.6%	20,729	20,494	98.9%	170	6	6
Parkway	PRIN	Jul-13	2012	15,470	15,394	15,383	99.9%	15,756	15,627	99.2%	362	73	57
Piscataway	PRIN	May-13	2012	56,296	55,007	51,954	94.4%	58,322	53,570	91.9%	3,315	294	120
Western Branch (WSSC)	PRIN	Apr-16	2015	45,533	43,438	38,554	88.8%	48,067	40,354	84%	4,629	643	269
Blue Plains	PRIN/MONT	Apr-16	2015	330,121	327,437	319,529	97.6%	333,140	325,112	97.6%	5,703	665	621
Seneca (WSSC)	MONT	Apr-16	2015	60,161	57,387	56,911	99.2%	57,813	57,335	99.2%	426	93	93
Ballenger Creek	FRED	Apr-16	2015	21,554	17,110	17,105	100%	17,521	17,516	100%	411	25	25
Town of Emmitsburg	FRED	Mar-16	2015	927	824	791	96%	838	805	96.1%	14	5	2
Frederick	FRED	Jun-18	2017	24,627	22,666	22,666	100%	22,901	22,901	100%	235	131	131
<b>Washington Region Total</b>				<b>585,971</b>	<b>569,636</b>	<b>552,411</b>	<b>97%</b>	<b>585,312</b>	<b>563,381</b>	<b>96.3%</b>	<b>15,676</b>	<b>1,645</b>	<b>1,334</b>
<b>Upper Eastern Shore Region</b>													
Town of Elkton	CECI	Dec-09	2008	6,000	4,926	4,925	100%	5,124	5,121	99.9%	198	31	31
Town of Perryville	CECI	Dec-10	2009	1,704	1,508	1,508	100%	1,563	1,562	99.9%	55	22	22
Rising Sun	CECI	Apr-16	2015	1,052	856	846	98.8%	862	855	99.2%	6	-2	1
Town of Chestertown	KENT	Jun-08	2007	1,772	1,742	1,562	89.7%	1,918	1,713	89.3%	176	12	9
Kent Island (KNSG)	QUEE	Aug-07	2006	6,590	6,401	5,974	93.3%	7,308	6,917	94.6%	907	-37	-38
Town of Denton	CARO	May-12	2011	1,508	1,097	1,095	99.8%	1,564	1,557	99.6%	467	22	22
Town of Federalsburg	CARO	Aug-10	2009	881	827	817	98.8%	830	817	98.4%	3	6	5

Town of Easton	TALB	Jun-07	2006	5,810	5,831	5,822	99.8%	6,671	6,614	99.1%	840	30	30
Talbot Region II	TALB	Oct-08	2007	2,289	2,214	1,981	89.5%	3,171	2,192	69.1%	957	13	10
Northeast River	CECI	Oct-16	2015	5,714	4,459	3,931	88.2%	4,769	4,684	98.2%	310	105	102
Town of Queenstown	QUEE	Oct-16	2015	333	300	299	99.7%	325	324	99.7%	25	8	8
Greensboro	CARO	Jun-17	2016	727	687	687	100%	690	690	100%	3	5	5
Sudlersville	QUEE	Mar-18	2017	187	186	186	100%	185	185	100%	-1	N/A	N/A
Galena (new)	KENT	Dec-18	2017	374	296	328	92.6%	296	274	92.6%	0	N/A	N/A
<b>New Facilities Upgraded During Reporting Period</b>				374	296	274	92.6%	296	274	92.6%	296	N/A	N/A
<b>Upper Eastern Shore Total</b>				<b>34,941</b>	<b>31,330</b>	<b>29,961</b>	<b>96%</b>	<b>35,276</b>	<b>33,505</b>	<b>95%</b>	<b>3,946</b>	<b>696</b>	<b>666</b>
<b>Lower Eastern Shore Region</b>													
City of Cambridge	DORC	Dec-13	2012	5,861	5,418	5,293	97.7%	5,412	5,393	99.6%	-6	-2	-2
Town of Hurlock	DORC	May-06	2005	769	703	703	100%	807	805	99.8%	104	2	-1
Town of Delmar	WICO	Sep-11	2010	1,107	932	824	88.4%	987	869	88%	55	13	12
City of Pocomoke	WORC	Oct-11	2010	1,893	1,607	1,585	98.6%	2,264	1,607	71%	657	641	5
City of Crisfield	SOME	Aug-10	2009	2,495	2,044	1,735	84.9%	2,051	1,810	88.2%	7	1	0
Town of Snow Hill	WORC	Jun-14	2013	900	930	882	94.8%	904	863	95.5%	-26	-26	-20
City of Fruitland	WICO	Nov-16	2015	2,237	1,847	1,788	96.8%	1,976	1,898	96.1%	129	42	39
Salisbury	WICO	Jan-18	2017	10,794	10,705	10,500	98.1%	10,939	10,730	98.1%	234	105	103
<b>Lower Eastern Shore Total</b>				<b>26,056</b>	<b>24,186</b>	<b>23,310</b>	<b>96%</b>	<b>25,340</b>	<b>23,975</b>	<b>94.6%</b>	<b>1,154</b>	<b>776</b>	<b>136</b>

<b>Baltimore Region</b>													
Town of Mount Airy	CARR/FRED	Nov-10	2009	3,336	3,145	3,145	100%	3,435	3,433	99.9%	290	0	0
Joppatowne/Sod Run	HARF	Nov-13	2012	51,174	48,459	48,195	99.5%	49,227	48,961	99.5%	768	43	43
City of Havre De Grace	HARF	May-10	2009	5,098	4,898	4,782	97.6%	5,669	5,666	99.9%	771	62	62
Little Patuxent	HOWA	Sep-12	2011	56,997	50,848	50,833	100%	58,991	58,918	99.9%	8,143	53	53
City of Aberdeen	HARF	Mar-15	2014	5,098	4,524	4,443	98.2%	4,543	4,462	98.2%	19	10	10
Broadneck	ANNE	May-15	2014	30,847	21,172	20,454	96.6%	21,845	21,053	96.4%	673	1	-6
Maryland City	ANNE	Mar-15	2014	4,522	4,394	4,376	99.6%	4,563	4,554	99.8%	169	78	78
Patuxent	ANNE	Mar-15	2014	24,037	22,886	22,440	98.1%	23,895	23,435	98.1%	1,009	-1	-1
City of Annapolis	ANNE	Apr-16	2015	31,823	28,384	27,466	96.8%	28,094	27,170	96.7%	-290	-666	-664
Broadwater	ANNE	Apr-16	2015	4,919	4,694	3,902	83.1%	4,731	3,926	83%	37	-24	-25
City of Taneytown	CARR	Jul-16	2015	2,647	2,486	2,485	100%	2,497	2,496	100%	11	1	1
Back River	BACI/BACO	Sep-17	2016	313,624	311,468	309,249	99%	312,290	310,322	99.4%	822	-169	88
Mayo	ANNE	Oct-17	2016	3,410	3,316	3,066	92%	3,366	3,113	92.5%	50	15	15
Cox Creek	ANNE	Jan-18	2017	48,105	42,688	41,792	98%	42,901	41,944	97.8%	213	32	6
Freedom District	CARR	Mar-18	2017	8,535	7,336	7,336	100%	7,502	7,482	99.7%	166	123	122
<b>Baltimore Region Total</b>				<b>594,172</b>	<b>560,698</b>	<b>553,964</b>	<b>99%</b>	<b>573,549</b>	<b>566,935</b>	<b>98.8%</b>	<b>12,851</b>	<b>-442</b>	<b>-218</b>
<b>Southern Maryland Region</b>													



Town of Indian Head	CHAR	Jan-09	2008	1,409	1,317	1,317	100%	1,404	1,404	100%	87	0	0
Town of La Plata	CHAR	Dec-14	2013	3,164	3,213	3,132	97.5%	3,624	3,608	99.6%	411	57	57
Marlay Taylor	STMA	Aug-16	2015	12,420	7,996	7,984	99.8%	8,308	8,296	99.9%	312	20	20
Chesapeake Beach	CALV	Nov-17	2016	4,041	3,320	2,694	81.1%	3,340	2,710	81.1%	20	12	10
Leonardtown	STMA	Aug-17	2016	1,640	1,089	936	86%	1,102	948	86%	13	2	1
<b>Southern Maryland Total</b>				<b>22,674</b>	<b>16,935</b>	<b>16,063</b>	<b>95%</b>	<b>17,778</b>	<b>16,966</b>	<b>95.4%</b>	<b>843</b>	<b>91</b>	<b>88</b>
<b>Statewide</b>													
New Facilities Upgraded During Reporting Period				N/A	N/A	N/A	N/A	296	274	110.8%	N/A	N/A	N/A
<b>Statewide Totals</b>				<b>1,314,432</b>	<b>1,248,196</b>	<b>1,219,817</b>	<b>98%</b>	<b>1,284,851</b>	<b>1,251,843</b>	<b>97.4%</b>	<b>36,655</b>	<b>2,930</b>	<b>2,173</b>

Notes:

(new) = Facilities upgraded to ENR during the reporting period.

There are a few instances since reporting began in 2009 where the total number of improved parcels in Column C varied slightly due to service boundary discrepancies. Planning has worked diligently to resolve this issue.