

Draft



Bay Restoration Fund Advisory Committee

Gregory B. Murray, Chairman

Annual Status Report January 2014 (9th Report)

Report to:

Governor Martin O'Malley

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 Environmental Matters Committee

The House Appropriations Committee

Bay Restoration Fund Advisory Committee Members

Committee Members	Affiliation
Gregory B. Murray	Washington County
Robert M. Summers, Ph.D.	Maryland Department of the Environment
Delegate Barbara Frush	Maryland House of Delegates
James L. Hearn	Washington Suburban Sanitary Commission
Beth Lynn McGee, Ph.D.	Chesapeake Bay Foundation
Beverly Stinson, PhD	AECOM
William P. Ball, Ph.D.	Johns Hopkins University
Don William Bradley	Town of Hurlock
Joseph P. Gill	Maryland Department of Natural Resources
Richard E. Hall	Maryland Department of Planning
Allyson Black	Maryland Chamber of Commerce
T. Eloise Foster	Maryland Department of Budget & Management
Earl F. Hance	Maryland Department of Agriculture
Jennifer Bevan-Dangel	1000 Friends of Maryland

PURPOSE OF THIS REPORT

Section 1605.2 of Chapter 9 of the Environment Article requires that beginning January 2006, and every year thereafter, the Bay Restoration Fund (BRF) Advisory Committee must 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 Martin O'Malley and the Maryland Legislature, its ninth 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 the planting of cover crops to reduce nitrogen and phosphorus pollution in Chesapeake Bay.

Accomplishments

- As of July 30, 2013, the Comptroller of Maryland has deposited approximately \$509 million in the Maryland Department of the Environment (MDE) Wastewater Treatment Plant fund, \$66 million in the Maryland Department of Environment Septic Systems Upgrade fund, and \$53 million in the Maryland Department of Agriculture (MDA) Cover Crop Program fund, for a total of \$628 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 31 major facilities have been completed and are in operation. Upgrades to 20 other facilities are under construction, 11 are in design, and 4 are in planning. MDE is continuing to work to bring the one remaining facility (Hampstead, Carroll County) into the program by urging the facility to proceed with the ENR upgrade and/or by adding nutrient loading limits and compliance schedules in the discharge permit.
- The 2012 BRF fee increase has allowed MDE to start 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 Phase II Watershed Implementation Plan (WIP) for the Chesapeake Bay Total Maximum Daily Loading (TMDL). To date, two minor facilities completed the ENR upgrade, two are under construction, three are in design, and three are in planning.
- As of July 30, 2013 over 4,500 Best Available Technology (BAT) systems have been installed to reduce the nitrogen discharged from Onsite Sewage Disposal Systems (OSDS).
- Code of Maryland Regulation effective January 1, 2013 requires all OSDS installed in the Chesapeake Bay and Coastal Bay watersheds include BAT. In addition, 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 Maryland Department of Agriculture (MDA) dedicates its portion of BRF funds for the implementation of the statewide Cover Crop Program. In FY2013, farmers planted 415,558 acres attaining an estimated nutrient reduction of 2.5 million pounds of nitrogen and 83,000 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 FY2013 represents 117% of Maryland's 2013 Milestone goal.
- In FY2014 Maryland farmers applied to plant 608,355 acres of cover crops. Although farmers typically enroll more acreage than they complete planting, farmers are projected to exceed the 2015 milestone goal of 386,000 acres.
- In 2014 MDA's funding increases proportionally with new BRF rates established by law. MDA is projected to receive \$10.6 million in BRF support in FY14. It is projected that BRF will provide financial assistance for approximately 216,000 acres of cover crops.
- Over the past four years, funding gaps for the Cover Crop Program have been addressed with support 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 tie up nitrogen that remains mobile in the soil after crop harvest. They are recognized as one of the State's most cost effective BMP 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 House Bill 893, which was passed in the 2006 legislative session and requires MDE and MDP, in consultation with local governments to report on the impact that an ENR upgraded wastewater treatment plant has on growth in the jurisdiction it serves. As part of this report, MDE and MDP evaluated the impact during 2012 as required by the legislation.

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 II Watershed Implementation Plan (WIP) calls for specific strategies on how to achieve the interim target reduction of 60% of the Final Target by 2017, and ultimately achieving the Final 2025 Target. Therefore, the Committee will need to consider how best to prioritize/allocate future funding to the different sectors:

- Point Source, which includes major and minor municipal treatment plants. All major plants and 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.

- 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 after 2017 for stormwater BMPs to support local teams 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.

Conclusions

- MDE will continue to use the BayStat process to improve its benchmarks and tracking of implementation efforts to ensure that projects remain on schedule and both the interim 2017 and final 2025 targets are achieved.
- MDE, in consultation with the BRF Advisory Committee will begin working on the development of priority system to prioritize/allocate future BRF funding to the different sectors by FY 2018. Planning and design for a typical ENR upgrade is three years. Therefore, to start construction of a minor facility by FY 2018, we need to finalize the selection process by FY 2014, and start the planning for the selected facilities by FY 2015.

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 has 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. A copy of the agreement was provided by MDE to CoM, and those BRF accounts were subsequently placed on inactive status. The CoM has begun to audit billing authorities who are not collecting the BRF from federal agencies and will make assessments as appropriate against those billing authorities for those uncollected fees.

Additionally, the CoM is working with MDE to obtain historical flow data from billing authorities and users, which will be compared to returns filed by billing authorities and users to ensure accurate BRF returns have been filed and paid.

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 (ECP) 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 \$150 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 divisions: (1) the Bay Restoration Project Management Division; and (2) the Water and Wastewater Project Management Division.

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 permit 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 to support 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 have been made to the program with a goal to maximizing program participation and water quality benefits. Eligibility requirements are consistent with findings from a scientific panel under the auspices of BayStat. 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 FY2013 was approximately \$20.8 million, with \$10.6 million from BRF, and \$10.2 million from Chesapeake Bay 2010 Trust Fund.

In FY14, over 607,000 acres were enrolled preparing Maryland farmers to again exceed the 386,000 acre Chesapeake Bay 2015 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 impacts to crop productivity influenced farmer decisions to enroll additional acres since 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 tying up excess nitrogen from the soil following the fall harvest of crops. They minimize nitrogen loss caused by leaching into nearby streams and aquifers, prevent soil erosion and improve soil quality.

Maryland Department of Planning:

The Maryland Department of Planning is a statutory member of Bay Restoration Fund Advisory Committee. The Department's general mandate is to advise State agencies, local governments, the General Assembly, and others on planning matters. More specifically, the Department is focused on implementation of Smart Growth policies and programs at all levels of government. Generally, the BRF program supports State Planning and Smart Growth policies to the degree that WWTP capacity is allocated to serve existing and new development in locally identified and State certified Priority Funding Areas (PFAs).

Specific functions that MDP carries out that relate directly or indirectly to the BRF programs are summarized below. HB 893 enacted by the 2007 legislative session, added an additional BRF reporting responsibility which is discussed in another section.

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. Review and Comment on County Water and Sewerage Plans and Amendments

MDP is directed by law to advise MDE regarding the consistency of County Water and Sewerage Plans and amendments with "local master plan and other appropriate matters" (Environment Article

§ 9-507 (b)(2)). This includes review for consistency with State Smart Growth policy. MDP carries out this review and provides advisory comments to MDE for consideration before MDE makes an approval decision on Water and Sewerage Plans or amendments.

The law requires that County Water and Sewerage Plans and amendments be consistent with the local master or comprehensive plans. Therefore, if a plan or amendment is not consistent with a comprehensive plan, it is subject to disapproval by MDE. Since facility construction, discharge, and other permits must also be consistent with the County Water and Sewerage Plans, the legal chain, from comprehensive plans to Water and Sewerage Plans to permits, helps to assure that all BRF projects are consistent with local comprehensive plans before funding is approved and construction can begin.

3. Priority Funding Areas (PFA)

One specific feature of State Smart Growth policy is the designation of Priority Funding Areas. These 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 boundaries do not meet the legal requirements in the law, MDP would overlay a “comment area” delineation to so indicate. 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.

The BRF was enacted after PFA Law and is not included in the list of State financial programs subject to it. The numbers of connections and percentages are very consistent from year to year for each upgraded ENR WWTP. It is noted that every WWTP had capacity prior to the ENR upgrades, allowing for some use of public sewer outside of PFAs. Even though PFA law is not applicable to this capacity, in most cases it has been used for service connections within the PFA and/or for the remediation of failing septic systems for public health and safety reasons. MDP will continue to monitor this activity very closely, especially in areas where major failing septic systems are increasing in numbers as on Kent Island and in Talbot County Region 2. If BRF septic funds are provided for the connections, local governments are guided and advised by the limits of the PFA when conversion of existing septic systems to public services occurs using this fund source.

HB 893, which is discussed further in another section, analyzes the current growth impacts of BRF activities within the service areas of the ENR upgraded wastewater treatment plants completed prior to January 1, 2010.

4. Local Comprehensive Plan Review and Comment

Local Comprehensive Plans must be prepared by every county and municipality in Maryland, pursuant to Article 66B of the Annotated Code. MDP provides comments on all 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. In that, these plans are not subject to State approval, comments provided are advisory only. However, in most cases local governing bodies provide full consideration to the State advisory comments and work closely with the State in resolving any outstanding issue, especially when State funds may later be needed to implement some of the local plans.

MDP works closely with, and provides technical assistance to, local governments in the processes leading to adoption of local comprehensive plans. MDP advises them on facilities and resource planning matters to best support all State Agency Planning and Smart Growth policies and practices.

Monthly BayStat Review of the BRF:

All BRF-funded ENR upgrades are closely monitored through planning, design, construction, and implementation by MDE, and are overseen monthly by the Governor through BayStat, a monthly meeting of cabinet-level state officials where updated Bay-related data are reviewed and discussed. MDE submits a monthly report to BayStat showing the status of each ENR upgrade; a recent BayStat ENR monthly report is available via this link:

http://www.mde.state.md.us/programs/Water/BayRestorationFund/Pages/Water/cbwrf/wwtp_enr_upgrade.aspx

These monthly reports show expected completion dates for each step of the process at each location, and highlight delays and other key changes in status. BayStat meetings devote particular attention to those upgrades due to become effective during the current two-year Bay milestone period.

In addition, the Wastewater Permits Program submits a monthly BayStat report that includes the number of BAT installations by County and Critical Area as well as monthly revenue and expenditures.

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 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, 2013, is as follows:

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

<u>Sources:</u>		<u>Uses:</u>	
Cash Deposits	\$509,862,402*	Capital Grant Awards	\$804,042,862**
Cash Interest Earnings	\$ 24,367,718	Admin. Expense Allowance	\$ 7,647,936
Bond Proceeds	<u>\$ 51,750,350</u>	Bond DS Payments	<u>\$ 23,211,409</u>
Total	\$585,980,470	Total	\$834,902,207

** As part of the Budget Reconciliation and Financing Acts, \$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 \$90M, \$140M, \$140M, \$80M, \$30M in FY 2014 through FY 2018 respectively.*

The grants under the Wastewater Fund are 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 were 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.

APPLICANT/ENR WWTP**GRANT AWARD**

Aberdeen, Town of	\$ 14,982,000
Allegany County	12,208,518
Anne Arundel County	124,387,000
Baltimore City	173,922,000
Bowie, City of	8,668,492
Brunswick, City of	8,263,000
Cambridge, City of	8,944,000
Chesapeake Beach	7,080,000
Chestertown, Town of	1,490,854
Crisfield, City of	4,230,766
Cumberland, City of	25,654,866
Delmar, Town of	2,369,464
Denton, Town of	4,405,615
Easton, Town of	8,660,000
Elkton, Town of	7,403,154
Emmitsburg, Town of	5,581,000
Federalsburg, Town of	2,900,000
Frederick , City of	1,458,000
Frederick County	31,000,000
Hagerstown, City of	10,191,836
Harford County	41,315,000
Havre de Grace, City of	10,474,820
Howard County	35,493,172
Hurlock, Town of	941,148
Indian Head, Town of	5,822,098
La Plata, Town of	9,378,000
Leonardtown, Town of	510,000
MD Environmental Services	713,000
Mount Airy, Town of	3,354,144
Perryville, Town of	3,888,168
Pocomoke, City of	3,214,878
Poolesville, Town of	223,132
Queen Anne's County	6,380,645
Salisbury, City of	2,741,877
Snow Hill, Town of	3,416,000
St. Mary's County	1,600,000
Talbot County	1,978,699
Taneytown, City of	580,000
Thurmont, Town of	6,889,000
Washington County	350,000
Westminister, City of	1,020,000
WSSC	178,942,000
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ENR SUBTOTAL	\$ 783,026,346
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SEWER PROJECTS

Allegany County	\$	499,748
Baltimore City		4,875,000
Cumberland, City of		1,319,889
Denton, Town of		100,000
Emmitsburg, Town of		600,000
Federalsburg, Town of		600,000
Frostburg, City of		2,900,000
Fruitland, City of		800,000
Hagerstown, City of		800,000
Havre de Grace, City of		166,500
Mountain Lake Park, Town of		731,884
Port Deposit, Town of		178,199
Secretary, Town of		322,068
St. Mary's County		669,273
Talbot County		1,450,000
Taneytown, City of		200,000
Thurmont, Town of		947,000
Washington County		200,000
Westernport, Town of		1,968,519
Williamsport, Town of		383,226
SEWER SUBTOTAL	\$	<u>19,711,306</u>

O&M PROJECTS

Allegany County	\$	82,800
Boonsboro, Town of		9,540
Bowie, City of		59,400
Brunswick, City of		33,600
Charles County		216,000
Chestertown, Town of		25,650
Crisfield, City of		18,000
Cumberland, City of		198,000
Easton, Town of		144,000
Elkton, Town of		54,900
Federalsburg, Town of		13,500
Hagerstown, City of		144,000
Havre DeGrace, City of		40,950
Hurlock, Town of		59,400
Indian Head, Town of		9,000
Mt. Airy, Town of		21,600
Perryville, Town of		29,700
Pocomoke City, City of		8,820
Poolesville, Town of		13,500
Queen Anne's County		108,000
Talbot County		14,850
O&M SUBTOTAL	\$	<u>1,305,210</u>

TOTAL ENR, SEWER & O&M **\$804,042,862**
Septic Fund (MDE 60% for On-Site Disposal System upgrades except 22.4% in FY 2010)

<u>Sources:</u>		<u>Uses:</u>	
Cash Deposits	\$66,562,565	Capital Grant Awards	\$80,570,152***
Cash Interest Earnings	<u>\$ 2,453,591</u>	Admin. Expense Allowance	<u>\$ 5,325,005</u>
Total	\$69,016,156	Total	\$85,895,157

*** Includes FY 2014 grant award. Payment disbursements are made as BATs are installed and expenses are incurred.

<u>APPLICANT</u>	<u>GRANT AWARD</u>
Allegany Co.	\$ 129,962
Anne Arundel Co.	9,243,545
Baltimore Co.	600,020
Calvert Co.	5,229,361
Calvert Co. Health Dept./Prince Georges Co.	4,200
Canaan Valley Institute/Frederick Co.	1,570,821
Canaan Valley Institute/Howard Co.	322,862
Canaan Valley Institute/Montgomery Co.	484,765
Canaan Valley Institute/Washington Co.	1,743,442
Caroline Co.	1,444,312
Carroll Co.	188,583
Cecil Co.	2,026,795
Charles Co.	1,785,407
Dorchester Co.	3,032,956
Garrett Co.	288,387
Harford Co	1,012,677
Kent Co	2,442,598
Prince George's Co.	164,000
Queen Anne's Co.	2,602,199
Somerset Co.	495,000
St. Mary's Co.	3,090,129
Talbot Co.	3,003,282
Wicomico Co	3,577,830
Worcester Co./Somerset Co.	626,259
Worcester Co.	1,926,493
Individual Septic Grants (1344)	17,725,267
TOTAL SEPTIC	<u>\$ 64,761,152</u>

Septic Fund (MDA 40% for Cover Crops)

Sources:

Cash Deposits* \$53,099,193

Uses:

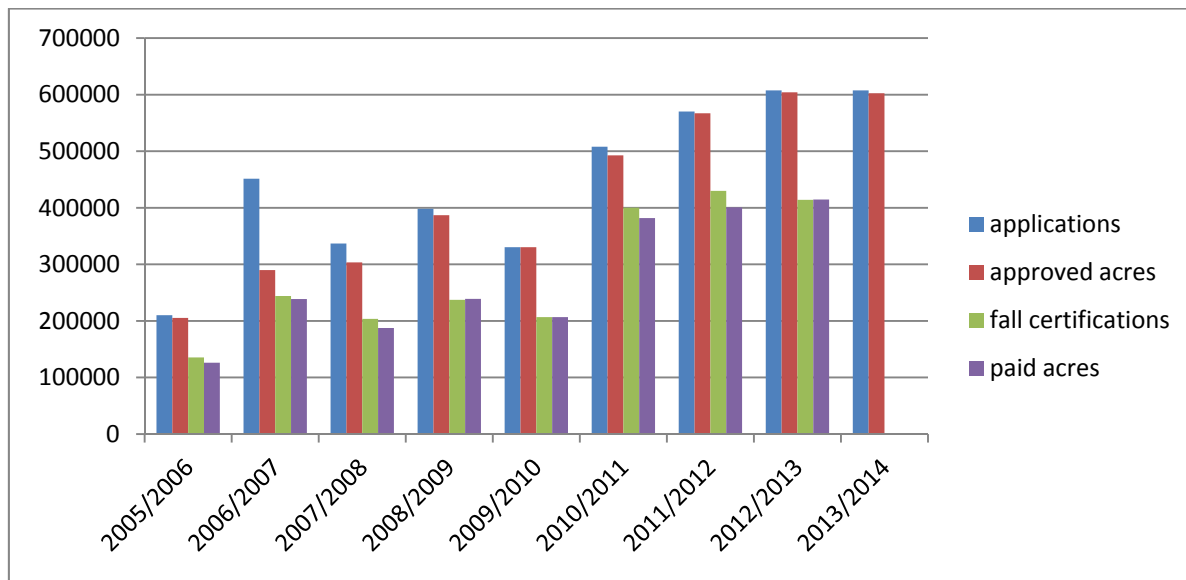
Grant Awards \$61,809,705

Admin. Expense \$1,928,199

Total \$63,737,824

*Cumulative revenue and expenditures as of 6/30/2013

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 caused by weather and other uncontrolled factors. There is also a smaller reduction in acres planted and those paid that relates 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 increase fee is estimated to generate approximately \$100 million in revenues per year, which along with \$480 million in future revenue bond issuance will enable MDE to provide up to 100% in ENR eligible cost grant funding to finance the 67 major Wastewater Treatment Plants (WWTPs)

and five additional minor WWTPs by FY 2017. MDE's current estimate for ENR upgrade of the 67 majors is \$1.259 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.

Starting FY 2018, after payment of bond debt service, the WWTP fund is projected to have \$50M+ per year in fee revenue available for upgrade of additional smaller (< 0.50 MGD) WWTPs with ENR, OSDS (septics) and Stormwater best management practices. Following on recommendations by the Septics Task Force, MDE and MDP, in consultation with the BRF Advisory Committee will begin working on the development of priority system to prioritize/allocate future BRF funding to the different sectors by FY 2018. Planning and design for a typical ENR upgrade is three years. Therefore, to start construction of a minor facility by FY 2018, we need to finalize the selection process by FY 2014, and start the planning for the selected facilities by FY 2015.

Wastewater Treatment Plant Upgrades With Enhanced Nutrient Removal (ENR)

Status of Upgrades:

The Maryland Department of the Environment (MDE) is implementing 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 other factors. Primarily, the Maryland’s 67 major sewage treatment facilities are targeted for the initial upgrades.

ENR upgrades are underway at many plants, and to date, upgrades to 31 major facilities have been completed and are successfully in operation. 20 other facilities are under construction, 11 are in the design stage, and four are in the planning stage. MDE is continuing to work to bring the remaining major facility (Hampstead, Carroll County) into the program by urging the facility to proceed with the ENR upgrade and/or by including nutrient loading limits and a compliance schedule in the discharge permits.

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 facilities that have completed the upgrade and are in operation:

No.	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	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

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 Phase II Watershed Implementation Plan (dated October 26, 2012)). The Phase II Plan builds up upon Phase I WIP (dated December 3, 2010) and provides a more detailed series of proposed strategies that will exceed Maryland 2017 target (60% of the total implementation needed to meet the water quality standards). Phase II also has significantly more local input, thereby providing the additional detail at the local level and increased reasonable assurance of successful implementation.

Maryland's strategy in developing segmentshed waste load allocations (WLA) is to assume that point source cap will achieve the WLAs through the ENR upgrades. To ensure the success of Maryland's TMDL strategy and to allow for attaining 60% load reductions by 2017, ENR upgrades for major facilities need to be completed before that year. In addition, as WLAs are further developed, some minor facilities within certain segmentsheds may be required to upgrade to ENR.

Update on Fees from Federal 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	Current Status
Aberdeen Proving Ground – Aberdeen	The plant was designed and upgraded on 3/14/2006 to achieve seasonal ENR. However, since the upgrade the plant has been capable of meeting the ENR limits on annual basis possibly because the current average flow is less than half of the design capacity. The City of Aberdeen has assumed ownership of the plant and is currently evaluating the plant performance to identify additional improvements needed, if any, to allow the plant to continue to achieve year-round ENR at the design capacity.
Aberdeen Proving Ground – Edgewood	Design was completed. Construction is expected to start in March 2014
Fort Detrick	Construction was completed in June 2012. ENR upgrade is fully operational.
Fort Mead	American Water Group has assumed ownership of the plant. ENR upgrade is underway using the design-build project delivery process.
Naval Station – Indian Head	Construction was completed on 9/21/2011. ENR upgrade is fully operational.
Naval Support Activity – Annapolis	MDE approved the design for Phase I of the project (Denitrification Filter) on 9/9/2013. Construction is expected to start by December 2013.

Annual Operation and Maintenance Grants for the Upgraded Facilities:

Starting in fiscal year 2010 (FY 2010), the BRF legislation allows up to 10 percent of the annual fee generated from users of wastewater treatment facilities to be earmarked to provide grants toward the operation and maintenance (O&M) costs of the enhanced nutrient removal technology. To ensure that each upgraded facility receives a reasonable and fair amount of grant, MDE, in consultation with the Advisory Committee, was allocating the annual operation and maintenance grant at a rate

of up to \$18,000 per million gallons per day (MGD) of design capacity of the facility not to exceed \$216,000 per facility. After the fee increase, MDE is allocating the grants at the following rates:

- Minimum 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

The new rates are based on the pending BRF regulations, and they are subject to change depending on the finalized regulations.

A total of \$2 million were authorized by the legislators in FY 2014. MDE requested authorization for \$5 million in FY 2015. The upgraded facilities listed above that achieved ENR level of treatment in calendar year 2013 will be receiving O&M grants based above rate.

House Bill 893 Implementation

House Bill 893, enacted on April 24, 2007, 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, 2013. The chart below illustrates that some of the plants increased capacity at the time of the ENR upgrade, and compares the actual 2012 flow with the original design capacity.

Facility	Design Capacity (MGD)		Actual 2012 Flow	
	Original	At Upgrade	(MGD)	% of Original Design Capacity
Celanese, Allegany County	2.000	2.000	1.523	76%
Town of Easton, Talbot County	2.350	4.000	2.423	103%
Town of Hurlock, Dorchester County	2.000	1.650	1.126	56%
Kent Island (KNSG), Queen Anne's County	2.000	3.000	1.902	95%
City of Brunswick, Frederick County	0.700	1.400	0.559	80%
Town of Chestertown, Ken County	0.900	0.900	0.745	83%

Talbot Region II, Talbot County	0.500	0.660	0.359	72%
Town of Indian Head, Charles County	0.500	0.500	0.367	73%
Town of Elkton, Cecil County	2.700	3.050	1.827	68%
City of Havre De Grace, Harford County	1.890	3.300	1.285	68%
Town of Poolesville, Montgomery County	0.750	0.750	0.652	87%
Town of Federalsburg, Caroline County	0.750	0.750	0.306	41%
City of Crisfield, Somerset County	1.000	1.000	0.550	55%
Town of Mount Airy, Carroll County	1.200	1.200	0.712	59%
George's Creek, Alleganey County	0.600	0.600	0.688	115%
Hagerstown, Washington County	8.000	8.000	7.682	96%
City of Cumberland, Allegany County	15.000	15.000	11.504	77%
City of Bowie, Prince George's County	3.300	3.300	2.037	62%
Town of Perryville, Cecil County	1.650	2.000	0.66	40%
City of Pocomoke City, Worcester County	1.470	1.470	0.635	43%
Town of Delmar, Wicomico County	0.650	0.850	0.362	56%
Town of Denton, Caroline County	0.800	0.800	0.416	52%
Little Patuxent, Howard County	25.000	29.000	16.988	68%

ENR upgrades created the possibility for capacity expansion beyond the original design capacity by significantly reducing nitrogen loads; however, given the limitations of the WWTP nutrient discharge caps, only some of the plants could expand to take advantage of this possibility. Of the facilities listed above, those that increased capacity include Easton, KNSG, Brunswick, Talbot Region II, Elkton, Havre de Grace, Perryville, Delmar, and Little Patuxent. At this time, among those facilities that expanded, only Easton has flows greater than its original design capacity. This is a preliminary indication that Easton is now beginning to make use of its new capacity, which was added concurrently with the ENR upgrade.

2014 BRF Analysis Findings

MDP's BRF Analysis provides information about the use of new WWTP capacity to support growth (per the HB893 directive) affected by the combination of ENR upgrades and WWTP nutrient discharge caps. As noted above, an ENR upgrade created the possibility for capacity expansion beyond the original design capacity by significantly reducing nitrogen loads; however, given the limitations of the WWTP nutrient discharge caps, only some of the plants could expand to take advantage of this possibility. Any expansions were consistent with all local adopted and approved planning documents.

This analysis considers the broad range of circumstances that affect each major WWTP and its sewer service areas. MDP uses GIS-based (Geographic Information System) methodology to monitor growth activity within the sewer service areas of those ENR upgraded WWTPs that also received capacity expansions. By using GIS-based mapping and visualizations, we can provide authoritative information to inform future BRF Advisory Committee policy recommendations and can advise where State resources can be better deployed.

For each year since 2007, the timeframe for analysis is established by using as beginning and endpoints for each WWTP the calendar year before a major WWTP receives funding for ENR

technology and the current reporting year. The corresponding sewer service areas (sewersheds) are analyzed for any changes in boundary, service designations, and new development activity that has occurred therein during the relevant timeframe. MDP defines development as all improved parcels that are less than 20 acres with improvement values of \$10,000 or more. This captures growth both inside and outside of the PFA as it relates to the specific ENR upgraded sewersheds. Additionally, various planning documents (Water and Sewerage Plans, Comprehensive Plans, Water Resources Elements, Municipal Growth Elements, etc.) are researched and evaluated to provide insight into a county or jurisdiction's plans and policies for growth within the WWTP sewersheds.

The MDP analysis covered twenty one (21) sewersheds of operational ENR upgraded WWTPs organized into six regional evaluations. Based on those findings, MDP highlights the Easton Wastewater Treatment Facility located in Talbot County. This ENR upgraded WWTF currently has flows greater than its original design capacity, which is a preliminary indication that Easton is now beginning to make use of new capacity. In addition, this plant was upgraded five or more years ago and provides the best opportunity to assess the impact that an ENR upgraded WWTP has had on growth in the municipality it serves. Data and presentation comparable to that subsequently provided for Easton is available to the Committee upon request.

Easton

In 2002, The Easton Utilities Commission prepared a *Capacity Increase and Improvement Plan* to review the needs of the Easton Wastewater Treatment Facility and its community, for the period from 2001 to 2025. The Plan encompasses a series of analyses and assessments concerning the existing Easton WWTF current status, operation, future needs, and ability to meet the Chesapeake Bay water quality goals. The Plan identifies the most cost effective alternative wastewater treatment system to meet the future demands of the Town as the construction of a new facility employing biological nutrient removal (BNR) processes. The fact is clearly documented in this Plan, that even before 2002; the Town of Easton saw the need to put a strategy in place for its WWTP. They were informed of the existing facility's strengths and weaknesses, and aware that it was reaching its plant flow capacity of 2.35 MGD.

In 2007, the Easton Wastewater Treatment Facility was upgraded to Enhanced Nutrient Removal technology at a cost of approximately \$40,000,000. The Easton WWTF has the distinction of not only being the first WWTP to benefit from Bay Restoration Funding but also to be considered as



one of Maryland's most environmentally friendly WWTP. It now has the ability to not only meet but exceed the Chesapeake Bay water quality goals by reducing annual concentrations of nitrogen to 3 milligrams per liter (mg/l) and phosphorus to 0.3mg/l. These reductions equate to 70 and 88

percent respectively. The Facility employs a wide range of innovative technology including ultraviolet radiation for disinfection and an advanced Solids Handling System to convert sludge into a dry, manageable, and useful fertilizer.

In 2008, U.S. Environmental Protection Agency's mid-Atlantic Region, presented the Town of Easton and Easton Utilities with EPA's regional award for excellence in the operation and maintenance of the town's wastewater treatment plant.

The landscape of the Easton Wastewater Treatment Facility Sewer Service Area (SSA) has changed dramatically since 2006, which is the year prior to the start of its ENR Operation. In 2006 the existing service area (S1) had approximately 6,000 acres. As of 2012, the S1 service area has increased to just over 7,000 acres (See Table 1). In terms of new development this acreage increase translates to approximately 700 newly improved parcels (or connections) located within “S1”. In 2006 the number of connections within “S1” was approximately 5,700, currently the total is over 6,300 (See Map 1). The changes to the existing service area are the result of a series of approved annexations. All of the new connections are located within future growth areas identified in the *Municipal Growth Element of the of Town of Easton 2010 Comprehensive Plan*.

Easton WWTP SSA 2006	ACRES	% of Total Sewershed	Easton WWTP SSA 2012	ACRES	% of Total Sewershed
S1	5,981	89%	S1	7,055	92%
S2	418	6%	S2	354	5%
S3	289	4%	S3	206	3%
Total	6,688	100%	Total	7,658	100%

Table 1 - Easton Sewer Service Acreage Summary

As of 2011, Easton WWTF actual flow of 2.36 MGD slightly exceeded its original design capacity of 2.35 MGD (See Figure 1).

Easton is the largest and fastest growing municipality in Talbot County. The US Census Bureau reports that during the period from 1970 to 2000, Easton grew in population from 6,809 to 11,708; this represents a population growth rate of 72%. Then in the next decade, from 2000 to 2010, it experienced an additional increase of 36%, with the population growing from 11,708 to 15,945 (See Table 2). Similarly, this growth trend is seen in the total number of housing units between 2000 and 2010, which were 5,400 and 7,405, respectively, an increase of 2,006 new units. This trend is indicative of what is happening in Talbot County and on the Eastern Shore.

Easton Wastewater Treatment Plant Capacity Status

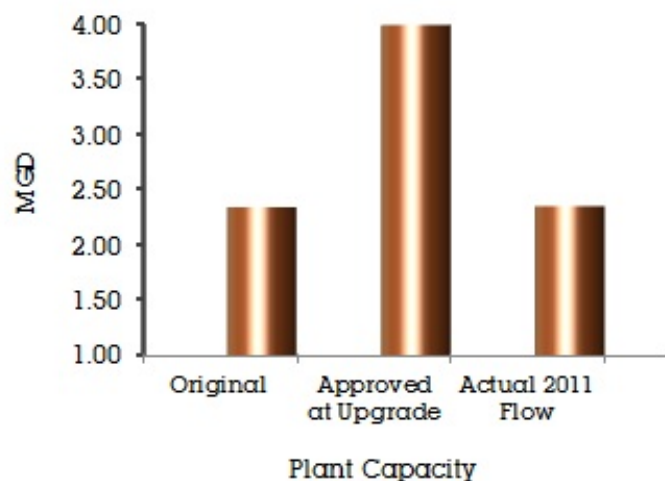
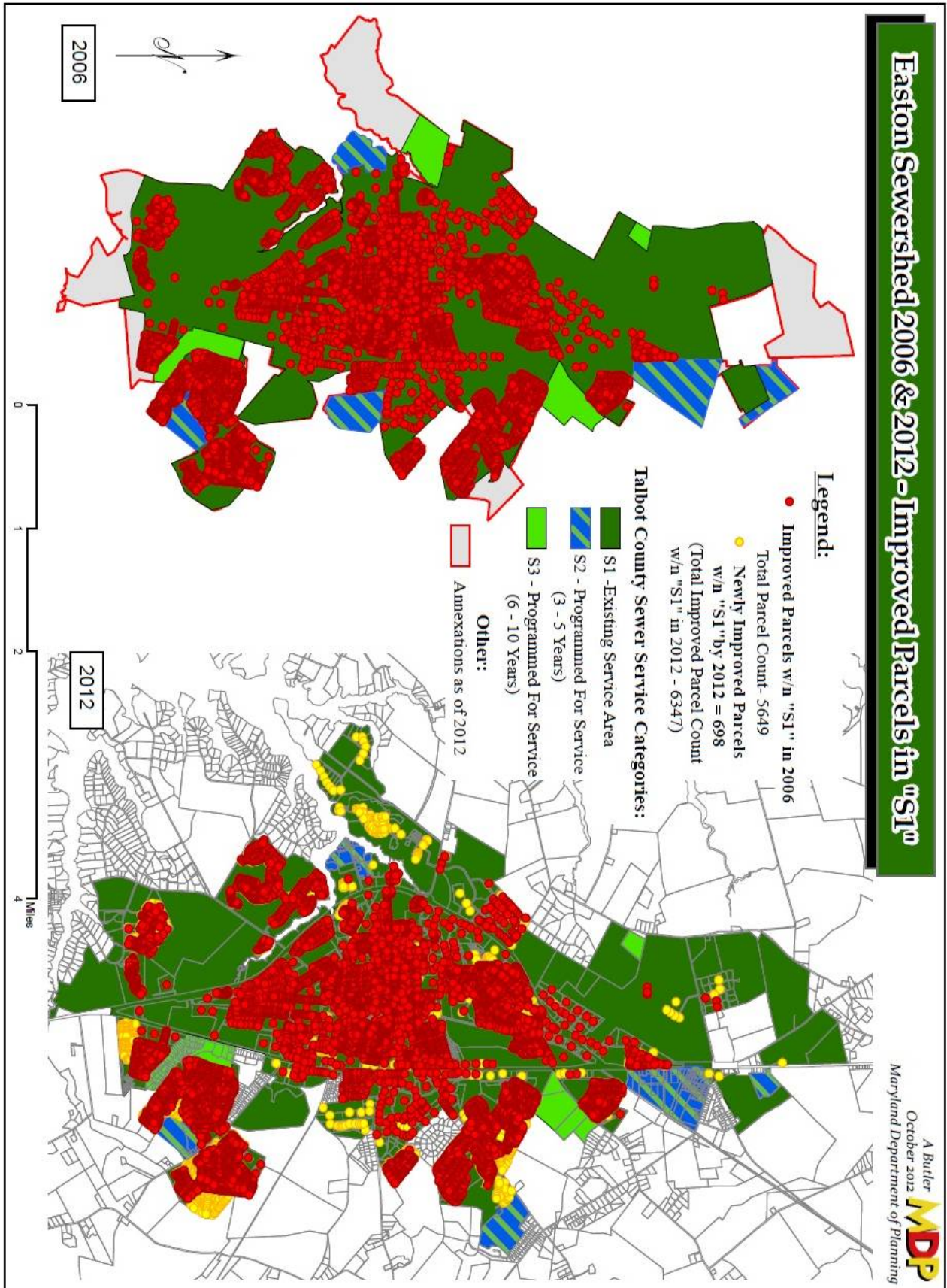


Figure 1 - Easton Sewer Capacity Status

Map 1 - Easton Sewer Service Area – Existing Service 2006 & 2012 – Improved Sewered Parcels



U.S. Census Bureau Population			
Jurisdiction/County	1970	2000	2010
Easton	6,809	11,708	15,945
Talbot	23,682	33,812	37,782

Jurisdiction/County	Population change 1970-2000	Growth Rate Percentage 1970-2000	Population Change 2000-2010	Growth Rate Percentage 2000-2010
Easton	4,899	71.95%	4,237	36.19%
Talbot	10,130	42.78%	3,970	11.74%

Table 2 - Easton & Talbot County Population Comparison

Table 3 shows the total number of improved parcels that are currently located within the Existing Service Area (or “S1”) and the Priority Funding Area certified by Town of Easton and Talbot County. There is a small pocket of 8 parcels that are located outside of the certified PFA (located in the “PFA Comment Area” which denotes areas certified by the local government as growth areas but which do not meet the PFA criteria at this time according to MDP).

Easton Sewershed 2012 PFA Parcel Status	Parcel Count
Parcels located in PFA	7,144
Improved Parcels located in PFA	6,406
Improved Parcels located within "S1" & PFA	6,339
Improved Residential Parcels located within "S1" & PFA	5,394

Table 3 - Easton Priority Funding Area Improved Parcel Status

Current 2014 BRF Findings

Easton is the only ENR WWTP that has started using its expanded capacity. The original design capacity was permitted for 2.35 MGD. In 2007, the Easton WWTP was upgraded to treat an average daily flow of 4.00 MGD. The Actual 2012 Flow reveals that the plant is currently operating at 103% of its original plant capacity. (For details see chart on P.17)

The current findings for the Easton Sewer Service Area (or Sewershed) remain consistent with the facts presented by MDP in the 2013 BRF Report. The Easton Wastewater Treatment Facility continues to provide public sewer service to the majority (98%) of improved parcels within its sewershed, the number of newly improved

Easton Sewershed 2013 Improved Parcel Service Category	Improved Parcel Count	Percent of Improved Parcels
S1 Existing Service Area or Under Construction	6347	98%
S2 Programmed for Service within 3 to 5 yrs.	69	1%
S3 Programmed for Service within 6 to 10 yrs.	62	1%
	6478	100%

Table 1 – Easton Improved Parcels

parcels within the Existing Sewer Service or “S1” remains at 6,347. (See Table 1)

In terms of acreage, the overall size of the Easton Sewershed has not changed since last year and remains at approximately 7,600 acres. The Existing Sewer Service Area (or “S1”) accounts for 93% of the total sewershed, or 7,032 acres. The remaining 7% is programmed for service within 3 to 10 years.

The Priority Funding Area portion of this analysis reveals that 90% of all of parcels located within the Easton Sewershed are improved and located in the PFA. Upon further examination, improved parcels located within both “S1” and PFA, comprise 88% of the universe set (Table 2). This 88% mainly consists of residential land usage with an average lot size of .25 acre. The number of improved parcels within “S1” but outside of the certified PFA remains at 8

Easton Sewershed/PFA 2013 Total Parcel Status	Improved Parcel Count	Percent of Improved Parcels
Improved & Unimproved Parcels located PFA (Universe Set)	7186	100%
Improved Parcels located in PFA	6433	90%
Improved Parcels located in "S1" & PFA	6339	88%
Improved Residential Parcels located in "S1" & PFA	5394	75%

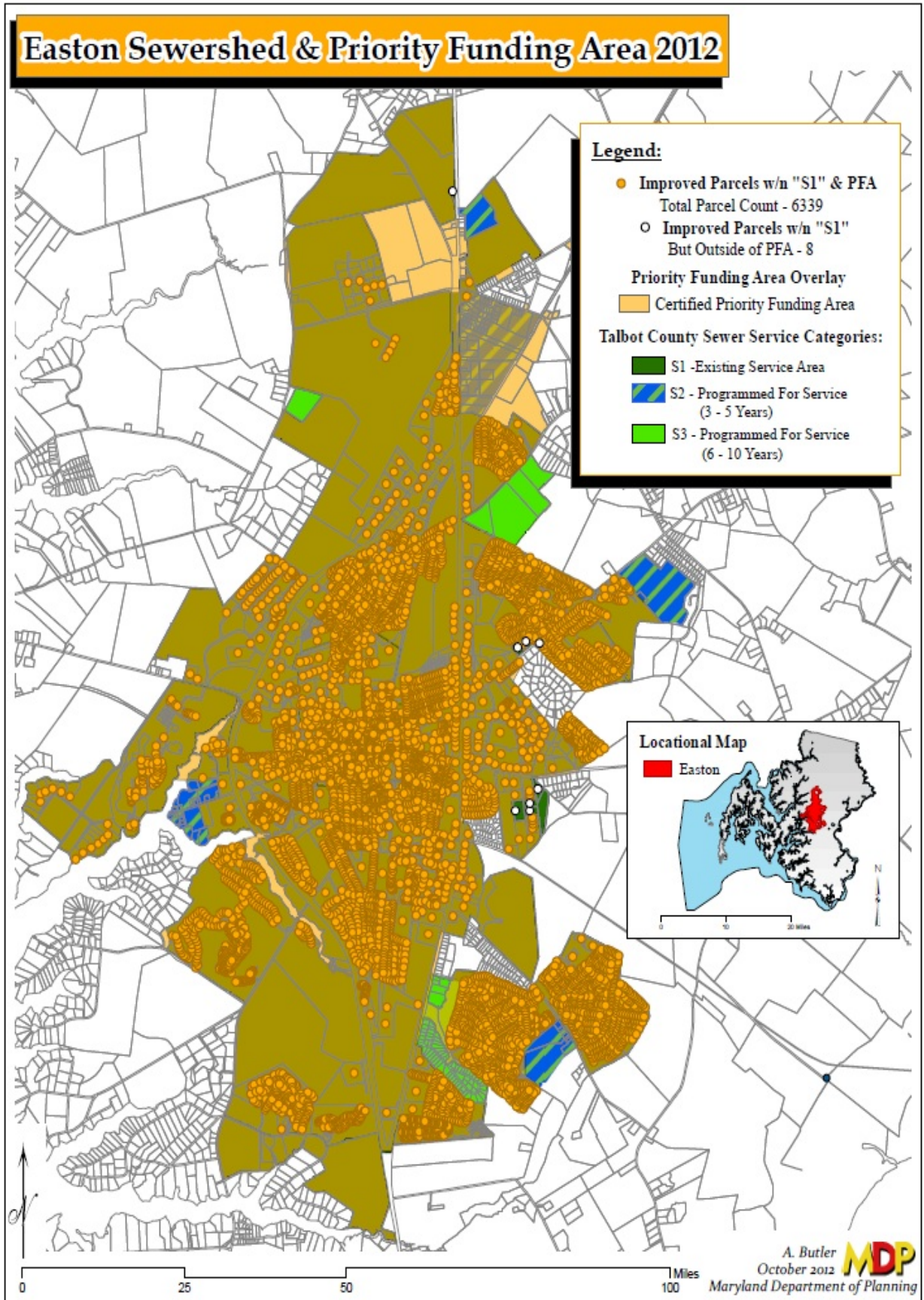
Table 2 - Easton Priority Funding area Improved Parcels Status

parcels (See Map 2). Although designated “S1”, these parcels are all on septic systems at this time. Seven are mostly older parcels built from 1800 to 1972, while one of the seven properties was more recently developed in 2004. The 8 parcels are seeking annexation and will be required to connect to sewer when that occurs. These properties should qualify for certified PFA upon the Town’s request due to sufficient zoning and being inside of the sewer service area.

The Town is consistent with meeting PFA criteria and key goals. Their Growth Area is well established and exhibits the Town’s efforts to, preserve existing communities, effectively benefit from infrastructure investment by targeting State resources, and reduce development pressures on farm and natural resources areas by encouraging projects in largely developed areas.

Conclusion

Based on MDP’s analyses, there is little to indicate that ENR upgrades are encouraging extension of services to and consumption of WWTP capacity by development outside of PFAs. Our findings show that ENR improvements have provided a unique opportunity for the Town of Easton to continue to meet its growth goals under highly improved water quality standards. However, we do find that how MDE sets the WWTP nutrient discharge caps on ENR Upgrades will impact future growth possibilities for a certain town.



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 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. Senate Bill 554 approved in the 2009 legislative session, 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 OSDS installed in the Chesapeake Bay and Coastal Bay watersheds include BAT. In addition, 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 perform operation and maintenance complete a course of study approved by MDE. As of September of 2013 approximately 1,050 installers have been certified by MDE and 150 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^a
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

a: House Bill 62 approved in the 2010 legislative session, required MDE to assist homeowners with failing OSDS in critical areas from moneys in the Bay Restoration (Septic) Fund for 100% of the BAT cost during calendar years 2010, 2011 and 2012.

Summary of BAT Installations State Fiscal Years 2008 through 2013						
	SFY 2008	SFY 2009	SFY 2010	SFY 2011	SFY 2012	SFY 2013
Total BAT Upgrades	292	901	1115	651	652	870
Critical Area BAT Upgrades	189	418	551	569	540	583
Allegany Co.				1	2	2
Anne Arundel Co.	44	72	0	134	135	186
Baltimore Co.				9	16	18
Calvert Co.	35	49	55	79	63	91
Caroline Co.	10	17	7	9	24	19
Carroll Co.				3	2	3
Cecil Co.		1	26	23	34	60
Charles Co.	19	16	51	1	5	5
Dorchester Co.		11	5	68	69	34
Frederick Co.	14	17	0	11	16	37
Garrett Co.				7	5	8
Harford Co.			45	1	7	4
Howard Co.				3	7	7
Kent Co.	12	28	2	21	42	46
Montgomery Co.				4	8	9
Prince George's Co.				0	0	0
Queen Anne's Co.				71	59	73
St. Mary's Co.				58	49	111
Somerset Co.				23	28	38
Talbot Co.	49	52	10	31	21	37
Washington Co.		16	25	20	22	39
Wicomico Co.	48	19	77	51	30	32
Worcester Co.	8	34	61	23	8	11

Income Based Grant Funding: To leverage the availability of BRF grant funding for the upgrade of OSDS with BAT, MDE guidance requires grant recipients to limit financial assistance to homeowners (except those with failing systems in the critical area, who were eligible for 100% funding through 12/31/12 per HB 62 above) based on an Income Based Criteria. The Program guidance for FY 2014 is available on the web site at:

http://www.mde.state.md.us/programs/Water/QualityFinancing/Documents/FY%202014%20Program%20Guidance%20-%20Final%20June%202013_updated_7-11-13.pdf

MDE Approved BAT for Nitrogen Removal: MDE currently has approved 8 BAT for 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

Cover Crop Activities

Recent Program Streamlining and Targeting to Achieve Maximum Nutrient Reduction:

In FY2013, MDA continued to implement a targeting strategy to maximize nutrient reduction effectiveness of cover crops. 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 and vegetables
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 four 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 \$42,437,327 as of June 30, 2012. In FY 2012, \$5.6 million in BRF were supplemented by an additional \$11.98 million from the 2010 Chesapeake Bay Trust Fund and \$2.2 million from general funds was also utilized to fund the Cover Crops Program.

Maryland Department of the Environment
 Maryland Water Quality Financing Administration

By Restoration Fund
 WWTPr Upgrade Casinow Projection (does not include Septics)

July 2013 Projection

Out Flow \$50.00

Inlet Flow \$50.00

100% ex % increase

10% Holding Exemption

50% ex % increase

100% ex % increase

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

Revenue	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual																					
ENR WWP Grant - RWARDS	30,000.00	43,000.00	20,000.00	15,000.00	165,000.00	90,000.00	227,000.00	165,000.00	295,000.00	195,000.00	185,000.00	220,000.00	180,000.00	250,000.00	145,000.00	16,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00	18,200.00		
ENR WWP Grant - CASH PAYMENTS	12,000.00	20,545.50	24,611.10	14,156.67	45,247.88	87,401.66	83,204.05	195,961.54	298,059.85	220,232.66	275,200.00	143,300.00	18,200.00	5,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00
ENR WWP Grant - Cash Payment	2,675,000	1,300,000	2,380,000	2,829,981	6,388,300	2,192,579	1,062,800	2,000,000	3,000,000	4,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000		
ENR O&M Grants	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	
ENR O&M Grants to WWTPr	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000		
Local Services Reserve Fund (Respectable)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Local Services Reserve Fund (Respectable)	108,438	458,802	855,837	4,664,100	4,710,200	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800
Local Services Reserve Fund (Respectable)	16,703,294	24,202,022	27,862,941	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	34,194,802	
Local Services Reserve Fund (Respectable)	108,438	458,802	855,837	4,664,100	4,710,200	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800
Local Services Reserve Fund (Respectable)	108,438	458,802	855,837	4,664,100	4,710,200	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800
Local Services Reserve Fund (Respectable)	108,438	458,802	855,837	4,664,100	4,710,200	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800	4,916,000	4,916,800

Fixed Balance
 Ending Balance - Cash Basis
 \$ 7,001,465 \$ 49,090,945 \$ 87,149,242 \$ 172,077,895 \$ 207,142,071 \$ 178,001,365 \$ 241,280,046 \$ 226,138,529 \$ 126,138,529 \$ 54,370,481 \$ 10,659,467 \$ 7,969,272 \$ 7,969,872 \$ 4,795,112 \$ 7,001,412 \$ 4,795,112 \$ 10,196,112 \$ 24,594,112 \$ 20,720,112 \$ 530,000,000

Bond Balance
 Local Bonds Sold (2) (Details below)
 WQFA Bonds Sold (2) (Details below)
 WQFA Bonds Sold (2) (Details below)
 Cum. Debt Service Reserve
 \$ 50,000,000 \$ 70,000,000 \$ 80,000,000 \$ 150,000,000 \$ 180,000,000

(1) 1% of Bond Issuance Cost, estimated at 1.2% of bond issue, plus any premium
 (2) Assumed 15-year term at 5% Ann. 5.00% Interest rate with level debt service for 15-year bond issues
 Contact: Jay Korman, Director, MWQFA
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