Bay Restoration Fund
Advisory Committee

Christopher P. Murphy, Acting Chairman

Annual Status Report
January 2021 (16th Report)

Report to:
Governor Larry Hogan
President of the Senate
Speaker of the House
Senate Education, Health, and Environmental Affairs Committee
Senate Budget and Taxation Committee
House Environment and Transportation Committee
House Appropriations Committee

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
Bob Buglass	Washington Suburban Sanitary Commission
Doug Meyers	Chesapeake Bay Foundation
Cheryl A. Lewis	Town of Oxford
John Dinkel	DBD, LLC
Julie Mackert	Harford County Health Department
Sara L. Trescott	Washington County Health Department
William P. Ball, Ph.D.	Johns Hopkins University

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 16th 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 (OSDS), and planting cover crops to reduce nitrogen and phosphorus pollution in the Chesapeake Bay.

Accomplishments

- As of June 30, 2020, the Comptroller of Maryland (CoM) has deposited approximately $1.314 billion in the Maryland Department of the Environment (MDE) Wastewater Treatment Plant fund, $187 million in the MDE Septic Systems Upgrade fund, and $133 million in the Maryland Department of Agriculture (MDA) Cover Crop Program fund, for a total of $1.634 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 one remaining is in planning.

- Upgrades are underway for some minor sewage treatment plants (less than 0.5 million gallons per day). To date, eight minor facilities have completed the ENR upgrade and are in operation. Six 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.

- MDE is using BRF to upgrade septic systems with the Best Available Technology (BAT) for nitrogen removal. As of June 30, 2020, the BRF has funded 11,124 BAT upgrades throughout Maryland, of which 6,969 upgrades were completed within Maryland's Critical Areas. In addition, 987 homes have been connected to public sewer using BRF.

- In April 2018, MDE adopted regulations to implement the State Clean Water Commerce Act 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. To date, MDE has secured the Board of Public Works (BPW) approval for three

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

- MDA dedicates its portion of BRF for the implementation of the statewide Cover Crop Program.

- In FY20, Maryland farmers applied to plant 649,879 acres of cover crops. Typically they enroll more acreage than they plant. Farmers planted 488,214 acres attaining an estimated nutrient reduction of 3.4 million pounds of nitrogen and 4,000 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 FY20 utilized appropriations of $11.6 million from BRF, and $11.25 million from Chesapeake and Atlantic Coastal Bays Trust Fund (Trust Fund).

- This summer, 641,000 acres were enrolled in next years' (FY21) cover crop program. The program is a traditional cover crop program 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) are continuing their efforts to implement the requirements of Chapter 257 of the 2007 Acts, which requires MDE and MDP, 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, MDP 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 its efforts to ensure that BRF-funded projects remain on schedule to assist the state in meeting its final 2025 nutrient reduction targets for the Bay.

- MDE and MDP, in consultation with the BRFAC have developed a priority system for the selection of minor WWTPs for ENR upgrades. In addition to funding ENR at minor WWTPs, MDE is using its updated Water Quality Integrated Project Priority System for the selection of BRF-funded expanded use projects.

Programs and Administrative Functions

Comptroller's Office:

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.

Maryland Department of the Environment:

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

1. *Maryland Water Quality Financing Administration:*
   The Maryland Water Quality Financing Administration (MWQFA) 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, MWQFA 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 (ECPP) 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, ECPP 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. ECPP 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 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 enhanced nutrient removal (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 WWPP has been designated as the lead for the OSDS upgrade program.

Maryland Department of Agriculture:

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 FY20, incentive payments were adjusted. A maximum payment could have reached $90/acre for those meeting all of the incentive criteria, which included a $15/acre spring delayed crop termination incentive.

For FY20, two new incentive payments were added to the program. 1) An incentive for aerial seeding into standing corn between August 15 and September 1 for $10 per acre. This encouraged farmers to contract with an aerial applicator earlier to help avoid a backlog as the aerial seeding deadline approached. This resulted in more acres being aerially planted. 2) An incentive, which allowed the applicant to delay cover crop termination until after May 1 to be eligible for an additional incentive of $15 per acre. This promotes greater nutrient uptake. A maximum payment

could have reached $90/acre for those meeting all of the incentive criteria, which included the new incentives.

MDA is projected to receive $11.6 million in BRF support in FY21. It is projected that BRF will provide financial assistance for approximately 223,000 acres of cover crops.

Over the past 7 years, the Cover Crop Program has been co-funded by the BRF and Chesapeake Bay 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 Maryland Agricultural Water Quality Cost Share (MACS) Program. MACS offers several incentive programs and provides financial assistance to farm operators to help them implement over 34 BMPs. Cover crops are one of the most cost-effective methods for tying up excess nitrogen from the soil following the fall harvest of crops. They minimize nitrogen leaching, prevent soil erosion, and improve soil quality.

Maryland Department of Planning:

MDP 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. MDP 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 MDP 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 MDP. 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:

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

MDP 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.

Priority Funding Areas:

PFAs 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, MDP indicates those portions as "comment areas" to indicate that not all requirements of the §5-7B-02 and 03 State Finance and Procurement Article (SFPA) are met. In these areas "growth-related projects" are ineligible for certain state funding until SFPA 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. MDP 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 MDP.

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. MDP provides comments on draft local comprehensive plans and amendments. Through the Clearinghouse review process, MDP 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.

MDP works closely with, and provides technical assistance to local governments in the processes leading to the adoption of local comprehensive plans. MDP ensures coordination with state policies including the plans, policies, and programs of the Governor's Smart Growth Subcabinet.

Bay Restoration Fund Status

BRF fees collected from WWTP users are identified as "Wastewater" fees, and those collected from users on individual onsite septic systems are identified as "Septic" fees. These fees are collected by the CoMand deposited as follows:

- Wastewater fees (net of local administrative expenses) are deposited into MDE's "Wastewater Fund."
- Sixty percent (60%) of the Septic fees (net of local administrative expenses) are deposited into MDE's "Septic Fund."
- Forty percent (40%) 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, 2020, is as follows:

Wastewater Fund (MDE 100% - FY20):

Sources:	$ Million	Uses:	$ Million
Cash Deposits	$ 121	Grant Awards	$ 43
Cash Interest Earnings	$ 2	Admin. Expense Allowance	$ 2
Net Bond Proceeds	$ 0	Bond DS Payments	$ 31
Total	$ 123	Total	$ 76

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

Sources:	$ Billion	Uses:	$ Billion
Cash Deposits	$ 1.314	Grant Awards	$1.549*
Cash Interest Earnings	$ .035	Admin. Expense Allowance	$ .020
Net Bond Proceeds	$ .362	Bond DS Payments	$ .169
Total	$ 1.711	Total	$1.738

** 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, 2020, 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	825,994.00
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
Federalsburg, Town of	Federalsburg 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
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
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	11,435,411.00
Snow Hill, Town of	Snow Hill WWTP ENR	3,275,455.00
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
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		$1,302,930,110.62

MINOR WWTP & EXPANDED USE PROJECT GRANTS:

Minor WWTP Projects

Betterton, Town of	Betterton WWTP BNR/ENR	$6,179,829.00
Boonsboro, Town of	Boonsboro WWTP ENR	2,000,000.00
Cecil County	Harbour View WWTP ENR	5,131,902.00
Chesapeake City, Town of	Chesapeake City WWTP ENR	401,381.00
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	24,216.00
MES	Cheltenham Village WWTP ENR	27,565.00
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 ENT Upgrade	25,600.00
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
Trappe, Town of	Trappe WWTP ENR	25,975.00

Sewer Projects

Allegany County	Bedford Rd Sewer Rehab Phase VI	$1,137,500.00
Baltimore City	Patapsco SSI (SC-903)	19,869,452.00
Baltimore City	Herring Run SSI HR07A (SC-937)	5,055,835.00
Baltimore City	Low Level SSI (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 SS 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 Restoration	347,340.00
Cumberland, City of	Combined Sewer Overflow (CSO) Storage Facility Phase I	27,241,372.00
Frostburg, City of	CSO Phase VIII-B	2,130,050.00
Frostburg, City of	CSO Phase IX-A	1,779,049.00
Greensboro, Town of	Goldsboro Regional WW Phase V	2,520,000.00
Howard County	Ashleigh Knolls Shared Facility	2,940,900.00
I97 Sewer/St Johns Properties	Dover Rd Sewer Connection	42,220.00
La Vale Sanitary Commission	La Vale Manhole Rehab Phase II	714,855.00
Luke, Town of	Landslide Sewer Repair	65,000.00
TOTALMINOR WWTP & EXPANDED USE PROJECT GRANTS		$182,923,216.00

SEWER PROJECTS (PRE FY 2010)

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	Combined Sewer Overflow 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
Havre de Grace, City of	I&I Sewer Reduction	166,500.00
Mountain Lake Park,		

Town of	Sewer Rehab III	731,884.00
Port Deposit, Town of	Inflow & Infiltration Reduction	178,199.00
Secretary, Town of	Gordon Street Lift Station	150,000.00
Secretary, Town of	Inflow/Infiltration 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	Inflow & Infiltration Reduction	383,226.00
SEWER GRANT SUBTOTAL (PRE FY 2010)		$19,711,306.00

OPERATION AND MANAGEMENT GRANTS

Allegany County	North Branch WWTP O&M	$492,000.00
Allegany County	George's Creek WWTP O&M	130,800.00
Anne Arundel County	Annapolis WWTP O&M	1,200,000.00
Anne Arundel County	Broadneck WWTP O&M	855,000.00
Anne Arundel County	Broadwater WWTP O&M	200,000.00
Anne Arundel County	Cox Creek WWTP	300,000.00
Anne Arundel County	Maryland City WWTP O&M	350,000.00
Anne Arundel County	Patuxent WWTP O&M	1,125,000.00
Baltimore, City of	Back River WWTP O&M	125,000.00
Boonsboro, Town of	Boonsboro WWTP O&M	159,540.00
Bowie, City of	Bowie WWTP O&M	356,400.00
Brunswick, City of	Brunswick WWTP O&M	327,600.00
Cambridge, City of	Cambridge WWTP O&M	1,032,750.00
Cecil County	Northeast River WWTP O&M	135,000.00
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	205,650.00
Crisfield, City of	Crisfield WWTP O&M	48,000.00
Cumberland, City of	Cumberland WWTP O&M	1,998,000.00
Delmar, Town of	Delmar WWTP O&M	70,000.00
Denton, Town of	Denton WWTP O&M	170,000.00
Easton Utilities	Easton WWTP O&M	984,000.00
Elkton, Town of	Elkton WWTP O&M	695,400.00
Emmitsburg, Town of	Emmitsburg WWTP O&M	30,000.00
Federalsburg, Town of	Federalsburg WWTP O&M	133,500.00
Frederick, City of	Gas House Pike WWTP O&M	140,000.00
Frederick County	Ballenger Creek WWTP O&M	1,150,000.00
Fruitland, City of	Fruitland WWTP O&M	27,500.00
Greensboro, Town of	Greensboro WWTP O&M	22,500.00
Hagerstown, City of	Hagerstown WWTP O&M	1,824,000.00
Harford County	Aberdeen WWTP O&M	600,000.00
Harford County	Joppatowne WWTP O&M	167,500.00
Harford County	Sod Run WWTP O&M	1,425,000.00
Havre de Grace, City of	Havre de Grace WWTP O&M	609,300.00
Howard County	Little Patuxent WWTP O&M	1,900,000.00
Hurlock, Town of	Hurlock WWTP O&M	405,900.00
Indian Head, Town of	Indian Head WWTP O&M	189,000.00
La Plata, Town of	La Plata WWTP O&M	217,500.00
Leonardtown, Town of	Leonardtown WWTP O&M	42,500.00
MES	Dorsey Run WWTP O&M	300,000.00
MES	Freedom District WWTP O&M	87,500.00
MES	ECI WWTP O&M	150,000.00
MES	South MD Pre-release WWTP O&M	48,000.00
MES	South MD Pre-release WWTP O&M	57,500.00
Mount Airy, Town of	Mount Airy WWTP O&M	237,600.00
Perryville, Town of	Perryville WWTP O&M	209,700.00
Pocomoke City, City of	Pocomoke City WWTP O&M	141,120.00
Poolesville, Town of	Poolesville WWTP O&M	13,500.00
Queen Anne County	Kent Island WWTP O&M	648,000.00
Queenstown, Town of	Queenstown WWTP O&M	30,000.00
Rising Sun, Town of	Rising Sun WWTP O&M	12,500.00
Salisbury, City of	Salisbury WWTP O&M	255,000.00

Snow Hill, Town of	Snow Hill WWTP O&M	160,000.00
St. Mary's County	Marlay Taylor WWTP O&M	255,000.00
Talbot County	Talbot Region II WWTP O&M	224,850.00
Thurmont, Town of	Thurmont WWTP O&M	180,000.00
Washington County	Conococheague WWTP O&M	112,500.00
Washington County	Winebrenner WWTP O&M	60,000.00
WSSC	Blue Plains WWTP O&M	300,000.00
WSSC	Damascus WWTP O&M	270,000.00
WSSC	Parkway WWTP O&M	1,256,250.00
WSSC	Piscataway WWTP O&M	1,500,000.00
WSSC	Seneca WWTP O&M	1,200,000.00
WSSC	Western Branch WWTP O&M	1,200,000.00
O&M GRANT SUBTOTAL		$29,580,610.00

CWCA: Nutrient Load Reduction GRANTS

Anne Arundel County DPW	Municipal Discharge Broadneck & Annapolis WRFs	$8,181,550.00
HGS/Res. Environmental Solutions	Tributary to Winters Run Stream	4,409,300.00
Howard County DPW	Little Patuxent WRF	1,818,450.00
CWCA GRANT SUBTOTAL		$14,409,300.00
TOTAL BRF A0111 Grants (WW, Sewer, CWCA & O&M)		**$1,549,554,542.62**

Septic Fund (MDE 60% for Onsite Disposal System upgrades FY20):

Sources:	$ Million
Cash Deposits	$ 17
Cash Interest Earnings	$ 0
Total	$ 17

Uses:	$ Million
Capital Grant Awards	$ 15
Admin. Expense Allowance	$ 2
HB-12 Local Admin Grant	$ 1
Total	$ 18

Septic Fund (MDE 60% for Onsite Disposal System upgrades except 22.4% in FY10 - cumulative since inception 2004):

Sources:	$ Million	Uses:	$ Million
Cash Deposits	$ 187	Capital Grant Awards	$ 167*
Cash Interest Earnings	$ 3	Admin. Expense Allowance	$ 15
		HB-12 Local Admin Grant	$ 8 **
Total	$ 190	Total	$ 190

** 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, 2020, the grants under the Septic Fund were awarded as follows:

	Capital Program Grant Award	**HB12 Admin Grant Award**
Allegany County Health Dept.	$778,429.85	$130,000.00
Anne Arundel County Health Dept.	29,436,214.27	315,000.00
Baltimore County Health Dept.	4,775,105.81	454,000.00
Calvert County Health Dept.	14,665,151.69	680,000.00
Caroline County Health Dept.	3,919,741.71	600,000.00
Carroll County Health Dept.	2,596,574.22	206,000.00
Cecil County Health Dept.	8,219,563.69	269,000.00
Charles County Health Dept.	4,510,113.60	439,000.00
Dorchester County Health Dept.	7,955,214.05	629,000.00
Frederick County Health Dept.	4,066,218.55	398,000.00
Garrett County Health Dept.	1,139,846.22	245,000.00
Harford County Health Dept.	4,342,345.38	393,000.00
Howard County Health Dept.	1,718,338.75	202,000.00
Kent County Health Dept.	6,414,792.09	613,000.00
Montgomery County Health Dept.	2,333,712.50	120,000.00
Prince George's County Health Dept.	442,306.16	70,000.00
Queen Anne's County Health Dept.	12,308,118.14	293,000.00
Somerset County Health Dept.	3,483,631.78	292,000.00
St. Mary's County Health Dept.	12,083,325.94	673,000.00

Talbot County Health Dept.	9,045,778.79	626,000.00
Washington County Health Dept.	3,737,782.55	230,000.00
Wicomico County Health Dept.	7,899,852.75	263,000.00
Worcester County Health Dept.	3,397,337.16	120,000.00
Direct Grant Awards Individual	$17,725,266.58	-
Direct-2nd year O&M BAT vendor	$335,175.00	-
Total BRF SEPTIC Grant Awards	$167,329,937.23	$8,260,000.00

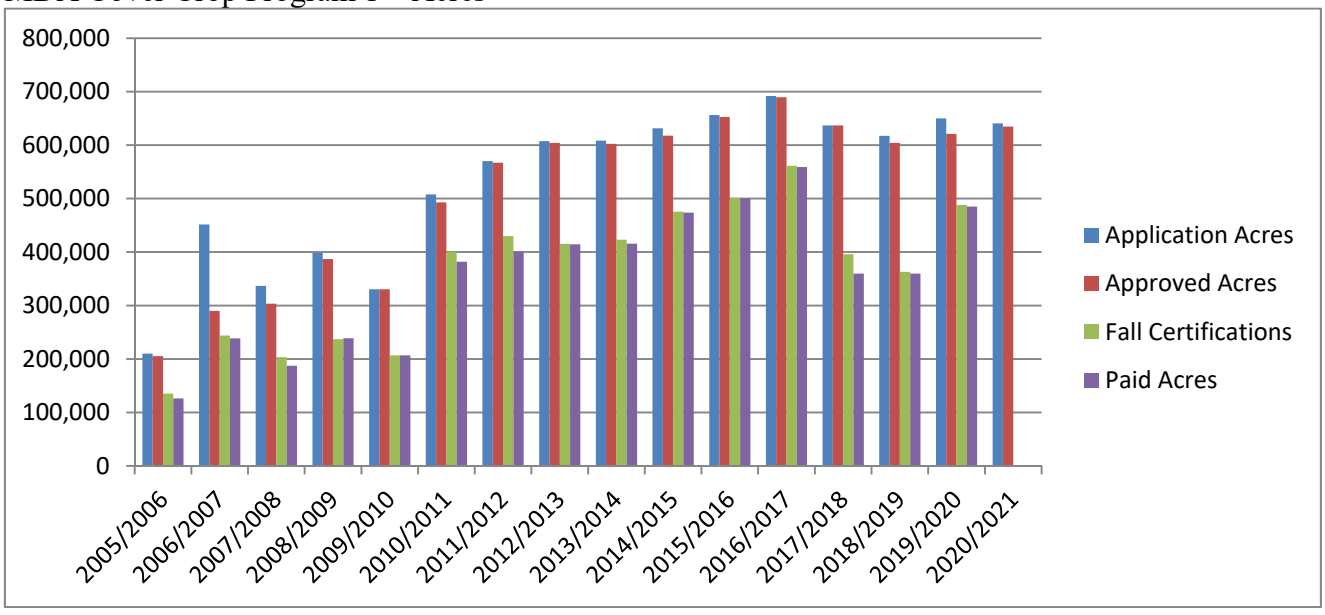
Septic Fund (MDA 40% for Cover Crops)

Sources:		Uses:	
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, 2020.

Historically there is attrition between acres enrolled and actual payments for cover crops planted under the MACS 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 chart below illustrates the "typical" program attrition profile.

MDA Cover Crop Program 1 – Acres



Clean Water Commerce Act of 2017:

The Maryland General Assembly passed Governor Hogan's Clean Water Commerce Act (CWCA) during the 2017 Session (CH366/367). 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, the Board of Public Works 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. 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
Nitrogen	1,626.00	Lbs./yr.	0.43	699.18	$105.12	$73,497.80
Phosphorus	749.00	Lbs./yr.	0.68	509.32	$144.34	$73,515.25
Sediment	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 (APICS)

On August 14, 2019, the Board of Public Works 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 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
Nitrogen	589	Lbs./yr.	0.80	471	$75.00	$35,325.00
Phosphorus	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, the Board of Public Works 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. 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 million and $2 million 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
Nitrogen	20,626	Lbs./yr.	1.00	20,626	$75	$1,546,950
Phosphorus	3,840	Lbs./yr.	1.00	3,840	$99	$380,160
Sediment	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 January 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; 8 were from WWTPs and 6 were from nonpoint source practices.

Applicant	Nitrogen ($/Lb. /yr.)	Phosphorus ($/Lb. /yr.)	Sediment ($/Ton/yr.)	Evaluation Results
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:

The Anne Arundel County Department of Public Works will develop and implement at Cox Creek and Patuxent Water Reclamation Facilities advanced automated control and active management, along with expanded treatment regime to achieve treatment level and performance exceeding the ENR, and provide additional nitrogen and phosphorus reductions from the original ENR goals. will provide annual payments for the purchase of verified annual reductions of nitrogen and phosphorus beyond ENR based on the agreed upon unit prices.

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
Nitrogen	27,500	Lbs./yr.	0.80-1.00	26,000	$50	$1,300,000
Phosphorus	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

The grant agreement was drafted and is being reviewed by the Office of the Attorney General (OAG). The proposed grant award will be submitted for the Board of Public Works approval after the agreement is finalized and signed by the seller.

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

On April 24, 2019, the Board of Public Works approved up to $4,409,300 in grants for HGS, LLC to restore approximately 6,236 linear feet of degraded stream channel. This 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.

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. 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.

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
Nitrogen	1,407.00	Lbs./yr.	0.43	605.0	$50.00	$30,250.00
Sediment	873.80	Tons/yr.	1.03	900.0	$40.00	$36,000.00
					Total Annual Price	$66,250
					Practice Useful Life (years)	20
					Total Available Grants	$501,525

The grant agreement amendment was reviewed by the OAG, and it was sent to the seller. The proposed grant increase will be submitted for Board of Public Works approval after the amendment is finalized and signed by the seller.

Wastewater Treatment Plant Upgrades With Enhanced Nutrient Removal

Status of Upgrades:

MDE is implementing a strategy and is providing financial assistance to upgrade wastewater treatment facilities 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 have been upgraded and are currently in operation. Upgrades to two other facilities are under construction, and one remaining is in planning.

Minor WWTPs:
ENR upgrades are underway for some minor sewage treatment plants (less than 0.5 million gallons per day). MDE and MDP have been assisting local governments in applying for BRF grants, and to date, eight minor facilities have completed the ENR upgrade and are in operation. Six 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.

Department of Defense 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 (BARC), owned by USDA, has a relatively large WWTP. BARC 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 continues to work with DoD to upgrade the targeted facilities as specified in the MOU. Specifically, the following are the targeted DoD facilities with their current ENR upgrade status:

DoD Facility	Status	Remark
Aberdeen Proving Ground – Aberdeen	Operation	Construction was completed in March 2006. ENR upgrade is fully operational.
Aberdeen Proving Ground – Edgewood	Operation	Construction was completed in March 2016. ENR upgrade is fully operational.
Fort Detrick	Operation	Construction was completed in June 2012. ENR upgrade is fully operational.
Naval Station – Indian Head	Operation	Construction was completed in September 2011. ENR upgrade is fully operational.
Fort Meade	Operation	American Water Group has assumed ownership of the plant. ENR upgrade was completed in January 2015.
Naval Support Activity – Annapolis	Under Construction	Construction is scheduled to be completed by February 1, 2021.

The following are the upgraded major, minor and federal facilities with their nitrogen and phosphorus reductions achieved in CY19:

ENR WWTP	County	CY19 Average Flow (MGD)	TN Reduction (Lbs./yr.)	TP Reduction (Lbs./yr.)
Cumberland	Allegany	12.102	221,038.19	68,521.84
George's Creek	Allegany	0.868	42,012.23	5,152.44
North Branch	Allegany	1.470	73,834.65	8,591.67

ENR WWTP	County	CY19 Average Flow (MGD)	TN Reduction (Lbs./yr.)	TP Reduction (Lbs./yr.)
Rocky Gap	Allegany	0.061	3,008.18	328.67
Annapolis	Anne Arundel	8.508	147,625.46	47,136.55
Broadneck	Anne Arundel	4.675	85,387.01	26,896.91
Broadwater	Anne Arundel	0.925	15,768.44	5,293.69
Cox Creek	Anne Arundel	10.979	210,553.40	63,834.44
Dorsey Run	Anne Arundel	0.989	51,180.45	5,027.73
Fort Mead	Anne Arundel	1.466	65,600.96	8,389.78
Maryland City	Anne Arundel	1.380	27,305.58	8,317.70
Patuxent	Anne Arundel	5.410	110,339.49	30,466.87
Back River	Baltimore	149.100	2,087,826.43	31,771.27
Patapsco	Baltimore City	52.556	2,271,797	201,582
Chesapeake Beach	Calvert	0.750	7,762.46	3,972.55
Denton	Caroline	0.467	6,397.18	2,156.09
Federalsburg	Caroline	0.276	13,694.80	1,520.71
Greensboro	Caroline	0.176	8,197.15	916.15
Freedom District	Carroll	2.379	42,003.10	14,266.57
Mount Airy	Carroll	0.883	17,202.82	5,241.48
Taneytown	Carroll	1.244	12,496.64	6,286.19
Elkton	Cecil	1.890	95,505.59	11,046.43
Northeast River	Cecil	1.169	21,707.17	249.10
Perryville	Cecil	0.792	35,440.63	4,291.45
Rising Sun	Cecil	0.241	11,884.78	1,401.23
Indian Head	Charles	0.430	21,597.89	2,408.49
La Plata	Charles	1.130	19,263.06	6,604.48
Mattawoman	Charles	13.093	290,951.73	0
Naval Station	Charles	0.502	24,144.58	2,597.83
SMPRU	Charles	0.029	1,385.98	166.85
Swan Point	Charles	0.145	5,782.27	745.96
Cambridge	Dorchester	2.911	46,965.29	16,393.54
Hurlock	Dorchester	1.268	59,056.76	7,411.04
Ballenger Creek	Frederick	7.852	157,755.00	45,653.34
Brunswick	Frederick	0.630	29,725.64	3,701.32
Emmitsburg	Frederick	0.537	25,664.50	2,942.43
Fort Detrick	Frederick	0.964	49,006.36	5,839.68
Frederick	Frederick	7.664	121,315.91	41,760.67
Thurmont	Frederick	0.784	14,796.76	4,582.22
Aberdeen	Harford	1.845	30,890.00	10,839.58
APG-Aberdeen	Harford	0.548	25,856.59	3,186.20
APG-Edgewood	Harford	0.861	42,459.72	4,350.81
Havre de Grace	Harford	2.207	40,309.97	12,832.01
Joppatowne	Harford	0.940	16,310.29	5,465.38

ENR WWTP	County	CY19 Average Flow (MGD)	TN Reduction (Lbs./yr.)	TP Reduction (Lbs./yr.)
Sod Run	Harford	11.773	207,861.50	62,716.83
Little Patuxent	Howard	18.984	369,850.84	45,653.46
Chestertown	Kent	0.696	33,263.49	3,983.14
Galena	Kent	0.026	910	139
Damascus	Montgomery	0.803	16,326.12	4,897.84
Poolesville	Montgomery	0.607	8,499.74	3,492.28
Seneca	Montgomery	14.899	263,053.47	6,893.81
Bowie	Prince George's	1.655	28,716.52	4,131.15
Parkway	Prince George's	6.590	128,387.96	19,659.41
Piscataway	Prince George's	28.712	332,128.36	10,488.26
Western Branch	Prince George's	23.923	473,356.03	53,161.52
Centreville	Queen Anne's	0.453	21,236.25	1,902.99
Kent Island	Queen Anne's	2.300	110,622.59	13,372.73
Queenstown	Queen Anne's	0.114	5,725.95	687.11
Sudlersville	Queen Anne's	0.100	3,014	591
Blue Plains	Regional	122.7	1,985,045.43	38,837.85
Crisfield	Somerset	0.459	22,635.32	2,738.59
ECI	Somerset	0.494	25,413.97	2,992.53
Leonardtown	St. Mary's	0.639	12,643.67	3,540.23
Marlay Taylor	St. Mary's	3.657	59,001.05	19,481.48
Easton	Talbot	2.751	139,851.13	16,078.69
Talbot Region II	Talbot	0.355	17,938.88	2,118.08
Boonsboro	Washington	0.532	25,911.38	3,222.73
Conococheague	Washington	3.059	54,009.03	16,575.19
Hagerstown	Washington	7.559	154,169.36	42,108.94
MCI	Washington	0.835	17,284.40	5,032.81
Winebrenner	Washington	0.251	12,225.11	1,375.32
Delmar	Wicomico	0.727	28,991.10	3,098.28
Fruitland	Wicomico	0.609	11,308.53	3,040.33
Salisbury	Wicomico	5.044	254,883.71	29,326.98
Pocomoke City	Worcester	0.896	15,819.58	4,882.25
Snow Hill	Worcester	0.322	15,193.10	1,862.38
			11,564,085.68	1,156,666.07

Annual Operation and Maintenance Grants for the Upgraded Facilities:

Starting in FY10, the BRF law allows up to 10% of the annual fee generated from users of wastewater treatment facilities to be earmarked for grants for the operation and maintenance costs of ENR technologies. To ensure that each upgraded facility receives a reasonable and fair amount of grant, MDE, in consultation with BRFAC, is allocating the 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

On July 1, 2020, the Maryland Board of Public Works approved $6,259,000 (under FY21 authorization) for facilities that achieved ENR level of treatment during CY19.

MDE is requesting authorization for $11 million in FY22. The upgraded facilities will be receiving O&M grants based on the above rates if they continue to achieve ENR level of treatment in CY20.

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 DC, developed and, on December 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.

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 MDP 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, MDP 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, that were completed prior to January 1, 2019, and operational for one calendar year:

Facility	County	Design Capacity (MGD)		Flow in CY 2019 (MGD)
		Original	At Upgrade	
Cumberland	Allegany	15.0	15.0	12.102
George's Creek	Allegany	0.6	0.6	0.868
North Branch	Allegany	2.0	2.0	1.470
Annapolis	Anne Arundel	13.0	13.0	8.508
Broadneck	Anne Arundel	6.0	6.0	4.675
Broadwater	Anne Arundel	2.0	2.0	0.925
Cox Creek	Anne Arundel	15.0	15.0	10.979
Maryland City	Anne Arundel	2.5	2.5	1.380
Patuxent	Anne Arundel	7.5	7.5	5.410
Back River	Baltimore City	180	180	149.100
Chesapeake Beach	Calvert	1.32	1.5	0.750
Denton	Caroline	0.8	0.8	0.467
Federalsburg	Caroline	0.75	0.75	0.276
Greensboro	Caroline	0.28	0.332	0.176
Freedom District	Carroll	3.5	3.5	2.379
Mount Airy	Carroll	1.2	1.2	0.883
Taneytown	Carroll	1.1	1.1	1.244
Elkton	Cecil	2.7	3.05	1.890
North East River	Cecil	2.0	2.0	1.169
Perryville	Cecil	1.65	2.0	0.792
Rising Sun	Cecil	0.275	0.50	0.241
Indian Head	Charles	0.5	0.5	0.430
La Plata	Charles	1.5	1.5	1.130
Cambridge	Dorchester	8.1	8.1	2.911
Hurlock	Dorchester	2.0	1.65	1.268
Ballenger Creek	Frederick	6.0	15.0	7.852
Brunswick	Frederick	0.7	1.4	0.630
Emmitsburg	Frederick	0.75	0.75	0.537
Frederick	Frederick	8.0	8.0	7.664
Thurmont	Frederick	1.0	1.0	0.784
Aberdeen	Harford	4.0	4.0	1.845
Havre De Grace	Harford	1.89	3.03	2.207
Joppatowne	Harford	0.95	0.95	0.940
Sod Run	Harford	20.0	20.0	11.773
Little Patuxent	Howard	25.0	29.0	18.984
Chestertown	Kent	0.9	0.9	0.696
Galena	Kent	0.08	0.11	0.026
Damascus (WSSC)	Montgomery	1.5	1.5	0.803
Poolesville	Montgomery	0.75	0.75	0.607
Seneca (WSSC)	Montgomery	26.0	26.0	14.899

Facility	County	Design Capacity (MGD)		Flow in CY 2019 (MGD)
		Original	At Upgrade	
Blue Plains	Regional	169.6	169.6	122.7
Bowie	Princes George's	3.3	3.3	1.655
Parkway (WSSC)	Prince George's	7.5	7.5	6.590
Piscataway (WSSC)	Prince George's	30.0	30.0	28.712
Western Branch (WSSC)	Prince George's	30.0	30.0	23.923
Kent Narrows	Queen Anne's	2.0	3.0	2.300
Queenstown	Queen Anne's	0.085	0.20	0.114
Sudlersville	Queen Anne's	0.20	0.20	0.100
Crisfield	Somerset	1.0	1.0	0.459
Leonardtown	St. Mary's	0.68	0.68	0.639
Marlay Taylor	St. Mary's	6.0	6.0	3.657
Easton	Talbot	2.35	4.0	2.751
Talbot Region II	Talbot	0.5	0.66	0.355
Boonsboro	Washington	0.46	0.53	0.532
Conococheague	Washington	4.10	4.50	3.059
Hagerstown	Washington	8.0	8.0	7.559
Winebrenner	Washington	1.0	0.6	0.251
Delmar	Wicomico	0.65	0.85	0.727
Fruitland	Wicomico	0.8	0.8	0.609
Salisbury	Wicomico	6.8	8.5	5.044
Pocomoke City	Worcester	1.47	1.47	0.896
Snow Hill	Worcester	0.50	0.50	0.322

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 BRFAC and Maryland's legislature with information on the impact that an ENR-upgraded wastewater treatment facility 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 (GIS) 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.

MDP 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. MDP has successfully conducted the BRF Analysis each year since 2009 by utilizing the most recently

published data from Maryland Property View and our Sewer Service Data layers. It should be noted that data vintage for each of these datasets affects the annual BRF Analysis Findings.

In 2018, MDP 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. MDP 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[1] 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. Also, our analyses show that the nutrient discharge caps following the ENR upgrades have not had any noted compromising effects on development.

MDP's Findings

For this year's reporting period, MDP reviewed development served by 59 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 January 1, 2018, and (2) operational for one calendar year. Five new ENR upgrades are included in this year's report. The Baltimore Region had two upgrades: Cox Creek and the Freedom District. Conococheague was upgraded in the Western Region; Frederick was upgraded in the Washington Region and Salisbury was upgraded in the Lower Eastern Shore Region.

Table 1 summarizes all the ENR upgrades that MDP is advised to report on by MDE. These ENR upgrades are completed, operational and meet the criteria above. 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 a) number of connections before ENR funding, and b) the current number of connections, which includes

[1] 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.

connections to new development on sewer as well as connections of existing septic systems to sewer.

The table compares development in and outside PFAs. PFAs are designated by local governments and recognized by the state as areas in which 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.

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.

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 Increase Improved Parcels in S1 (Total Number New Connections)	Difference in Improved Parcels in S1	Difference in Improved Parcels in S1 & PFA
Western Region													
North Branch	ALLE	Nov-06	2005	1,913	1,801	1,794	99.6%	1,826	1,808	99.0%	25	-17	-17
George's Creek	ALLE	Nov-10	2009	2,069	1,938	1,876	96.8%	1,973	1,914	97.0%	35	12	6
City of Cumberland	ALLE	Feb-11	2010	17,656	16,412	16,243	99.0%	16,701	16,545	99.1%	289	-1	-5
City of Hagerstown	WASH	Dec-10	2009	21,975	18,825	17,769	94.4%	20,365	20,089	98.6%	1,540	253	253
Winebrenner	FRED/WASH	Feb-17	2016	455	455	446	98.0%	458	449	98.0%	3	2	6
Conococheague (new)	WASH	Mar-18	2017	6,550	5,980	5,980	100.0%	6,109	6,109	100.0%	129	N/A	N/A
New Facilities Upgraded During Reporting Period				6,550	5,980	5,980	100.0%	6,109	6,109	100.0%	129	N/A	N/A
Western Region Total				50,618	45,411	44,108	97%	47,432	46,914	98.9%	2,021	249	243
Washington Region													
City of Brunswick	FRED	Sep-08	2007	2,446	1,957	1,957	100.0%	2,280	2,280	100.0%	323	20	20
Town of Thurmont	FRED	Apr-13	2012	2,385	2,345	2,204	94.0%	2,685	2,256	84.0%	340	330	25
Town of Poolesville	MONT	Jul-10	2009	1,742	1,719	1,651	96.0%	1,748	1,677	95.9%	29	25	23
Damascus	MONT	Feb-13	2012	3997	3,793	3,437	90.6%	3,802	3,444	90.6%	9	6	5
City of Bowie	PRIN	Feb-11	2010	20,712	20,559	20,269	98.6%	20,723	20,488	98.9%	164	-224	17
Parkway	PRIN	Jul-13	2012	15,470	15,394	15,383	99.9%	15,683	15,570	99.3%	289	221	120
Piscataway	PRIN	May-13	2012	56,296	55,007	51,954	94.4%	58,028	53,450	92.1%	3,021	996	473
Western Branch (WSSC)	PRIN	Apr-16	2015	45,533	43,438	38,554	88.8%	47,424	40,085	84.5%	3,986	3,221	1,333
Blue Plains	PRIN/MONT	Apr-16	2015	330,121	327,437	319,529	97.6%	332,475	324,491	97.6%	5,038	4,090	3948
Seneca (WSSC)	MONT	Apr-16	2015	60,161	57,387	56,911	99.2%	57,720	57,242	99.2%	333	179	177
Ballenger Creek	FRED	Apr-16	2015	21,554	17,110	17,105	100.0%	17,496	17,491	100.0%	386	212	212
Town of Emmitsburg	FRED	Mar-16	2015	927	824	791	96.0%	833	803	96.4%	9	5	8
Frederick (new)	FRED	Jan-18	2017	24,627	22,666	22,666	100.0%	22,770	22,770	100.0%	104	N/A	N/A
New Facilities Upgraded During Reporting Period				24,627	2,347	2,347	100.0%	22,770	22,770	100.0%	20,423	N/A	N/A
Washington Region Total				585,971	569,636	552,411	97%	583,667	562,047	96.3%	14,031	9,081	6,361
Upper Eastern Shore Region													
Town of Elkton	CECI	Dec-09	2008	6,000	4,926	4,925	100.0%	5,093	5,090	99.9%	167	27	26
Town of Perryville	CECI	Dec-10	2009	1,704	1,508	1,508	100.0%	1,541	1,540	99.9%	33	-13	-12
Rising Sun	CECI	Apr-16	2015	1,052	856	846	98.8%	864	854	98.8%	8	13	7
Town of Chestertown	KENT	Jun-08	2007	1,772	1,742	1,562	89.7%	1,906	1,704	89.4%	164	9	-1
Kent Island (KNSG)	QUEE	Aug-07	2006	6,590	6,401	5,974	93.3%	7,345	6,955	94.7%	944	107	103
Town of Denton	CARO	May-12	2011	1,508	1,097	1,095	99.8%	1,542	1,535	99.5%	445	35	35
Town of Federalsburg	CARO	Aug-10	2009	881	827	817	98.8%	824	812	98.5%	-3	-4	-5
Town of Easton	TALB	Jun-07	2006	5810	5,831	5,822	99.8%	6,641	6,584	99.1%	810	112	100
Talbot Region II	TALB	Oct-08	2007	2,289	2,214	1,981	89.5%	3,158	2,182	69.1%	944	721	21
Northeast River	CECI	Oct-16	2015	5,714	4,459	3,931	88.2%	4,664	4,582	98.2%	205	79	80
Town of Queenstown	QUEE	Oct-16	2015	333	300	299	99.7%	317	316	99.7%	17	10	10
Greensboro	CARO	Jun-17	2016	727	687	687	100.0%	685	685	100.0%	-2	-2	-2
Upper Eastern Shore Total				34,380	30,848	29,447	95%	34,580	32,839	95%	3,732	1,094	362
Lower Eastern Shore Region													
City of Cambridge	DORC	Dec-13	2012	5861	5,418	5,293	97.7%	5,414	5,395	99.6%	-4	-11	-11
Town of Hurlock	DORC	May-06	2005	769	703	703	100.0%	805	806	100.1%	102	7	8
Town of Delmar	WICO	Sep-11	2010	1,107	932	824	88.4%	974	857	88.0%	42	11	10
City of Pocomoke	WORC	Oct-11	2010	1,893	1,607	1,585	98.6%	1,623	1,602	98.7%	16	-9	-9
City of Crisfield	SOME	Aug-10	2009	2,495	2,044	1,735	84.9%	2,050	1,810	88.3%	6	-31	-29
Town of Snow Hill	WORC	Jun-14	2013	900	930	882	94.8%	930	883	94.9%	0	5	6
City of Fruitland	WICO	Nov-16	2015	2,237	1,947	1,788	96.8%	1,934	1,859	96.1%	87	30	23
Salisbury (new)	WICO	Jan-18	2017	10,794	10,705	10,500	98.1%	10,834	10,627	98.1%	129	N/A	N/A
New Facilities Upgraded During Reporting Period				10,794	10,705	10,500	98.1%	10,834	10,627	98.1%	129	N/A	N/A
Lower Eastern Shore Total				26,056	24,186	23,310	96%	24,564	23,839	97.0%	378	2	-2
Baltimore Region													
Town of Mount Airy	CARR/FRED	Nov-10	2009	3,336	3,145	3,145	100.0%	3,435	3,433	99.9%	290	8	8
Joppatowne/ Sod Run	HARF	Nov-13	2012	51,174	48,459	48,195	99.5%	49,184	48918	99.5%	725	249	246
City of Havre De Grace	HARF	May-10	2009	5,098	4,898	4,782	97.6%	5,607	5,604	99.9%	709	239	239
Little Patuxent	HOWA	Sep-12	2011	56,997	50,848	50,833	100.0%	58,938	58865	99.9%	8,090	646	644
City of Aberdeen	HARF	Mar-15	2014	5,098	4,534	4,443	98.2%	4,533	4,452	98.2%	9	8	8
Broadneck	ANNE	May-15	2014	30,847	21,172	20,454	96.6%	21,944	21,059	96.4%	672	63	46
Maryland City	ANNE	Mar-15	2014	4,522	4,394	4,376	99.6%	4,485	4,476	99.8%	91	2	1
Patuxent	ANNE	Mar-15	2014	24,037	22,886	22,440	98.1%	23,896	23,436	98.1%	1,010	80	80
City of Annapolis	ANNE	Apr-16	2015	31,833	28,394	27,466	96.8%	28,760	27834	96.8%	376	127	125
Broadwater	ANNE	Apr-16	2015	4919	4,694	3,902	83.1%	4,755	3,951	83.1%	61	28	25
City of Taneytown	CARR	Jul-16	2015	2,647	2,486	2,485	100%	2,496	2,495	100.0%	10	0	0
Back River	BALC/BALC	Sep-17	2016	313,634	311,468	309,349	99%	312,459	310,334	99.3%	991	417	349
Mayo	ANNE	Oct-17	2016	3,410	3,316	3,066	92%	3,351	3,098	92.5%	35	22	20
Cox Creek (new)	ANNE	Jan-18	2017	48,105	42,688	41,792	98%	42,869	41933	97.8%	181	N/A	N/A
Freedom District (new)	CARR	Mar-18	2017	8535	7,336	7,336	100%	7,379	7,360	99.7%	43	N/A	N/A
New Facilities Upgraded During Reporting Period				56,640	50,024	49,128	98%	315,310	313,333	99.2%	224	N/A	N/A
Baltimore Region Total				594,172	560,698	553,964	99%	573,991	567,153	98.8%	13,293	1,889	1,791
Southern Maryland Region													
Town of Indian Head	CHAR	Jan-09	2008	1,409	1,317	1,317	100.0%	1,404	1,404	100.0%	87	0	0
Town of La Plata	CHAR	Dec-14	2013	3,164	3,213	3,132	97.5%	3,567	3,551	99.6%	354	176	242
Marylay Taylor	STMA	Aug-16	2015	12,420	7,996	7,984	99.8%	8,288	8,276	99.9%	292	120	120
Chesapeake Beach	CALV	Nov-17	2016	4,041	3,320	2,694	81.1%	3,328	2,700	81.1%	8	8	6
Leonardtown	STMA	Aug-17	2016	1,640	1,089	936	86.0%	1,100	947	86.1%	11	7	7
Southern Maryland Total				22,674	16,935	16,063	95%	17,687	16,878	95.4%	752	311	375
Statewide													
New Facilities Upgraded During Reporting Period				98,611	69,056	67,955	98.4%	89,961	88804	98.7%	20,905	N/A	N/A
Statewide Totals				1,313,871	1,247,714	1,219,303	98%	1,281,921	1,249,670	97.5%	34,207	12,626	9,130

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.

This year, MDP's analysis shows Little Patuxent had the largest annual increase of connections, with an increase of 8,090 connections. Overall, the Washington Region had the largest regional annual increase of new connections with 14,031. Compared to last year, the Washington Region saw the biggest increase in connections from year-to-year. Statewide, there was an increase of 12,626 additional improved parcels connected during this year's reporting period. Overall, 34,207 improved parcels have been connected since being 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. We evaluate the many factors that play a part in our source data and findings and make adjustments or corrections, where necessary.

Onsite Sewage Disposal System Upgrade Program

Program Implementation

The BRF Septic System Upgrade Program (SSUP) provides funding for the upgrade of OSDS to theBAT 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 Davis, 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 January 1, 2013, requires all OSDS installed in the Chesapeake Bay and Coastal Bays watersheds for new construction to include BAT.

All BAT 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 BAT and individuals that perform operation and maintenance complete a course of study approved by MDE to maintain professional certification.

On November 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

The webpage below (under financial Reports) shows BRF funded BAT installations and sewer connections for FY20. During this fiscal year, 836 BAT installations were completed, and 319 septic systems were eliminated by connecting the dwellings to public sewer.

mde.maryland.gov/programs/Water/BayRestorationFund/Pages/annualreports.aspx

Passed during 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. Portions of the septic stewardship plan currently exist in three counties that have a septic pumping out program. No additional 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 Priority Funding Area (PFA compliance for areas where counties are looking to expand their sewer service and perform sewer connections.

BEST AVAILABLE TECHNOLOGY 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 for 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 FY20, MDA continued to implement a targeting strategy to maximize nutrient reduction effectiveness of cover crops. The 2020 program included incentives to:

1. Plant aerially 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:

MDA cumulative portion of BRF is $133,616,727 as of June 30, 2020. In FY20, $13.6 million from BRF was supplemented by an additional $13.4 million from the Trust Fund to fund the Cover Crops Program.

In light of COVID-19, cover crop applications were mailed to past participants rather than having farmers visiting SCDs to sign up so social distancing was maintained. Those farmers that did not participate last year were able to download applications from the MDA website. The total signup for the 2020-2021 program is 1,557 participants and signing up nearly 640,900 acres.

Due to weather conditions and a later than usual harvest, the planting deadline was extended a week to November 12, 2020. A second extension was granted until December 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.

It is with great pleasure that the BRFAC 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 ten years. Thank you!

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