Bay Restoration Fund Advisory Committee

Gregory B. Murray, Chairman

Annual Status Report

January 2016 (11th Report)

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

Bay Restoration Fund Advisory Committee Members

Committee Members	Affiliation
Gregory B. Murray	Washington County
Ben Grumbles	Maryland Department of the Environment
Delegate Barbara A. Frush	Maryland House of Delegates
James L. Hearn	Washington Suburban Sanitary Commission
Beth Lynn McGee, Ph.D.	Chesapeake Bay Foundation
Christopher P. Murphy	Anne Arundel County Department of Public Works
Kevin Barnaba	Harford County Health Department
William P. Ball, Ph.D.	Johns Hopkins University
Cheryl A. Lewis	Town of Oxford
Mark J. Belton	Maryland Department of Natural Resources
David R. Craig	Maryland Department of Planning
David R. Brinkley	Maryland Department of Budget & Management
Joseph Bartenfelder	Maryland Department of Agriculture

PURPOSE OF THIS REPORT

Section 9-1605.2 of the Environment Article requires that, beginning January 2006 and every year thereafter, the Bay Restoration Fund (BRF) Advisory Committee 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 Bay Restoration Fund Advisory Committee (BRFAC) is pleased to present to Governor Larry Hogan and the Maryland Legislature, its eleventh annual Legislative Update Report. Great strides have been made in implementing this historic Bay Restoration Fund (BRF), but many challenges remain as we continue with the multi-year task of upgrading the State's wastewater treatment plants and onsite sewage disposal systems and planting cover crops to reduce nitrogen and phosphorus pollution in the Chesapeake Bay.

Accomplishments

- As of July 30, 2015, the Comptroller of Maryland has deposited approximately $730 million in the Maryland Department of the Environment (MDE) Wastewater Treatment Plant fund, $101 million in the Maryland Department of Environment Septic Systems Upgrade fund, and $76 million in the Maryland Department of Agriculture (MDA) Cover Crop Program fund, for a total of $907 million in BRF fees (Wastewater and Septic Users).

- Enhanced Nutrient Removal (ENR) upgrades of the State's major sewage treatment plants are currently underway. Upgrades to 41 major facilities have been completed and are in operation. Upgrades to 20 other facilities are under construction, four are in design, and two are in planning.

- Most major sewage treatment plants including the largest plants (greater than 10 million gallons per day) are expected to be completed by 2017. There are less than six plants that may not meet the 2017 deadline for being completed. . However, if that occurs, it will not prevent Maryland from meeting the load reduction goals because most upgraded plants are far exceeding their nutrient reduction goals.

- MDE has started targeting minor sewage treatment plants (less than 0.5 million gallons per day). The goal is to complete the upgrade of at least five minor plants before 2017 consistent with the Maryland Watershed Implementation Plan (WIP) for the Chesapeake Bay Total Maximum Daily Loading (TMDL). Previously, three minor facilities completed the ENR upgrade using other State and federal funding sources. Four more are under construction and expected to be completed by 2017, which would allow Maryland to exceed its goal for minor facilities.

- In addition to the seven minor sewage plants (mentioned above) that are expected to be upgraded by 2017, MDE is encouraging other minor plants to apply for funding and initiate the planning for ENR. To date, seven additional plants have signed the funding agreement and have progressed into planning or design.

- MDE is also using BRF funds to upgrade septic systems with the Best Available Technology (BAT) for nitrogen removal. To date, BRF has funded 7,069 BAT upgrades throughout Maryland, of which 3,935 were completed within Maryland's Critical Areas.

- The Maryland Department of Agriculture (MDA) dedicates its portion of BRF funds for the implementation of the statewide Cover Crop Program. In FY2015, farmers planted 475,560 acres attaining an estimated nutrient reduction of 2.9 million pounds of nitrogen and 95,000 pounds of phosphorus. Cover crops are one of the Best Management Practices (BMPs) comprising Maryland's Watershed Implementation Plan to meet nutrient reductions for TMDL. Goals are established in 2 year increments known as milestones. Cover crop implementation in FY2015 represents 123% of Maryland's 2015 Milestone goal.

- In FY2016 Maryland farmers applied to plant 652,594 acres of cover crops which is a record signup. Although farmers typically enroll more acreage than they complete planting, farmers are projected to exceed the 2016/2017 milestone goal of 417,014 acres.

- MDA is projected to receive $11.2 million in BRF support in FY2016. It is projected that BRF will provide financial assistance for approximately 221,000 acres of cover crops.

- Over the past four years, funding gaps for the Cover Crop Program have been addressed with funding from the 2010 Chesapeake Bay Trust Fund to support the increased level of participation required to meet TMDL goals.

- Cover crops are planted in the fall to prevent excess nitrogen runoff from the soil after crop harvest. They are 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.

- MDE and Maryland Department of Planning (MDP) are continuing their efforts to implement the requirements of Chapter Number 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 wastewater treatment plants may be having in the jurisdiction served. As part of this report, MDP is continuing its analyses and is reporting on all qualifying wastewater treatment plants, grouped by State Regions, found in Table 1 on Page 26 of this report.

Challenges

The United States Environmental Protection Agency (EPA), in coordination with the Bay watershed jurisdictions of Maryland, Virginia, Pennsylvania, Delaware, West Virginia, New York, and the District of Columbia (DC), developed and established the Total Maximum Daily Loading (TMDL) and a nutrient and sediment pollution diet for the Chesapeake Bay, consistent with Clean Water Act requirements. The Maryland Phase I Watershed Implementation Plan (WIP) calls for specific strategies to achieve 60% of the Final Target by 2017 as an interim reduction target and ultimately achieving 100% of the Final Target by 2025. MDE will continue to use its Integrated Priority System to prioritize/allocate future funding to the different sectors. The Committee will monitor the project selections under this process and recommend changes to the process as needed. All the following sectors, except Agriculture, are funded through MDE:

- Point Source: Point Source includes major and minor municipal treatment plants. Most major plants and at least five additional minor plants will need to be upgraded to Enhanced Nutrient Removal (ENR) in order to achieve the interim target reduction of 60% by 2017. Additional minor plants need to be upgraded after 2017 to assist in meeting the Final 2025 Target. In addition, further reductions in this sector may be achieved by BRF funding of combined and separate sewer overflow control. MDE continues to make great strides toward this goal. To date, 41 of the 67 major facilities have been completed and are in operation. Upgrades to 20 other facilities are under construction. Only six plants remain in planning or design. In addition, three minor plants are in ENR operation, and four more are in construction and targeted to be completed by 2017.

- Septic Systems: BRF funding will continue to be provided before and after 2017 for BAT septic systems to support local teams and MDE strategies.

- Stormwater: BRF funding can be provided starting July 2017 for stormwater BMPs to support local initiatives and MDE strategies.

- Agriculture: Annual agricultural BMPs are set at about the same level in the interim as in the Final Target. Cover Crop activities being funded by BRF are essential to the success of the agricultural strategy.

Recent Statutory Changes:

During the 2015 legislative session, the BRF statute was amended (Chapters 124 and 153, Acts 2015) impacting the expanded uses of the Wastewater Fund. The law amends the prioritization of project funds starting FY 2018 (except as indicated below) as follows:

1. Funding an upgrade of a wastewater facility to enhance nutrient removal at wastewater facilities with a design capacity of 500,000 gallons or more per day;
2. Funding for the most cost-effective enhanced nutrient removal upgrades at wastewater facilities with a design capacity of less than 500,000 gallons per day;

3. Funding any of the following types of projects selected based on water quality and public health benefits, as determined by the Department of the Environment:
   (i) Combined sewer overflow abatement, rehabilitation of existing sewers, and upgrading conveyance systems, including pumping stations (starting FY 2016);
   (ii) Nitrogen reduction from onsite sewage disposal systems/septic systems;
   (iii) Stormwater projects being undertaken by local governments who have implemented a system of charges;
   (iv) Stormwater alternative compliance plan, undertaken by an organization exempt from taxation under IRS regulations, if required by a local government because the organization has substantial financial hardship as a result of a local government stormwater remediation fee.

Conclusions

- MDE will continue to use the Bay Cabinet process to improve its benchmarks and tracking of implementation efforts to ensure that BRF funded projects remain on schedule to assist the State in meeting both the interim 2017 and final 2025 nutrient reduction targets.

- 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 will use its existing water quality priority rating system for the selection of BRF funded expanded use projects.

Programs and Administrative Functions

Comptroller's Office:

The role of the Comptroller of Maryland (CoM) is to act as the collection agent for the Bay Restoration Fund and make distributions to the Maryland Department of the Environment and the Maryland Department of Agriculture as required.

In the third year of administering the BRF, the CoM began the compliance phase of the fee administration. The law specifies that the 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 begun contacting the billing authorities and users who have failed to file or pay the 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 several defense organizations having wastewater treatment plants to upgrade their systems over a defined period of time and they were then exempted from the BRF by MDE. BRF law exempts facilities from paying into the BRF fee if they are upgraded to meet ENR without receiving any funding from MDE. 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 the Maryland Department of the Environment (MDE) are involved in the implementation of the Bay Restoration Fund.

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

II. *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. The Program also manages projects funded by State grant programs, including Bay Restoration Fund, 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 ten 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. ECPP consists of two regional project management divisions.

III. *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 all 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 (NPDES). 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 wastewater treatment plants, as well as treatment systems for private residences that discharge to surface waters.

WWPP will ensure that the enhanced nutrient removal goals and/or limits are included in the discharge permits of facilities upgraded under the BRF. To accommodate the implementation of the Onsite Sewage Disposal System portion of the Bay Restoration Fund, the WWPP Deputy Program Manager has been designated as the lead for the onsite sewage disposal system upgrade program.

Maryland Department of Agriculture:

The 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 best management practices (BMPs). Programs include information, outreach, technical assistance, financial assistance, and regulatory programs such as Nutrient Management. Soil Conservation Districts are the local delivery system for many of these programs.

The Chesapeake Bay Restoration Fund provides a dedicated fund 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. Results from past surveys of farm operators conducted by the Schaeffer Center of Public Policy at the University of Baltimore, indicated that changing Cover Crop Program eligibility guidelines and funding uncertainty discouraged participation.

Adjustments were made to the program in 2009 and 2010 with a goal of maximizing program participation and water quality benefits. The incentive structure maximizes nutrient reductions emphasizing early planting, planting cover crops after corn or vegetables, planting cover crops on fields where manure has been used as a nutrient source, planting rye, using certain tillage methods, and planting in priority watersheds. Base payment per acre rates are adjusted to offset costs for fuel and seed. Incentive payments ranged from $25 per acre to a maximum of $100 per acre if participants followed highly valued management practices.

Funding expenditures for FY2015 was approximately $24.1 million, with $11.0 million from BRF, and $13.1 million from Chesapeake Bay 2010 Trust Fund.

In FY2016, over 652,000 acres were enrolled preparing Maryland farmers to again exceed the 471,014 acre Chesapeake Bay 2017 Milestone goal for cover crops. MDA's outreach for the program included news releases, print ads, direct mail, posters, 25' 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. Additionally inclement weather, which impacts crop productivity, influenced farmers' decision to enroll additional acres because a projected early harvest allows additional time for cover crop planting.

MDA administers the Cover Crop Program through the Maryland Agricultural Water Quality Cost Share Program or MACS. The MACS program offers several incentive programs and provides financial assistance to farm operators to help them implement over 30 BMPs. Cover crops are one of the most cost effective methods for preventing excess nitrogen runoff from the soil following the fall harvest of crops. They minimize nitrogen leaching, prevent soil erosion, and improve soil quality.

Maryland Department of Planning:

The Maryland Department of Planning (MDP) is a statutory member of the Bay Restoration Fund Advisory Committee. Chapter 80 of the Acts of 2014 allows for the use of BRF monies for the remediation of failing septic systems, outside of the PFA, connecting to qualified wastewater treatment plants. Such cases must meet certain conditions and gain approval from the Smart Growth Coordinating Committee prior to using Bay Restoration Funds. 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 the BRF programs are summarized below. Chapter 257 of the Acts of 2007, added an additional BRF reporting responsibility which is discussed later in this report.

1. 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.

2. 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.

3. Priority Funding Areas (PFA)

Priority Funding Areas 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." This MDP designation ("comment area") means 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" may not be eligible for certain State funding 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.

Even though PFA law is not directly applicable to this capacity, as highlighted in Table 1 on Page 26 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 as on Kent Island, in Anne Arundel County, and the Talbot County Region 2 Sewer Service Area (St. Michaels), 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.

4. Local Comprehensive Plan Review and Comment

Local Comprehensive Plans must be prepared by every county and municipality in Maryland, 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 up to adoption of local comprehensive plans. MDP's advisories ensure coordination with state policies including the plans, policies, and programs of the Governor's Smart Growth Subcabinet.

Bay Restoration Fund Status

The Bay Restoration Fund (BRF) fees collected from wastewater treatment plant 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 State Comptroller's Office and 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 Maryland Department of Agriculture's (MDA) "Septic Fund."

The status of the deposits from the State Comptroller's Office to MDE and MDA for each of the sub-funds identified above, as of June 30, 2015, is as follows:

Wastewater Fund (MDE 100% for ENR, Sewer Infrastructure and O&M grants):

Sources:	$ Million	Uses:	$ Million
Cash Deposits	$730*	Capital Grant Awards	$1,118**
Cash Interest Earnings	$ 26	Admin. Expense Allowance	$ 11
Net Bond Proceeds	$166	Bond DS Payments	$ 36
Total	$922	Total	$1,1165

** As part of the Budget Reconciliation and Financing Acts of 2010 and 2011, $290 million of BRF fee revenue was transferred to the general fund and the BRF was replenished with $290 million in State General Obligation bonds.*

*** Funds are awarded after construction bids have opened (except for planning/design) and payment disbursements are made as expenses are incurred; additional revenue bonds issuance is projected as $180M & $100M in FY 2016 & FY 2017 respectively.*

The grants under the Wastewater Fund were awarded toward the following uses:

1. **ENR WWTP:** Over 90% of the fund is used toward planning, design, construction, and upgrade of wastewater facilities to achieve enhanced nutrient removal.
2. **Sewer Projects:** In FY2005 through 2009, up to $5 million annually was used toward projects related to combined sewer overflows abatement, rehabilitation of existing sewers, and upgrading conveyance systems, including pumping stations.
3. **O&M:** In FY 2010 and thereafter, up to 10% of the Wastewater Fund is used annually toward the operation and maintenance cost related to the enhanced nutrient removal technology.

ENR Projects	Grant Award
Aberdeen ENR	$14,982,000
Allegany Co/ Georges Creek ENR	$9,875,136
Allegany Co/ Celanese ENR	$2,333,382
Anne Arundel Co/ Annapolis WRF ENR	$14,700,000
Anne Arundel Co/ Broadneck WRF	$7,851,000
Anne Arundel Co/ Broadwater ENR	$6,050,000
Anne Arundel Co/ Cox Creek WRF ENR	$88,600,000
Anne Arundel Co/ MD City Facility ENR	$3,473,000
Anne Arundel Co/ Patuxent WRF ENR	$3,713,000
Baltimore City/Back River WWTP ENR	$215,156,867
Baltimore City/Patapsco ENR	$158,922,000
Bowie ENR	$8,668,492
Brunswick, City of/ WWTP ENR	$8,263,000
Cambridge ENR	$8,944,000
Cecil Co./North East River Adv WWTP ENR	$10,977,120
Chesapeake Beach WWTP ENR	$7,080,000
Chestertown ENR	$1,490,854
Crisfield WWTP ENR	$4,230,766
Cumberland WWTP ENR	$25,654,866
Delmar WWTP ENR	$2,369,464
Denton WWTP ENR	$4,405,615
Easton WWTP ENR	$7,788,021

Elkton ENR	$7,403,154
Emmitsburg WWTP ENR	$5,581,000
Federalsburg ENR	$2,900,000
Frederick, City of /Frederick Gas House	$16,060,521
Fred. Co./ Ballenger Creek McKinney WWTP	$31,000,000
Fruitland WWTP ENR Up	$4,809,000
Hagerstown, City of /WWTP ENR II	$10,191,836
Harford Co./ Joppatown ENR	$3,399,778
Harford Co./ Sod Run ENR	$37,781,000
Havre de Grace WWTP ENR	$10,474,820
Howard County/Little Patuxent ENR	$35,493,172
Hurlock WWTP ENR	$941,148
Indian Head ENR	$5,822,098
La Plata ENR Upgrade	$9,367,610
Leonardtown WWTP ENR	$8,996,527
MD Env Serv/Freedom District WWTP ENR	$7,716,359
MD Env Serv/Correctional Instit. WWTP ENR	$318,000
MD Env Serv/Dorsey Run WWTP ENR	$47,986
Mt Airy WWTP/ENR	$3,354,144
Perryville ENR	$3,888,168
Pocomoke WWTP ENR	$3,214,878
Poolesville WWTP ENR	$223,132

Queen Anne's/ Kent Island ENR	$6,380,645
Queenstown WWTP BNR ENR	$880,929
Rising Sun, Town of/ BNR ENR WWTP	$1,099,268
Salisbury WWTP ENR	$2,553,877
Salisbury WWTP BNR ENR (incl Drain Pump St)	$14,090,890
Secretary ,Town of/Twin Cities WWTP ENR Up	$50,000
Snow Hill/BNR ENR	$3,275,455
St. Mary's Co./Marlay Taylor Water Reclam.	$9,896,000
Sudlersville, Town of/ BNR ENR Upgrade	$2,364,420
Talbot Co/St Michaels ENR	$1,978,699
Taneytown/WWTP ENR Up Planning & Des	$5,566,494
Thurmont WWTP ENR	$6,680,679
Washington Co./Winebrenner	$3,059,028
Westminster WWTP ENR	$1,020,000
WSSC/Blue Plains WWTP ENR	$138,036,769
WSSC/Damascus WWTP ENR	$5,235,000
WSSC/Parkway WWTP ENR	$14,271,803
WSSC/Piscataway WWTP ENR	$6,324,000
WSSC/Seneca WWTP ENR Upgrade & Exp	$6,221,000
WSSC/Western Branch WWTP ENR	$39,109,000
ENR SUBTOTAL	$1,092,606,870
SEWER GRANTS – Statewide SUBTOTAL	$19,711,306

O & M GRANT- Statewide SUBTOTAL	$5,522,310
TOTAL BRF (WW FUND) GRANT AWARDS	$1,117,840,486

Septic Fund (MDE 60% for On-Site Disposal System upgrades except 22.4% in FY 2010):

Sources:	$ Million	Uses:	$ Million
Cash Deposits	$100.8	Capital Grant Awards	$ 94.3***
Cash Interest Earnings	$ 2.6	Admin. Expense Allowance	$ 8.1
		HB-12 Local Admin Grant	$ 1.0****
Total	$103.4	Total	$103.4

**** Does not includes $14 million of FY 2016 grant awarded in June 2015. Payment disbursements are made as BATs are installed and expenses are incurred.*

***** HB-12 passed during the 2014 legislative 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.*

SEPTIC GRANT APPLICANTS	**Grant Awards**
Allegany Co. (GY11-14)	$124,292
Allegany Co. Canaan Val Instit. (GY15)	$122,500
Anne Arundel Co. (GY08-14)	$11,461,686
Anne Arundel Co. (GY15)	$3,149,000
Baltimore Co. (GY11-14)	$1,095,954
Baltimore Co. (GY15)	$675,000
Calvert Co. (GY08-14)	$6,539,546
Calvert Co. (GY15)	$1,343,000
Caroline Co. (GY08-14)	$1,855,699
Caroline Co. (GY15)	$429,000
Carroll Co. (GY11-14)	$426,749

Carroll Co. (GY15)	$479,500
Cecil Co. (GY09-14)	$3,102,681
Cecil Co. (GY15)	$1,042,000
Charles Co. (GY08-14)	$1,738,293
Charles Co. (GY15)	$548,000
Dorchester Co. (GY09-14)	$3,734,470
Dorchester Co. (GY15)	$840,000
Frederick Co. (Canaan Valley Inst.) (GY08-14)	$1,971,994
Frederick Co. (Canaan Valley Inst.) (GY15)	$484,000
Garrett Co. (GY11-14)	$413,917
Garrett Co. (GY15)	$157,500
Harford Co. (GY09-14)	$1,526,289
Harford Co. (GY15)	$555,000
Howard Co. (Canaan Valley Inst) (GY11-14)	$407,086
Howard Co. (Canaan Valley Inst.) (GY15)	$236,500
Kent Co. (GY08-14)	$3,291,092
Kent Co. (GY15)	$538,000
Montgomery Co. (Canaan Valley Inst) (GY11-14)	$430,583
Montgomery Co. (Canaan Valley Inst.) (GY15)	$431,500
Prince George's Co. (GY11-12&14)	$4,200
Prince George's Co. (GY15)	$168,000
Queen Anne's Co. (GY11-14)	$3,914,773

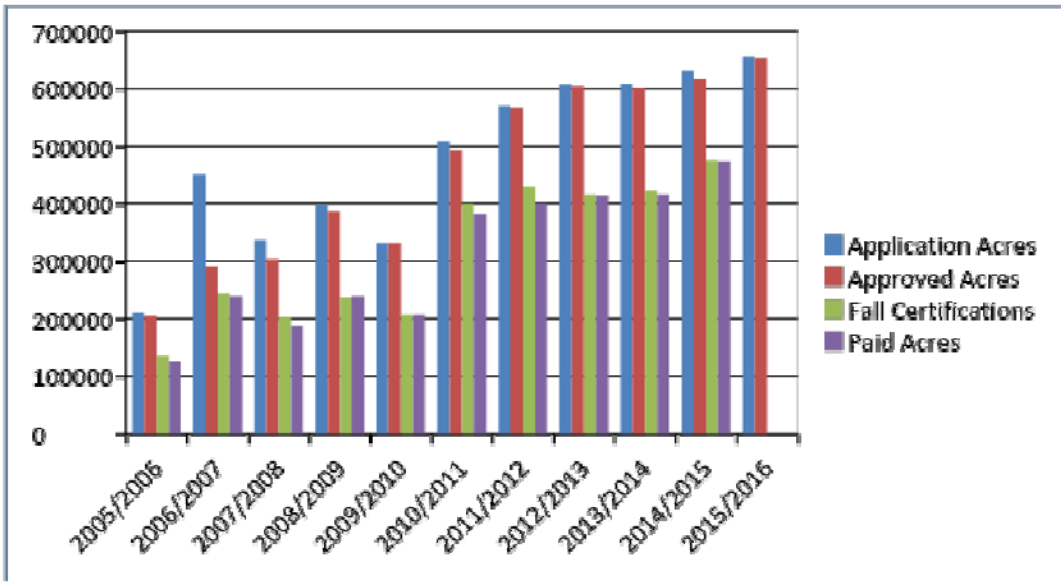
Queen Anne's Co. (GY15)	$1,105,000
Somerset Co. (GY11-14)	$1,413,777
Somerset Co. (GY15)	$303,000
St. Mary's Co. (GY11-14)	$4,765,913
St. Mary's Co. (GY15)	$1,553,000
Talbot Co. (GY08-14)	$3,647,090
Talbot Co. (GY15)	$955,500
Washington Co (Canaan Valley Inst) (GY09-14)	$2,121,440
Washington Co (Canaan Valley Inst.) (GY15)	$307,000
Wicomico Co. (GY08-14)	$4,216,017
Wicomico Co. (GY15)	$670,000
Worcester Co. (GY08-14)	$1,916,730
Worcester Co. (GY15)	$402,000
SEPTIC County Subtotal	$76,614,266
INDIVIDUAL SEPTIC Grants Subtotal (thru FY11)	$17,725,267
HB-12 SEPTIC Grants Subtotal	$1,035,000
TOTAL BRF SEPTIC GRANT AWARDS	**$95,374,532**

Septic Fund (MDA 40% for Cover Crops)

Sources:		Uses:	
Cash Deposits*	$75,937,958	Grant Awards	$69,116,362
		Admin. Expense	$ 1,999,490
		Total	$71,115,852

*Cumulative revenue and expenditures as of 6/30/2015

Historically there is attrition between acres enrolled and actual payments for cover crops planted under the Maryland Agricultural Water Quality Cost Share 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.



ENR Funding Status:

Consistent with the BRF Advisory Committee recommendation from prior years, the State legislature during the 2012 Session, doubled the BRF fee from $2.50 per month ($30/year) per household or Equivalent Dwelling Unit (EDU) to $5.00 ($60/year) for most Marylanders. The fee remained unchanged for users that do not discharge sewage into the Chesapeake Bay or the Atlantic Bays watershed, which covers a portion of Garrett County, Cecil County and Ocean City area. The new increased fee will remain in place until FY 2030 and revert back to the lower level of $2.50 per month starting in FY 2031. The increased fee generated approximately $110 million in gross revenue. By FY17, MDE will that balance along with $280 million in future revenue bond issuance to provide up to 100% financing for eligible ENR upgrades in the 67 major Wastewater Treatment Plants (WWTPs) and at least five additional minor WWTPs. MDE's current estimate for ENR upgrade of the 67 majors and five minors is $1.23 billion. This does not include non-ENR costs that the WWTP owners pay using local funds. Attachment 1 provides a cash flow and projects completion of ENR upgrades to the 67 major WWTPs by FY 2018. MDE is currently working with

11 Minor WWTPs that are considering ENR upgrades and has budgeted $21 million of BRF funds in its FY 2016 budget.

Starting FY 2018, after payment of bond debt service (estimated to be close to $50 million), the WWTP fund is projected to have $50M+ per year in fee revenue available for capital projects. Based on the statutory changes during the 2015 legislative session (Chapter 153 & Chapter 124), the prioritization of project funds will be as follows:

1. Funding an upgrade of a wastewater facility to enhance nutrient removal at wastewater facilities with a design capacity of 500,000 gallons or more per day;
2. Funding for the most cost-effective enhanced nutrient removal upgrades at wastewater facilities with a design capacity of less than 500,000 gallons per day;
3. Funding any of the following types of projects selected based on water quality and public health benefits, as determined by the Department of the Environment:
    (i) Combined sewer overflow abatement, rehabilitation of existing sewers, and upgrading conveyance systems, including pumping stations (starting FY 2016);
    (ii) Nitrogen reduction from onsite sewage disposal systems/septic systems;
    (iii) Stormwater projects being undertaken by local governments who have implemented a system of charges;
    (iv) Stormwater alternative compliance plan, undertaken by an organization exempt from taxation under IRS regulations, if required by a local government because the organization has substantial financial hardship as a result of a local government stormwater remediation fee.

Wastewater Treatment Plant Upgrades With Enhanced Nutrient Removal (ENR)

Status of Upgrades:

The Maryland Department of the Environment (MDE) has implemented a strategy known as Enhanced Nutrient Removal (ENR) and is providing financial assistance to upgrade wastewater treatment facilities in order to achieve ENR. The ENR Strategy and the Bay Restoration Fund set forth annual average nutrient goals of WWTP effluent quality of Total Nitrogen (TN) at 3 mg/l as "N" and Total Phosphorus (TP) at 0.3 mg/l as "P", where feasible, for all significant wastewater treatment plants with a design capacity of 0.5 million gallons per day (MGD) or greater. Other smaller wastewater treatment plants are currently being selected by the Department for upgrade on a case-by-case basis, based on the cost effectiveness of the upgrade, environmental benefits, and land use factors. Primarily, the Maryland's 67 major sewage treatment facilities are targeted for the initial upgrades.

Major WWTPs:

ENR upgrades are underway at many plants, and to date, upgrades to 41 major facilities have been completed and are successfully in operation. 20 other facilities are under construction, four are in the design stage, and two are in the planning stage.

Minor WWTPs:

ENR upgrades are also underway at some minor WWTPs in order to meet Maryland's Watershed Implementation Plan requirement to upgrade at least five minor WWTPs before FY 2018. MDE and MDP have been assisting local governments in applying for Bay Restoration Fund (BRF) grants. Currently, three minor plants are ENR operational, four are under construction and seven are in design and planning phases.

As an estimate of the total benefit of the completed projects, the following load reductions were determined based on the difference between what would be the facility's load without the upgrade versus the load with the upgrade at the ultimate design capacity. These load reductions would allow the upgraded facilities to maintain their Tributary Strategy loading caps of nitrogen and phosphorus even after reaching their design capacity with the 20-year projected growth.

The following are the major facilities that have completed the upgrade and are in operation:

#	Major Facility	Design Flow In Million Gallons Per Day (MGD)	Date Completed	Nitrogen Load Reduction At Design Flow (Lbs/year)	Phosphorus Load Reduction At Design Flow (Lbs/year)
1	Hurlock	1.65	May 2006	70,000	8,500
2	Celanese (North Branch)	2.00	Nov 2006	85,000	10,300
3	Easton	4.00	June 2007	170,000	20,700
4	Kent Narrows	3.00	Aug 2007	128,000	15,500
5	APG-Aberdeen (Federal)[1]	2.80	Mar. 2006	119,000	14,500
6	Swan Point (Expanded Minor) [1]	0.60	May 2007	25,000	3,100
8	Mattawoman[1]	20.00	Nov 2007	853,000	0
7	Chestertown	0.90	June 2008	64,000	7,800
9	Brunswick	1.40	Sept 2008	60,000	7,200
10	St. Michaels	0.66	Oct 2008	28,000	3,400
11	Indian Head	0.50	Jan 2009	21,000	2,600
12	Elkton	3.05	Dec 2009	130,000	15,800
13	Havre De Grace	2.275	May 2010	28,000	11,800
14	Poolesville	0.75	Jul 2010	9,000	3,900
15	Federalsburg	0.75	Aug 2010	32,000	3,900

16	Crisfield	1.00	Aug 2010	43,000	5,200
17	George's Creek	0.60	Nov 2010	25,000	3,100
18	Mount Airy	1.20	Nov 2010	15,000	6,200
19	Perryville	1.65	Dec 2010	70,000	8,500
20	Hagerstown	8.00	Dec 2010	97,000	41,400
21	Cumberland	15.0	Feb 2011	183,000	77,700
22	Bowie	3.30	Feb 2011	40,000	7,000
23	Delmar	0.85	Sept 2011	36,000	4,400
24	Pocomoke City	1.47	Oct 2011	18,000	7,600
25	Denton	0.80	May 2012	10,000	4,100
26	Little Patuxent	25.00	Sept 2012	304,000	53,200
27	Damascus	1.50	Feb 2013	18,000	7,700
28	Thurmont	1.00	April 2013	12,000	5,100
29	Piscataway	30.00	May 2013	365,000	0
30	Cetnreville[1]	0.50	July 2013	6,000	2,500
31	Parkway	7.50	July 2013	91,000	15,900
32	Dorsey Run[1]	2.00	Oct 2013	24,000	4,200
33	Joppatowne	0.95	Nov 2013	11,000	4,900
34	Cambridge	8.1	Dec 2013	98,000	41,900
35	Snow Hill	0.5	June 2014	21,000	2,500
36	La Plata	1.5	Dec 2014	18,000	7,700
37	Sod Run	20.0	Feb 2015	243,000	103,500
38	Aberdeen	4.0	March 2015	48,000	20,700
39	Patuxent	7.5	March 2015	91,000	15,900
40	Maryland City	2.5	March 2015	30,000	5,300
41	Broadneck	6.0	May 2015	73,000	31,000

The following are the minor facilities that have completed the upgrade and are in operation:

No.	Minor Facility	Design Flow In Million Gallons Per Day (MGD)	Date Completed	Nitrogen Load Reduction At Design Flow (Lbs/year)	Phosphorus Load Reduction At Design Flow (Lbs/year)
1	Boonsboro[1]	0.53	Oct 2009	22,000	2,700
2	Worton[1]	0.25	Dec 2012	10,000	1,200
3	Eastern Correctional Facility[1]	0.50	May 2015	21,000	2,500

[1] No BRF funding was provided

Chesapeake Bay TMDL Implications:

In early November, 2009, the US Environmental Protection Agency (EPA) officially transmitted the Watershed Implementation Plan (WIP) guidance. EPA, in coordination with the Bay watershed jurisdictions of Maryland, Virginia, Pennsylvania, Delaware, West Virginia, New York, and the District of Columbia (DC), developed and, on December 29, 2010, established the Total Maximum Daily Loading (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 41.04 million pounds of nitrogen per year and 3.04 million pounds of phosphorus per year by 2025.

To meet the established Chesapeake Bay TMDL, Maryland developed its Watershed Implementation Plan (dated October 26, 2012). The Plan provides detailed proposed strategies that could help Maryland meet or exceed our 2017 target (60% of the needed total implementation). Significant local input is part of the plan, thereby providing additional detail at the local level and increased reasonable assurance of successful implementation.

Annual Operation and Maintenance Grants for the Upgraded Facilities:

Starting in FY2010, the BRF legislation allows up to 10 percent of the annual fee generated from users of wastewater treatment facilities to be earmarked for grants for operation and maintenance (O&M) costs of enhanced nutrient removal technology. To ensure that each upgraded facility receives a reasonable and fair amount, MDE, in consultation with the Advisory Committee, is allocating the grants at the following rates:

- Minimum annual allocation per facility (for design capacity $\leq$ 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 $\geq$ 10 MGD) = $300,000

On July 16, 2015, the Maryland Board of Public Works approved $3,182,750 (under FY2016 authorization) for facilities that achieved ENR level of treatment during calendar year 2014.

MDE is requesting authorization for $5 million in FY 2017. The upgraded facilities listed above that achieved ENR level of treatment in calendar year 2015 will be receiving O&M grants based on above rates.

Update on Department of Defence (DoD) Facilities

On July 19, 2006, the State of Maryland and the Department of Defense (DoD) signed a Memorandum of Understanding (MOU) to resolve a dispute regarding the applicability of the Bay Restoration Fee to DoD. The State's legal position is that the federal government is not exempt from paying the Bay Restoration Fund (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. The MDE has agreed to accept DoD's proposal to undertake nutrient removal upgrades at certain DoD-owned wastewater treatment plants at its own expense in lieu of paying the BRF fee. No other Federal agency is exempt from paying the BRF fee under this MOU.

MDE continues to work with DoD to upgrade the targeted DoD 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	The plant was designed and upgraded on 3/14/2006 to achieve seasonal ENR. However, through operational improvements the plant has been capable of meeting the ENR limits on annual basis.
Aberdeen Proving Ground – Edgewood	Under Construction	Construction started in March 2014
Fort Detrick	Operation	Construction was completed in June 2012. ENR upgrade is fully operational.
Fort Meade	Under Construction	American Water Group has assumed ownership of the plant. ENR upgrade is underway using the design-build project delivery process.
Naval Station – Indian Head	Operation	Construction was completed on 9/21/2011. ENR upgrade is fully operational.
Naval Support Activity – Annapolis	Design Complete with No Construction	MDE approved the design for Phase I of the project (Denitrification Filter) on 9/9/2013. The project did not proceed to construction and is on hold due to federal budgetary issues.

Chapter 257 (House Bill 893) of 2007 Implementation

Chapter 257 of the Acts of 2007 (House Bill 893) 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 legislation, MDP and MDE have advised the Bay Restoration Fund Advisory Committee regarding the best available information and the analysis of that data to address this mandate.

Available Capacity:

This report addresses the following Bay Restoration Fund financed facilities that were upgraded to ENR with Bay Restoration Fund and were completed prior to January 1, 2015:

	Design Capacity (MGD)		Flow in CY 2014	
Facility	**Original**	**At Upgrade**	**(MGD)**	**% of Original Design Capacity**
North Branch, Allegany County	2.0	2.0	1.31	65%
Town of Easton, Talbot County	2.35	4.0	2.58	110%
Town of Hurlock, Dorchester County	2.0	1.65	1.12	56%
Kent Island (KNSG), Queen Anne's County	2.0	3.0	2.14	107%
City of Brunswick, Frederick County	0.7	1.4	0.58	83%
Town of Chestertown, Ken County	0.9	0.9	0.72	80%
Talbot Region II, Talbot County	0.5	0.66	0.35	70%
Town of Indian Head, Charles County	0.5	0.5	0.39	78%
Town of Elkton, Cecil County	2.7	3.05	1.91	70%
City of Havre De Grace, Harford County	1.89	3.3	1.74	92%
Town of Poolesville, Montgomery County	0.75	0.75	0.63	84%
Town of Federalsburg, Caroline County	0.75	0.75	0.30	40%
City of Crisfield, Somerset County	1.0	1.0	0.48	48%
Town of Mount Airy, Carroll County	1.2	1.2	0.80	67%
George's Creek, Allegany County	0.6	0.6	0.78	130%
Hagerstown, Washington County	8.0	8.0	5.33	67%
City of Cumberland, Allegany County	15.0	15.0	9.85	66%
City of Bowie, Prince George's County	3.3	3.3	1.82	55%

	Design Capacity (MGD)		Flow in CY 2014	
Facility	Original	At Upgrade	(MGD)	% of Original Design Capacity
Town of Perryville, Cecil County	1.65	2.0	0.81	49%
City of Pocomoke City, Worcester County	1.47	1.47	0.83	56%
Town of Delmar, Wicomico County	0.65	0.85	0.59	91%
Town of Denton, Caroline County	0.8	0.8	0.41	51%
Little Patuxent, Howard County	25.0	29.0	20.29	81%
Damascus (WSSC), Montgomery County	1.5	1.5	0.88	59%
Town of Thurmont, Frederick County	1.0	1.0	0.76	76%
Piscataway (WSSC), Prince George's County	30.0	30.0	25.70	86%
Parkway (WSSC), Prince George's County	7.5	7.5	6.57	88%
Joppatowne, Harford County	0.95	0.95	0.83	87%
City of Cambridge, Dorchester County	8.1	8.1	2.71	33%
Town of Snow Hill, Worcester County	0.5	0.5	0.26	52%
Town of La Plata, Charles County	1.5	1.5	1.22	81%

ENR upgrades may create the possibility of capacity expansion beyond the original design capacity by significantly reducing nitrogen loads. However, given the limitations of the WWTP nutrient discharge caps, only a few of the plants could actually expand. Of the 31 facilities listed above, only nine did not have sufficient capacities to support their local growth and economic development plans. Hence, they needed to increase their capacity as part of the ENR upgrade, which is more cost effective than completing the expansion separately. Expansion costs were identified for each of these projects and funded by other fund sources such as SRF or USDA loan, or local funds. State grants were not allocated for the expansion costs.

2015 BRF Analysis Findings

The MDP conducts a BRF Analysis for each calendar year as directed by House Bill 893 of 2007 *Bay Restoration Fund - Wastewater Treatment Facilities Upgrades - Reporting Requirements*. The purpose is to provide the Bay Restoration Advisory Committee (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 Priority Funding Areas (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.

As discussed above, 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 local adopted and approved comprehensive plans. Also, the imposed nutrient discharge caps following the ENR upgrades have not had any noted compromising effects to development that have been reported locally or otherwise noted in our analyses.

MDP works with every county and many municipalities to maintain and annually update our sewer service data layers to ensure as accurate representation as possible. For this report, the Department reviewed 31 ENR upgrades completed within the timeframe as specified in HB893. Table 1 summarizes all of the ENR upgrades and the upgrades completed since the last reporting period, which are indicated with an asterisk.

PFAs are designated by local governments and recognized by the State as areas in which to concentrate growth and development. BRF funding is not restricted to PFAs, but they provide a useful geographic frame of reference.

Table 1 shows that the percentages of improved parcels inside PFAs before and after ENR upgrades are very similar; within a few percentage points in every case. To see this, compare the percentage of connections located in Existing Service Areas (S-1) and the PFA before ENR funding to the percentage of Total Improved Parcels Located in S-1 and the PFA after upgrades.

The increase in connections after the ENR upgrades is also very small at this point in time. To see this, compare the last column in the table – Total Increase Improved Parcels in S-1 (after upgrades) to the Number of Improved Parcels in Existing Service Area (Before ENR Funding). This is due mainly to the amount of time between when the ENR upgrade occurred and when the treatment plant became operational .

[1]Annual nutrient load caps for major WWTPs were based on an annual average concentration of 4.0 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 were under review by MDE as of April 30, 2003 and subsequently approved by MDE.

Table 1. Connections to Wastewater Treatment Facilities Upgraded to ENR

			Connections Before --- ENR Funding					Current Number of Total Connections			
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	% Improved Parcels Located in "S1" within PFA (Column D ÷ C)	Column F: Total Improved Parcels in "S1"	Column G: Total Improved Parcels in "S1" within PFA	% Total Improved Parcels Located in "S1" within PFA (Column G ÷ F)	Total Increase Improved Parcels in "S1" (Total Number New Connections)
Western Region											
Celanese	ALLE	Nov-06	2005	1,913	1,803	1,797	99.7%	1,841	1,826	99.2%	38
George's Creek	ALLE	Nov-10	2009	2,069	1,953	1,927	98.7%	1,971	1,922	97.5%	18
Cumberland	ALLE	Feb-11	2010	17,656	16,493	16,313	98.9%	16,802	16,626	99.0%	309
Hagerstown	WASH	Dec-10	2009	21,975	18,442	17,472	94.7%	19,745	19,472	98.6%	1,303
Western Region Total				**43,613**	**38,691**	**37,509**	**97%**	**40,359**	**39,846**	**99%**	**1,668**
Washington Region											
Brunswick	FRED	Sep-08	2007	2,446	1,972	1,966	99.7%	2,276	2,261	99.3%	304
* Thurmont	FRED	Apr-13	2012	2,385	2,325	2,198	94.5%	2,343	2,216	94.6%	18
Poolesville	MONT	Jul-10	2009	1,742	1,714	1,647	96.1%	1,680	1,612	96.0%	0
* Damascus	MONT	Feb-13	2012	3,997	3,792	3,436	90.6%	3,792	3,436	90.6%	0
Bowie	PRIN	Feb-11	2010	20,712	20,543	20,358	99.1%	20,653	20,427	98.9%	110
* Parkway	PRIN	Jul-13	2012	15,470	15,386	15,377	99.9%	15,458	15,391	99.6%	72
* Piscataway	PRIN	May-13	2012	56,296	54,941	51,882	94.4%	55,389	52,069	94.0%	448
Facilities Upgraded During Reporting Period				78,148	76,444	72,893	95.4%	76,982	73,112	95.0%	538
Washington Region Total				**103,048**	**100,673**	**96,864**	**96%**	**101,591**	**97,412**	**96%**	**952**
Upper Eastern Shore Region											
Elkton	CECI	Dec-09	2008	6,000	4,973	4,451	89.5%	5,120	5,111	99.8%	147
Perryville	CECI	Dec-10	2009	1,704	1,511	1,512	100.1%	1,542	1,539	99.8%	31
Chestertown	KENT	Jun-08	2007	1,772	1,722	1,536	89.2%	1,880	1,692	90.0%	158
Kent Narrows	QUEE	Aug-07	2006	6,590	6,424	6,032	93.9%	7,113	6,748	94.9%	689
Denton	CARO	May-12	2011	1,508	1,477	1,471	99.6%	1,498	1,492	99.6%	21
Federalsburg	CARO	Aug-10	2009	881	836	825	98.7%	827	820	99.2%	0
Easton	TALB	Jun-07	2006	5,810	5,649	5,640	99.8%	6,398	6,391	99.9%	749
Talbot Region II	TALB	Oct-08	2007	2,289	2,255	2,020	89.6%	2,407	2,140	88.9%	152
Upper Eastern Shore Total				**26,554**	**24,847**	**23,487**	**95%**	**26,785**	**25,933**	**97%**	**1,947**
Lower Eastern Shore Region											
* Cambridge	DORC	Dec-13	2012	5,861	5,406	5,149	95.2%	5,419	5,158	95.2%	13
Hurlock	DORC	May-06	2005	769	763	763	100.0%	793	793	100.0%	30
Delmar	WICO	Sep-11	2010	1,107	934	834	89.3%	950	834	87.8%	16
Pocomoke	WORC	Oct-11	2010	1,893	1,614	1,596	98.9%	1,618	1,600	98.9%	4
Crisfield	SOME	Aug-10	2009	2,304	2,047	1,782	87.1%	2,092	1,817	86.9%	45
* Snow Hill	WORC	Jun-14	2013	900	878	873	99.4%	878	873	99.4%	0
Facilities Upgraded During Reporting Period				6,761	6,284	6,022	95.8%	6,297	6,031	95.8%	13
Lower Eastern Shore Total				**12,834**	**11,642**	**10,997**	**94%**	**11,750**	**11,075**	**94%**	**108**
Baltimore Region											
Mount Airy	CARR/FRED	Nov-10	2009	3,336	3,153	3,153	100.0%	3,333	3,313	99.4%	180
* Joppatowne/Sod Run	HARF	Nov-13	2012	51,174	48,373	48,110	99.5%	48,476	48,213	99.5%	103
Havre De Grace	HARF	May-10	2009	5,098	4,900	4,824	98.4%	5,253	5,253	100.0%	353
Little Patuxent	HOWA	Sep-12	2011	56,997	50,641	50,635	100.0%	50,830	50,814	100.0%	189
Facilities Upgraded During Reporting Period				51,174	48,373	48,110	99%	48,476	48,213	99.5%	103
Baltimore Region Total				**116,605**	**107,067**	**106,722**	**100%**	**107,892**	**107,593**	**100%**	**825**
Southern Maryland Region											
Indian Head	CHAR	Jan-09	2008	1,409	1,153	1,153	100.0%	1,401	1,401	100.0%	248
* La Plata	CHAR	Dec-14	2013	3,164	3,172	3,072	96.8%	3,222	3,117	96.7%	50
Facilities Upgraded During Reporting Period				3,164	3,172	3,072	96.8%	3,222	3,117	96.7%	50
Southern Maryland Total				**4,573**	**4,325**	**4,225**	**98%**	**4,623**	**4,518**	**98%**	**298**
Statewide											
Facilities Upgraded During Reporting Period				139,247	134,273	130,097	97%	134,977	130,473	96.7%	704
Statewide Totals				**307,227**	**287,245**	**279,804**	**97%**	**293,000**	**286,377**	**98%**	**5,690**

Notes:

* = Facilities upgraded to ENR during the reporting period.

In a few instances, the number of improved parcels in Column F is less than in Column C. The difference is due to boundary discrepancies between old and newer service area GIS data.

Onsite Sewage Disposal System (OSDS) Upgrade Program

Program Implementation

Starting July 1, 2010, the Bay Restoration Fund Septic Best Available Technology (BAT) upgrade program was implemented locally at the county level and MDE no longer took direct applications from homeowners.

The Bay Restoration Septic Fund statute (Annotated Code of Maryland 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 (Senate Bill 554) of the Acts of 2009, requires new and replacement septic systems serving property in the Critical Areas to include the best available technology for removing nitrogen (BAT). In addition Code of Maryland Regulation 26.04.02.07, effective January 1, 2013, requires all Onsite Sewage Disposal Systems (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 Regulation also requires that both individuals that install BAT and individuals that perform operation and maintenance complete a course of study approved by MDE. As of September of 2013 approximately 1,163 installers and 206 service providers have been certified by MDE.

Consistent with the above, MDE is requiring all new grant recipients to prioritize application 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 for FY 2016 is available on the web site at:

http://www.mde.state.md.us/programs/Water/QualityFinancing/Documents/FY%202016%20Final%20Program%20Guidance.pdf

Summary of BAT Installations State Fiscal Years 2008 through 2015								
	SFY 2008	**SFY 2009**	**SFY 2010**	**SFY 2011**	**SFY 2012**	**SFY 2013**	**SFY 2014**	**SFY 2015**
Total BAT Upgrades	292	901	1115	651	652	870	892	1249
Critical Area BAT Upgrades	189	418	551	569	540	583	743	429
Allegany Co.				1	2	2	7	12
Anne Arundel Co.	44	72	0	134	135	186	239	310
Baltimore Co.				9	16	18	36	105
Calvert Co.	35	49	55	79	63	91	109	179
Caroline Co.	10	17	7	9	24	19	58	34
Carroll Co.				3	2	3	53	89
Cecil Co.		1	26	23	34	60	127	108
Charles Co.	19	16	51	1	5	5	24	35
Dorchester Co.		11	5	68	69	34	86	51
Frederick Co.	14	17	0	11	16	37	67	126
Garrett Co.				7	5	8	11	15
Harford Co.			45	1	7	4	69	74
Howard Co.				3	7	7	39	134
Kent Co.	12	28	2	21	42	46	81	55
Montgomery Co.				4	8	9	33	69
Prince George's Co.				0	0	0	12	13
Queen Anne's Co.				71	59	73	125	107
St. Mary's Co.				58	49	111	171	103
Somerset Co.				23	28	38	31	37
Talbot Co.	49	52	10	31	21	37	90	43
Washington Co.		16	25	20	22	39	44	53
Wicomico Co.	48	19	77	51	30	32	84	72
Worcester Co.	8	34	61	23	8	11	39	36

In addition to grant disbursements information, Attachment 2 shows BRF funded BAT installations and sewer connections for SFY 2014.

MDE Approved BAT for Nitrogen Removal: MDE has currently approved 15 technologies for BAT nitrogen removal of which seven are field verified BAT technologies. Consistent with HB 347 (2011 Session), effective June 1, 2011, and every 2-years thereafter, MDE is required to provide on its website an Evaluation and Ranking of all best available nitrogen removal technologies for on-site sewage disposal systems. The evaluation will include for each BAT technology:

Total Nitrogen Reduction
Total cost including Operation, Maintenance and Electricity

Cost per pound of Nitrogen Reduction

The details are available on the MDE web site at:
http://www.mde.state.md.us/programs/Water/BayRestorationFund/OnsiteDisposalSystems/Pages/Water/cbwrf/osds/brf_bat.aspx

The following are the currently seven field-verified BAT technologies in Maryland:

Model	Manufacturer	Effluent TN Concentration	% TN Removal	Cost of Purchase, Installation and 5 Years Operation & Maintenance	Operation and Maintenance Cost per year*	Electricity cost and Usage**
Hoot® BNR	Hoot Aerobic Systems, Inc. www.hootsystems.com	21 mg/l	64%	$11,954	$150	$84/year or 766 kWh/year
Advantex® - AX20	Orenco Systems®, Inc. www.orenco.com	17 mg/l	71%	$12,300	$200	$37/year or 336 kWh/year
Advantex® - RT	Orenco Systems®, Inc. www.orenco.com	14 mg/l	76%	$12,300	$200	$37/year or 336 kWh/year
Singulair TNT	Norweco, Inc. www.norweco.com	27 mg/l	55%	$11,079	$300	$108/year or 980 kWh/year
Singulair Green	Norweco, Inc. www.norweco.com	27 mg/l	55%	$11,079	$300	$108/year or 980 kWh/year
SeptiTech®	SeptiTech, Inc. www.septitech.com	20 mg/l	67%	$13,056	$300	$213/year or 1935 kWh/year
RetroFast	Bio-Microbics, Inc. www.biomicrobics.com	25 mg/l	57%	$9,405	$300	$284/year or 2584 kWh/year

* Does not include cost of pumping septage.
** Based on a rate of $0.11 per kWh and unit size for 3 to 4 bedrooms.

The following BAT technologies have been approved to enter a field verification period:

1. Microfast
2. AquaKlear
3. Bionest SOLO OT-60
4. Hoot ANR

5. Nitrex
6. EcoPod
7. HydoAction
8. Clear Rex Bubbler

Chesapeake Bay States - Data Sharing

On April 16, 2015, the states of Delaware, Maryland, Pennsylvania, Virginia, and West Virginia signed a Memorandum of Cooperation to share data on the performance of advanced onsite pretreatment units for nitrogen reduction in order to simplify and expedite the approval processes for these technologies in each individual state, as well as reduce costs to residents and manufacturers. Prior to this MOC, all states nationwide approved systems on an individual basis and many did not take into account data collected by other state programs. To learn more about data sharing, visit the MDE website at:
http://www.mde.state.md.us/programs/Water/BayRestorationFund/OnsiteDisposalSystems/Documents/Onsite%20Systems/Chesapeake%20MOC%20Signed.pdf

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 on-site sewage disposal systems (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 (BAT TRC) as having a total nitrogen (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 BRF webpage for reference.

BAT CLASS I

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

BAT CLASS II

BAT Class II systems are stand alone 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

BAT Class III systems are pre-treatment 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: 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 within 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 total nitrogen percent to 48 mg/L, the technology will be denied entry into the BAT program.

BAT CLASS IV

BAT Class IV systems are on-site sewage disposal systems that are installed above, at, or just below (12-inch maximum depth) grade and are thus capable of reducing effluent TN by 30 percent. 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 the Department 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 Code of Maryland Regulation 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 the Department. The MDE Design and Construction Manual for Sand Mound Systems and the Construction Manual for At Grade systems is to be utilized for 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 on-site sewage disposal system 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 on-site sewage disposal system that utilizes a raised bed of gravel or stone over the natural soil surface with a pressure distribution system constructed to equally distribute the pretreated 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 on-site sewage disposal systems. 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

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 FY2015, MDA continued to implement a targeting strategy to maximize nutrient reduction effectiveness of cover crops. This year MDA eliminated aerial seeding for non-irrigated, double-crop soybeans due to lesser than desired crop performance. Current year's program includes incentives to:

1. plant cover crops as early as possible in the fall
2. plant after crops that need higher fertilizer rates, such as corn, vegetables and tobacco
3. use cover crops on fields that were fertilized using manure
4. use planting methods that maximize seed to soil contact to assure germination and early growth
5. use small grains such as rye to maximize nutrient uptake
6. target watersheds with greatest nutrient loading potential

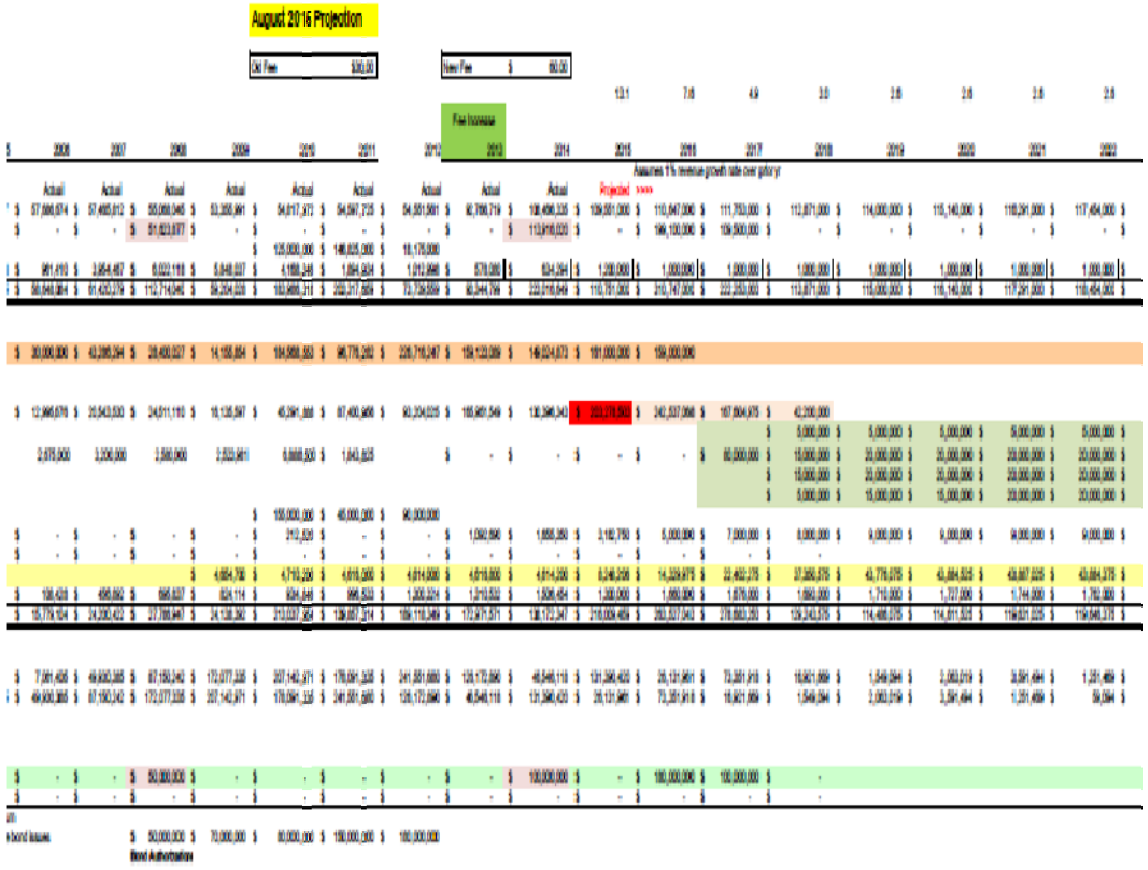
MDA has applied these criteria the last six fiscal years by structuring the incentive payments to reward farmers who adhered to one or more of these priorities. They are based both on four separate surveys of farm operators' opinions to streamline and adapt the program to be responsive, and recommendations from the Baystat Scientific Panel to maximize water quality benefits.

Status of Implementation of BRF for Cover Crop Activities:

The Maryland Department of Agriculture cumulative portion of BRF is $75,937,958 as of June 30, 2015. In FY 2015, $11 million from the BRF was supplemented by an additional $13.1 million from the 2010 Chesapeake Bay Trust Fund to fund the Cover Crops Program.

ATTACHMENT 1 – BRF WWTP FUND CASH FLOW

Judged 2013 Projection
PROJECTED EQUITY AWARDS ($ MILLIONS)


August 2016 Projection
Assumes 1% revenue growth rate over prior yr
Projected

ATTACHMENT 2 – Details of BFR Septic Grant Disbursements (FY 2015)

Water Quality Financing Administration
Detail of BRF County Septic Grant Disbursements
GY 2015

	Septic System/ BAT $	# BAT units	Drainfield $	# of Drainfields	Holding Tanks $	# Holding Tanks	PFA Sewer Connection $	(EDU)# Sewer Conn. PFA	Outside PFA Sewer Conn. $	(EDU)# Sewer Conn. Outside PFA	Admin/ Mileage $	TOTAL GRANT DISB.
Allegany Co/CVI	57,124.00	4	38,910.00	3				-	0.00	-	4,948.00	100,982.00
Anne Arundel Co	2,731,218.50	241	1,575.00	1			118,800.00	15	0.00	-	295,528.00	3,147,121.50
Baltimore Co	263,401.00	22	9,980.00	2			333,280.40	33	0.00		62,493.75	669,055.15
Calvert Co	1,088,440.00	86			82,728.00	7			0.00		168,271.00	1,339,439.00
Caroline Co	357,365.50	41							0.00	-	66,955.68	424,319.18
Carroll Co	343,786.00	29	27,655.00	5	13,148.00	1	58,280.00	5	0.00	-	31,143.15	473,992.15
Cecil Co	688,023.00	64			47,364.00	8	170,327.50	25	0.00	-	96,587.66	1,002,302.16
Charles Co	464,625.00	44	10,333.00	1					0.00	-	62,480.00	537,438.00
Dorchester Co	496,817.00	49	87,859.00	11					0.00	-	60,948.00	645,624.00
Frederick Co/ CVI	442,620.50	34							0.00	-	41,379.50	484,000.00
Garrett Co	129,030.00	12	12,800.00	5					0.00	-	12,736.00	154,566.00
Harford Co	394,800.00	32					61,325.00	5	0.00		31,712.58	487,846.58
Howard Co/CVI	58,001.00	5	9,165.00	1			146,276.00	10	0.00		18,555.00	232,087.00
Kent Co	466,954.00	40	38,160.00	2					0.00	-	32,886.00	538,000.00
Montgomery Co/CVI	338,228.00	32	29,191.00	2					0.00	-	39,584.00	407,003.00
Prince Georges Co	55,941.50	5							0.00	-	9,195.00	65,136.50
Queen Annes Co	969,022.14	95							0.00	-	128,725.00	1,097,747.14
Somerset Co	272,550.00	25							0.00	-	26,191.00	298,741.00
St Mary's Co	1,367,195.00	119			4,965.00	1			0.00	-	180,840.00	1,553,000.00
Talbot Co	579,100.50	65	6,199.00	1			209,442.00	18	0.00	-	88,870.00	943,677.50
Washington Co/CVI	267,620.00	20	10,490.00	1					0.00		24,740.00	302,850.00
Wicomico Co	538,753.00	61	37,055.00	5					0.00	-	60,048.68	635,856.68
Worcester Co							190,000.00	19	0.00	-	15,755.00	205,755.00
TOTALS	$12,365,778.64	1125	$319,302.00	40	$148,205.00	17	$1,347,680.90	128	$0.00	0	$1,560,572.95	$15,741,539.49

NOTE:Talbot Co: Royal Oak/Thometon Road Sewer Line Extension pd with FY13 grant for 53 qualifying homes; Individual House County Connection Fees pd with FY 14 & 15 grants(and future grants)
Thometon/Royal Oak Sewer County Connection fees: 22 Connections paid for in FY14, 18 paid for in FY15, total needs 40 connections (FY 14 & 15), 13 Connections Remaining)