



Angela D. Alsobrooks
County Executive

THE PRINCE GEORGE'S COUNTY GOVERNMENT

Department of the Environment



June 3, 2019

Mr. Lee Currey, Director
Water and Science Administration
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21230

Dear Mr. Currey:

As requested by the Maryland Department of the Environment (MDE), I am pleased to submit a comprehensive Maximum Extent Practicable (MEP) report that combines information from the Restoration Project Portfolio, Physical Capacity and Financial Capacity.

This report provides an update on Prince George's County's current restoration programs and implications to the Municipal Separate Storm Sewer System (MS4) permit requirements that would influence the MEP.

We look forward to continuing to work with MDE to achieve a mutual and agreeable 5th Generation permit to the MEP.

Sincerely,

A handwritten signature in blue ink that reads "Joseph P. Gill".

Joseph P. Gill
Director

**Prince George's County
Maximum Extent Practicable (MEP) Summary Report**

Preface

This report presents a discussion of the factors impacting the ability of Prince George's County (the County) to implement its next generation permit. It includes a review of planned production, estimated costs and funding, implementation, program and funding constraints.

The report focuses on impervious surface restoration costs for the next generation permit, but that is not the complete story. Project implementation costs to restore 6,105 acres would equal an estimated \$342,136,293. As reflected in the County's draft Financial Assurance Plan, total program costs for the period 2014 - 2023 including project implementation, employee salaries (41 staff), annual street sweeping, inlet cleaning and debt service would total \$649,755,502. On top of this are 30-year maintenance costs for 4,500 acres currently obligated at \$167M. Maintenance costs for additional acres will bring total estimated costs to over \$750M.

The report does not, and cannot, commit the County to fund these estimated costs. A key component in evaluating the ability of an MS4 jurisdiction to meet the requirements of the Clean Water Act "to the MEP" is the "current ability to finance the program." Financing ability includes funding and constraints outside the stormwater world, e.g., school construction, public safety through police and fire services, health care and parks and recreation. The current funding requirement under State law is two years of financial assurance, not five years, and this two-year commitment requires the concurrence of the County Executive and County Council.

It is within this larger framework that the County is committed to doing its part to restore its waterways and, ultimately, the Chesapeake Bay to the MEP.

Introduction

As of January 2, 2019, the County completed its 4th Generation NPDES Permit issued in 2014. This permit included an aggressive increase that doubled the rate of Impervious Surface Restoration (ISR) requirement (from 10% to 20%) compared to its 3rd Generation permit. The 20% increase in ISR was established by the Bay program to meet the TMDL goal by 2025. This ISR increase introduced many budgetary, operational and production challenges for the County. The County's ISR baseline established in 2014 identified 30,524 impervious acres for treatment. This ISR baseline included 15,435 acres of Anacostia Watershed which was developed at a time pre-dating stormwater regulation. With this new requirement, the County faced the ambitious goal to restore 6,105 acres.

The County's existing Capital Improvement Project (CIP) program was not adequately equipped to meet this increased ISR. The State imposed deadline stretched the County's financial and production capacity. An innovative approach was needed to address this increase. To meet the financial capacity, a new fee (Clean Water Act Fee) was initiated in 2014. In 2015, the County implemented a Public Private Partnership (P3), known as the Clean Water Partnership (CWP) program, with Corvias Solutions to augment the production capacity needed to meet the increased ISR.

During the 4th Generation NPDES Permit, with these innovative programs in place, the County completed 2,387 acres in impervious surface restoration by the end of the permit term. We also recognize experiencing shortfalls with the ambitious goal to restore 6,105 acres (20% ISR); a task that proved difficult to achieve within the prescribed schedule, at a reasonable cost with the least impact to existing established infrastructure in our communities. The following is a narrative of the County's ISR restoration program and production capabilities reached.

Maximum Extent Practicable According to 64 Fed. Reg. 68722, 68754 (Dec. 8, 1999)

EPA has intentionally not provided a precise definition of MEP to allow maximum flexibility in MS4 permitting. MS4s need the flexibility to optimize reductions in storm water pollutants on a location-by-location basis. EPA envisions that this evaluative process will consider such factors as conditions of receiving waters, specific local concerns and other aspects

included in a comprehensive watershed plan. Other factors may include MS4 size, climate, implementation schedules, current ability to finance the program, beneficial uses of receiving water, hydrology, geology and capacity to perform operation and maintenance.

The following sections discuss the County's position on the MEP, including various factors affecting restoration objectives as listed below:

1. **Accounting of the Restoration Work** - Impervious Surface Restoration (ISR) Requirements, Scale, Scope and Schedules
2. **Financial Capacity** - Financial Assurance Planning, Current Ability to Finance the Program
3. **Challenges** - Various Competing Programs, Funding Limitations and Capacity to Perform Maintenance Operations and Gray Infrastructures

1. Accounting of the Restoration Work NPDES MS4 Permit ISR Production (January 2, 2014 - January 2, 2024)

Scale: Retrofit 20% of the County's ISR baseline established in 2014 as 30,524 untreated impervious acres = 6,105 acres.

Scope: Develop, fund, resource and implement diverse innovative capital restoration strategies and best management practices (BMPs), reducing nutrient loads thereby improving water quality locally and within the Chesapeake Bay watersheds.

Schedule: Complete all the above within NPDES Permit term, 5 years. 6,105 acres restored in 5 years, approximately 1,221 acres/year. Even at an assumed yield of 25 acres/project (high) = roughly 48 projects/year to cycle through planning, design, permitting, bid, award, take into construction and maintenance, this is an extraordinarily aggressive schedule to resource and operate within typical municipal capacities.

P3/CWP, Phase (March 2015 - March 2018): Even with development of an innovative P3 and RFP for delivery of restoration projects, it took the County fifteen months into the permit term to establish the CWP. The CWP agreement was a three-year term, \$100M contract with a restoration target of 2,000 ISR acres. Within Phase I, 94 projects were implemented delivering 1,403 ISR acres. This initial restoration phase was a heavy lift for the CWP, whose work had to be ramped up in the initial 18 months before breaking ground prior to the first full construction season starting in September 2016, which was thirty-three months or 55% into the five-year permit term. Program initiation included identifying and hiring internal

operations, prime and subcontractors, standing up administrative and operational systems and protocols and services, project inventory development, design and permitting, solicitation, bidding and awards.

Recently the County exercised its option for Phase II (FY 2019 - 2021) with the County's CWP for \$110M with a second restoration target of 2,000 ISR acres. The County looks forward to stronger performance during Phase II due to having production logistics already in place for the next NPDES permit.

In addition to the CWP, the County utilizes its own CIP program to support the ISR, achieving 232 acres in restoration during this permit period. Looking ahead, the CIP program has over 90 projects and an estimated 2,223 ISR acres in active project inventory.

The CIP program handles drainage complaints and flood control projects that compete for staff and funding resources in the ISR program. In response to that capacity challenge, we are evaluating a transfer of additional CIP restoration project inventory to the CWP by 2021 to leverage the quicker project delivery production and increase ISR performance yields.

During the current permit, to remain in compliance with the NPDES MS4 permit, the County has completed 2,387 acres in impervious treatment and will be securing the remaining 3,718 impervious equivalent credits through nutrient trading (61% via nutrient trading and 39% through restoration) with the Washington Suburban Sanitary Commission (WSSC). As per Appendix D of the MDE Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated (2014 MS4 Guidance), annual pollutant loads equivalency for 3,718 acres of impervious surface restoration are as follows: 42,369 lbs. per year total nitrogen, 7,966 lbs. per year total phosphorus, and 1,796 tons per year total suspended sediment. The County submitted MS4 Permit Modification Request for Nutrient Trading to MDE in August 2018. The County is currently working with WSSC to frame the nutrient trade agreement to align with the permit modification request.

As of January 2, 2019 the total ISR production reflects 2,387 ISR which includes alternative practices that are repeated annually (i.e. inlet cleaning, street sweeping, etc.). The Table 1 below shows the ISR project production by the Department of the Environment (DoE) and the partner agencies.

Table 1. Total ISR production as of January 2, 2019.

Row Labels	Sum of Impervious Acres Credit
Capital Improvement Projects (CIP) by DoE	232.47
Restoration Projects by CWP	1,403.19
Projects by Department of Public Works & Transportation (DPW&T)	105.20
Other DoE Programs: Rain Check Rebate, Stormwater Stewardship Grant, Tree Planting by Sustainability Division	5.55
Redevelopment Projects by Developers	20.27
Septic Denitrification and Disconnection by Health Department	66.92
Stream Restoration Projects by WSSC	243.61
Operational Programs by DPW&T (Street Sweeping and Inlet Cleaning)	309.31
Grand Total	2,386.52

Permit ISR Target	6,105 acres	20% ISR
Production Achieved	<u>2,387 acres</u>	1,906 (retrofitted / new) acres installed
Remaining ISR Gap	3,718 acres	

2. Financial Capacity - Financial Assurance Planning, Current Ability to Finance the Program

Financial Assurance Plan and Budget Ceiling for MEP Production Rate

The County's 2nd Financial Assurance Plan (FAP - 2018) formalizes a commitment as required by State Legislation establishing a restoration timeframe between the period of FY2019 and FY2020. After approval from the County Executive and formalization into a resolution through the County Council, the 2018 FAP sets the production rate ceiling on the MEP for the next 2 years. Table 2 describes the County's project implementation cost of \$67.4M for FY2019 and FY2020, pledging 1,544 restoration acres, representing 25.3% of the 20% restoration goal established by MDE in the 4th Generation NPDES Permit. This sets the budget ceiling of \$67.4M for the next 2 years.

value; and collects approximately \$50M annually; it fluctuates \$5M up or down depending on the economy and property values. The WPRF was implemented in 2014 and is intended for improving stormwater water quality, the fees are assessed based on the amount of untreated impervious surface is in the property. The rate is based on Equivalent Service Units (ESU). One ESU represents 2,465 square feet of impervious impact fee charged at \$20.90; and a flat fee of \$20.58 per property account. The total annual collection of this fee is approximately \$14.5 million; this is tabulated in Table 3.

Table 3. Revenue Sources.

Revenues	Tax & Fee	Annual Amount			Average Single Family Pays Annually	Revenue Fee/Tax
		Single - Family	Multi-Family	Commercial		
Ad Valorem Tax Stormwater Enterprise Fund (SEF)	Tax	Either 5.4 or 1.2 cents/ \$100 assessed value; based on urban/rural density	Based on Property Accessed Value	Varies based on Property Accessed Value	\$162.00	\$50M
Clean Water Act Fees Watershed Protection and Restoration Fund (WPRF)	Fee	Residential Small = \$33.12 /year; Medium = \$41.48 Large= \$62.38	1 ESU = 2,465 sf @ \$20.90 /ESU/ year. Plus, admin fee \$20.58/acct	\$372/acre. Plus \$20.58 admin fee/acct	\$45.66	\$14.5M

The SEF has been supporting the drainage infrastructure maintenance and reconstruction for many decades, in 1985 the program was transferred from WSSC to the County. The debt service for the SEF has been accumulating through the years leaving little room available for additional bond sale (see Table 4). As debt increases, there is fewer operating funds left for operating activities and maintenance. For this reason, it is expected that the fund use for water quality restoration will have to compete for dollars with grey infrastructure maintenance.

Table 4. Revenue vs. Debt Service

Ad Valorem Tax (Drainage Infrastructure) Stormwater Enterprise Fund (SEF)							
	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20 (Projected)
Revenues	\$43.3 M	\$49.9 M	\$44.1 M	\$51.8 M	\$47.9 M	\$52 M	\$52 M
Debt Service							
Interest	\$4.6 M	\$5.6 M	\$5.3 M	\$4.8 M	\$5.8 M	\$6.3 M	\$8.0 M
Principal	\$6.4 M	\$7.5 M	\$7.9 M	\$8.0 M	\$8.0 M	\$9.8 M	\$11.0 M
Subtotal Debt	\$11.0 M	\$13.1 M	\$13.2 M	\$12.8 M	\$13.8 M	\$16.1 M	\$19.0 M
Percent of Revenue	25.4%	29.0%	26.3%	25.0%	28.8%	30.9%	36.5%
Local Watershed Protection & Restoration Fund (WPRF) - Clean Water Act Fees							
Revenues	\$14.1 M	\$14.5 M	\$14.6 M	\$14.5.0 M	\$14.74 M	\$14.9 M	\$14.5 M
Debt Service							
Interest	0.0	\$0.0	\$0.0	\$0.0	\$0.23 M	\$1.9 M	\$1.9 M
Principal	0.0	\$0.0	\$0.0	\$0.0	\$2.60 M	\$3.14 M	\$4.0 M
Subtotal Debt	0.0	\$0.0	\$0.0	\$0.0	\$2.83 M	\$5.04 M	\$5.9 M
Percent of Revenue	0.0%	0.0%	0.0%	0%	19.2%	34%	41%

As noted, revenue collections are subject to annual variability, as an example the SEF revenues are based on the assessment value of a property, and property values can change during challenging economic times. Yet even if there are steady tax/fees revenues from the two funds, yearly increase in debt payments will reduce the effectiveness in the operating side (revenue minus debt payments) over time (Figure 1).

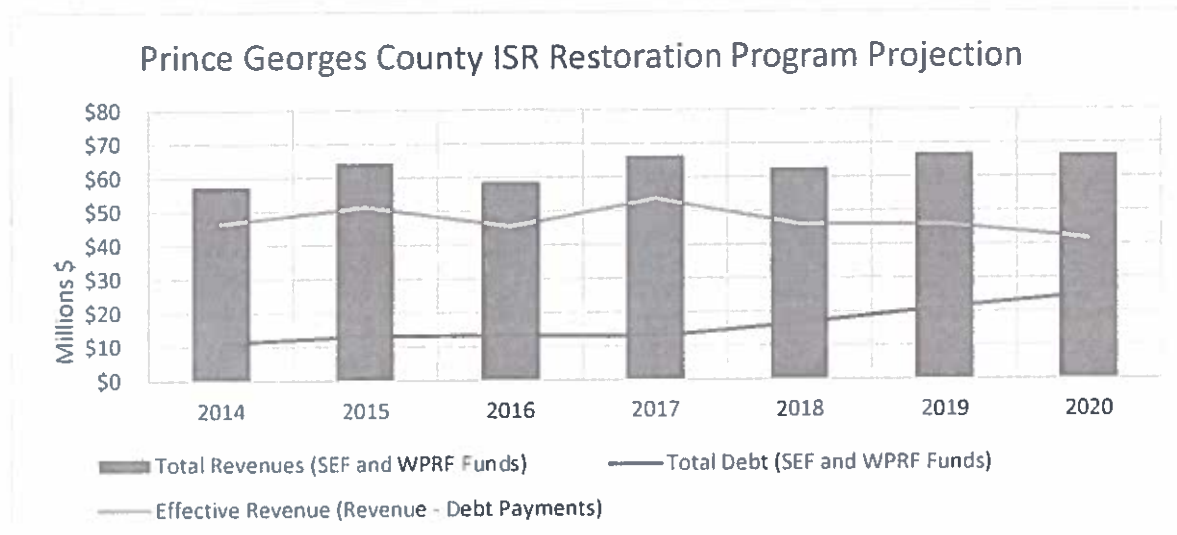


Figure 1. ISR Program Debt vs. Revenues from Stormwater Enterprise and Watershed Protection and Restoration Fund.

3. Challenges - Various Competing Programs, Funding Limitations, and Capacity to Perform Maintenance Operations

Factors that had a historical influence on MS4 impervious area baseline include:

- Various Competing Programs and Funding Limitations
- Challenges on restoring public versus private property
- Restoration programs set up timeframe
- Challenges in the permitting process
- Chasing the moving target for new requirements (e.g. dam safety)
- Limitation on procurement
- Capacity to perform operations and maintenance - gray infrastructure
- Capacity to perform operations and maintenance - water quality infrastructure
- Capacity for project management

Various Competing Programs and Funding Limitations

Historically, flood control was the primary responsibility of the Stormwater Management Program, which was mostly supported by Stormwater Enterprise Funds (SEF) for improving and maintaining drainage infrastructures. In 1985, the County reoriented its Stormwater Management Program to include water quality; however, the program was used as a co-benefit where possible to solve the dual purpose: water quality and flood control. With the initiation of the Clean Water Act fee (aka WPRF) in 2014, additional funding became available which was solely dedicated to the water quality projects; however, this funding generated was insufficient (one third of SEF funding) to support all the water quality projects. There are four major programs that are supported by this funding:

1. Infrastructure maintenance by the Department of Public Works and Transportation (DPWT)
2. Capital Improvement Projects by DPWT
3. Capital Improvement Projects by DoE for Flood Control and Drainage Improvements
4. Capital Improvement Projects by DoE for Water Quality Improvements

One third of the funding from SWF are used for the first two programs; whereas all the WPRF funding is used for the water quality projects by DoE. The 2018 FAP shows that the expense to implement water quality projects are much higher than the annual revenue generated by these two funds. To makeup and support the CIP program for water quality, the County utilizes general obligation bonds. With the two funds already being overstretched, the flood control projects competing with water quality from SEF funding further creates a challenge for MEP.

Challenges on restoring public versus private property

The stormwater impacts from legacy urban stormwater runoff are a result of three quarters of a century development, resulting in land use changes for making room for commercial, industrial and residential activities at a time that predated any stormwater regulations. These impacts simply cannot be reversed in a single permit term. Table 5 shows the distribution of ISR and highlights the major land use categories where the impervious surfaces are located (buildings, parking lots, roads, and walkways), whose higher percentage are on private property and represent the highest in difficulty for retrofit.

Table 5. Facing Challenges - Anacostia River Watershed total impervious area in Prince George's County

Impervious Type	Area (acres)	Percent of Impervious Area	Percent of Total Watershed Area
Aviation	10.0	0.07%	0.02%
Bridges	57.5	0.37%	0.11%
Buildings	4,247.3	27.52%	7.83%
Driveways	962.2	6.23%	1.77%
Gravel surfaces	268.2	1.74%	0.49%
Other	108.6	0.70%	0.20%
Other concrete surfaces	409.4	2.65%	0.75%
Parking lots	3,833.0	24.83%	7.07%
Patios	193.9	1.26%	0.36%
Pools	22.0	0.14%	0.04%
Railroads	8.1	0.05%	0.02%
Roads and	4,174.1	27.04%	7.70%
Track and	66.9	0.43%	0.12%
Walkways	1,074.0	6.96%	1.98%
Total	15,435.3	100.00%	28.46%

Present County restoration programs are currently focusing on installation on public lands, (Parks, County/Municipal Buildings, etc.). Other strategies for retrofitting roads for addressing stormwater management are costly and difficult to implement due to utility impacts, structural safety requirements, traffic disruption and higher costs. Restoration opportunities on publicly owned properties is being diminished, the remaining impervious categories located on private property will take a considerable amount of time to negotiate owner buy-in, easements for construction and property owner maintenance agreements, all these issues will increase the costs as more property owner interaction will be required. While the County continues to strive to reach restoration goals in the timeframe prescribed by the permit, feedback from the production teams is becoming clear about the limits of production.

The U.S. Environmental Protection Agency (EPA) has intentionally not provided a precise definition of MEP. However, various factors for consideration in determining MEP are present in the 1999 preamble to the Phase II MS4 rule.

A preliminary evaluation of those factors has identified three that are significant indicators that the County has reached its maximum program production capacity: site availability, current ability to finance the program (including debt service) and increasing operation and maintenance costs.

Program Ramp Up

Several challenges were not well understood when the County began work on the ambitious ISR goal set by the State in the 2014 permit, and these challenges delayed implementation schedules and contributed to the County's inability to meet the 2019 permit projections. The ISR goal set in the 2014 permit was a significant increase over past permits (from 10% previous permit, to 20%), and the first 2 ½ years of the permit cycle were spent developing a comprehensive watershed implementation plan for various watersheds county-wide, securing funding by legislating new clean water act fees, new staff hires and increasing contracting capacity through a private-public-partnership. For the CIP program, the County is continuously exploring new contracting and partnering agreements with the Maryland-National Capital Park and Planning Commission (MNCPPC) and the State Highway Administration (SHA) to improve future program performance, however the aggressive scope of restoration work being required in the Chesapeake Bay Watershed has increased project costs as MS4 jurisdictions compete for qualified contract support.

Permitting

Permitting process and regulations (State and Federal) need to be streamlined to support construction schedules for the restoration program. Permitting requirements at the Federal, State and local levels delayed project schedules by failing to recognize the fundamental difference between land development projects (as opposed to restoration projects), which must be closely regulated to avoid environmental impacts, and restoration work, which results in a net improvement to the environment. Older stormwater management facilities present opportunities for retrofits, but the areas downstream of these facilities have since been developed and retrofitting them would often result in their reclassification as high hazard dams, requiring additional regulatory requirements, some included additional costly wetland restoration add-ons to the restoration project and lengthy permitting process.

The proposed retrofit of existing stormwater facilities and stream restoration projects provides an opportunity to not only gain restorative credits for water quality, but also vastly improves the existing environmental degradation created by natural conditions and unabated stream channel erosion. The net-gain achieved through these projects demonstrates a functional uplift so that the project is essentially self-mitigating. Should the project require off-site mitigation, the restorative purpose for the project would be difficult to justify due to increased cost, timeframe for approvals and consumption of restoration funds for mitigation purposes. We believe these projects should be allowed to proceed through verification of the self-mitigating attributes. MDE recognized this premise and approach as presented in Secretary Grumbles' September 14, 2015 letter to Mr. Leslie Knapp of the Maryland Association of Counties stating that *"The Department further agreed that no mitigation is required for a project that is intended to be "restorative" of water quality, habitat, aquatic resources, etc., provided the need for restoration is adequately documented. If a project is designed to provide "functional uplift", then it can be construed as a "net gain", rather than a "net loss" of resources/functions, and is essentially self-mitigating."*

Dam Analysis

The County is experiencing further delays and increased costs with navigating and complying with State requirements to address all non-compliant deficiencies associated with a pond embankment during a retrofit permit review. While the County recognizes and supports the State's public safety role, holding the performance of a pond retrofit until other operational features are compliant not only drives costs and delays to performance, it may ultimately pull a project from production due to cost and schedule. As an example, installation of a forebay for a WQ improvement should not be considered an impact to "wooded cover on an embankment, or perhaps a marginally non-compliant outfall". These conditions should be considered for performance under a separate track, schedule and budget.

Procurement

Managing and processing significantly increased contract activity in a timely manner is critical in project production, both in design and construction. In the laudable interest of promoting and building local businesses and capacity, the County's procurement codes require agencies to procure contracts

with County Based Businesses (CBB), and County Based Small Business (CBSB) on task orders up to and including \$500K. While this is progressive and positive for local economic growth and development, it challenges ISR production schedule performance. While the trend of County-based engineering businesses appears to be trending upward, the current capacity has yet to establish sufficient capacity to keep pace with the ISR schedule demands. In this case, the Department seeks justification-based waiver approvals to navigate the code requirement and solicit outside resources for the required professional services, thus adding time to schedule and performance.

Capacity to Perform Operations and Maintenance - Gray Infrastructure

The County's public stormwater management infrastructure has been increasing at a steady pace, prior to and since the inception of the stormwater management program. This includes drainage systems that are reaching end of life condition. As mentioned before, the operations and maintenance activities use operating funds, which dollars are in decline due to the incurred debt service resulting from bonds. Drainage infrastructure uses an average of \$10M from the total revenues listed on Table 3; the dollar amount is expected to increase as the infrastructure ages.

Capacity to Perform Operations and Maintenance - Water Quality Infrastructure

Regulation requiring the installation of ESD devices will substantially increase the number of installed devices that will need to be maintained. This increase will affect the current budgetary constraints forcing to compete for dollars between various programs/agencies. The County's inventory of BMPs as of FY2018 is depicted in Figure 2.

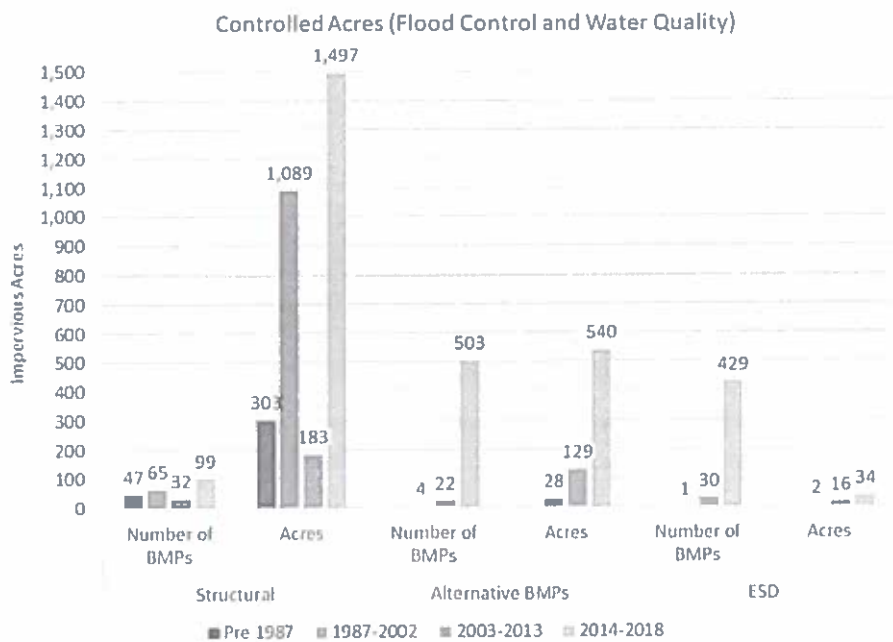


Figure 2. BMP Inventory and Impervious Acres Controlled by Various BMP Types.

To accommodate the maintenance expense for a 30-year term, the County has signed a Master Maintenance Agreement (MMA) with Corvias Solutions committing a total \$ 167,582,000. This projected expense is in addition to the total ISRP Cost of \$649,755,502 by the end of 5th Generation NPDES Permit term as described in the County's 2018 - FAP. The projected maintenance directly impacts revenues from the operating budget, this expense cannot be supported by the bonds as in the case of capital expense.

Capacity for Project Management

The DoE CIP program has seven full time project managers (PM) dedicated to the design team. These engineers serve as Project Managers overseeing the design and permitting of both water quality and water quantity control (flood control), both programs are required per local, State and Federal regulations. While an emphasis has been placed prioritizing the water quality restoration program, the flood control program must be served at the same time. Presently, the County's CIP program has 91 flood control and water quality projects in various stages of production totaling 2,223 acres dedicated for water quality in the 5th Generation NPDES permit.

Conclusion

Prince George's County continues to make great strides in building a robust stormwater program. We look forward to continuing to work with MDE to achieve a mutual and agreeable 5th Generation NPDES Permit to the MEP.

**Prince George's County, Maryland
Physical Capacity MEP Analysis
Questionnaire**

1. What is the typical implementation time frame (from planning through construction) for a restoration project? Provide a typical Gantt chart for the following three main classes of BMPs and break down into planning, design, and construction phases: 1. Large upland stormwater projects (e.g., new and retrofits for ponds, bioretention, infiltration basins, etc.); 2. Instream restoration projects; and, 3. Alternative projects (not annual) (e.g., tree planting). Provide a written justification to explain the time frames for each BMP class and phase.

Capital Improvement Program (CIP):

See Gantt Charts in Attachment A.

BMP CLASS	TYPICAL IMPLEMENTATION TIME FOR CIP PROJECTS AVERAGE DURATION (WORK DAYS)			
	PLANNING	DESIGN	PERMITS	CONSTRUCTION
LARGE UPLAND STORMWATER PROJECTS				
Ponds	91	491	281	358
ESD Measures	61	281	161	303
INSTREAM RESTORATION PROJECTS				
Stream Restorations	91	641	371	411
Outfall Restoration	91	461	281	333
Shorelines	91	641	371	453
ALTERNATIVE PROJECTS	61	251	161	273

CIP Planning Phase

This phase includes BMP inventory assessment and pre-planning activities, including encumbrance of funding for this phase. The County team and consultant engineer identify and evaluate project opportunities which have potential for stormwater retrofit projects. Typically, these opportunities will be of similar in BMP TYPE, in order that in the next phase of design work these similar opportunities lead to design and construction efficiencies. The CIP performs preliminary screening and identifies a project sites to be evaluated in an individual task order. The number of sites to be evaluated is dependent upon the BMP types, size of watershed being evaluated, etc. Generally, this planning phase duration is 4 – 6 months.

CIP Design and Permitting Phase

This phase is comprised of BMP design development and permitting. Submissions for various permits and development of designs for SWM retrofit and /or restoration, erosion and sediment control, natural resource inventories and plans, floodplain, and mitigation go through a rigorous constructability review, and county certified third party approval process, along with state and federal review, as required. The design phase addresses not only the required permits and code requirements, but also landowner and other stakeholders buy-in or acceptance. This requires temporary rights of entry, and easements, and if quasi – public or public lands are involved, then Memorandums of Understanding. The design phase duration varies based upon BMP type and complexities of multiple land parcels or ownerships.

CIP Construction Phase

The goal during this phase is to construct projects within the original project budget and schedule and in accordance with the approved design plans while complying with applicable federal, state, local laws. County's construction team is involved in a consultative capacity during the project planning, bidding and through design phases, and ultimately manages the construction phase and final project close out.

- a. During the planning stage and through design, provides critical constructability reviews and collaborates with the design team to ensure proper selection of responsive and responsible contractors during the bidding phase.
- b. During the construction phase, the County's team administers the construction contract, performs routine daily inspections and reporting, monitors construction activities, prepares essential project correspondence and documentation, coordinates design changes with CIP Design team, minimizes and negotiates contract claims and changes, conducts final close out and warranty inspections, and develops final contract close out documentation.
- c. During Post construction, the County's team conducts warranty inspections and coordinates warranty repair and maintenance with the contractor.
- d. Throughout all phases, the County's team regularly coordinates with residents and stakeholders to assist with gaining acceptance of the projects.

The duration of the construction phase varies based on the project's scope of work, complexity, and number of devices installed. The County's goal is to initiate contractor pricing prior to the 100 % design completion / permit issuance, to the extent feasible, as shown on the GANTT schedules, **Attachment A**.

The categorization of the County's BMP inventory under these three (3) Main Classes of BMPs, which were designed and implemented within the Permit Term 1/2/14 through 1/2/19 is as follows:

CIP PROJECT INVENTORY DURING PERMIT TERM					
Project Phase	Total Number of BMPs	IAT	Number of "Large upland stormwater projects"	Number of "Instream restoration projects"	Number of "Alternative Projects "
Completed	47	182.98	31	10	6

A categorization of the County's current CIP inventory into these three (3) Main Classes of BMPs is as follows:

CIP PROJECT INVENTORY AS OF FEBRUARY 2019							
BMP CLASS	LARGE UPLAND STORMWATER PROJECTS		INSTREAM RESTORATION PROJECTS			ALTERNATIVE PROJECTS	IAT
PHASE	Ponds	ESD Measures	Stream Restoration	Outfall Restoration	Shorelines	Reforestation	
PLANNING	67.9	0	77.2	0	0	0	145.1
DESIGN	874.6	4.1	867.2	44.5	118.6	0	1,909.0
CONSTRUCTION	7.5	0.6	9.2	0	28.2	0	45.5
PERMITS	123.5	0	0	0	0	0	123.5
TOTALS	1,073.5	4.7	953.6	44.5	146.8	0	2,223.1

BMP CLASS	CIP INVENTORY (Number of Projects)		
	PLANNING	DESIGN	CONSTRUCTION
LARGE UPLAND STORMWATER PROJECTS	1	25	2
INSTREAM RESTORATION PROJECTS	3	18	2
ALTERNATIVE PROJECTS	0	0	0
TOTALS	4	43	4

Cleanwater Partnership Program (CWP):

BMP CLASS	CWP TYPICAL IMPLEMENTATION TIME AVERAGE DURATION (WORK DAYS)		
	PLANNING	DESIGN	CONSTRUCTION
LARGE UPLAND STORMWATER PROJECTS	See below - Planning	273	179
INSTREAM RESTORATION PROJECTS	See below - Planning 1	260	180
ALTERNATIVE PROJECTS	See below - Planning 1	233	137

Planning

1. Identifying a number of projects that meet the overall programmatic goals at one time. For example, CWP meets with school management to identify 20-25 schools each year that have the potential for stormwater retrofit projects. CWP then conducts preliminary screening, utilizes outreach team to communicate with school principals and other decision makes and narrows down the potential projects in a 2 to 3-month time frame. In doing so, CWP is able to identify approximately 15 to 20 potential projects in a short duration.
2. Screening for projects that meet programmatic goals “in bulk” significantly reduces the planning time. CWP implemented policies and procedures that enable us to identify target projects and screen them in a reduced timeframe.
3. CWP’s incentive payment mechanisms (pay for performance structure) also help identify select high yield projects.

Design

The design phase is comprised of SWM, ESC, and Forest Conservation plans that go through a rigorous county certified third party approval process along with submissions to PGSCD to address any comments. After all review comments are satisfactorily resolved, the plans are submitted to file for a local permit.

Construction

Once a project completes design, it goes through the program’s buyout phase. During the buyout phase, a budget book is drafted and then submitted for review and approval by the county. When a budget book receives all required approvals, the construction phase kicks off with a notice to proceed. The duration of the construction phase varies based on the project’s scope of work, complexity, and number of devices installed. The construction phase concludes with project closeout. During closeout, the site is certified by MES to officially mark the end of construction.

See Gantt Chart Attachment A

CWP - Large Upland Stormwater Projects Schedule - 4-10

CWP - Instream Restoration Projects Schedule - 4-10

CWP - Alternative Projects Schedule - 4-10

2. Provide the average time to authorize capital improvement project (CIP) budgets for the initial project planning phase and for the design phase of a typical restoration project (assumes CIP approval for each phase is required). Do you have the ability to combine these two phases or do you have to get CIP approval for each phase consecutively?

Average time to authorize capital improvement project (CIP) budgets?

- **Project Planning Phase**

Alternative Projects – Two Months

Stream Restoration (in-stream) Projects – Two Months

Large Upland Stormwater Projects – Two Months

- **Design Phase**

Alternative Projects – Ten Months

Stream Restoration (in-stream) Projects – Eleven Months

Large Upland Stormwater Projects – Eleven Months

Do you have the ability to combine these two phases or do you have to get CIP approval for each phase consecutively?

Overall CIP Budget Approval Process

The County cannot, by law, expend or contract for the expenditure in any Fiscal Year of more than the amount authorized, appropriated, budgeted and made available for funding CIPs. As a result, all projects, regardless of phase, are subject to annual authorizations for the expenditure (or re-authorizations as the case may be) by the County Council.

An example of the Process

The County’s Fiscal Year is July 1 – June 30. Each September, agencies and their staff submit planned and/or continuing costs for the upcoming Fiscal Year for each CIP. They are reviewed by the County Executive, subject to public hearings, and then submitted to the

County Council for further evaluation and more public hearings. On or before May 15 the County executes the upcoming Fiscal Year budget, and staff begins the process of securing CIP funding to commence on July 1. Therefore, the average time for authorizations for each CIP are at least 9 months each year.

Further complicating this issue is the “Unbundling” requirement of the County Code (Sec. 10A-165). Each solicitation must be subdivided and unbundled so that smaller procurements are created to ensure the County’s requirement that at least forty percent (40%) of each CIP is awarded to certified County-based small businesses (Sec. 10A-161). This is in addition to the County’s M/WBE requirements and Local hiring requirements.

Instances and Limitations

There are instances when the planning phase and design phase work can be accomplished concurrently under a combined scope and task order. There is a contractual limit of \$ 600,000 dollars for a task order. This approach is most appropriate for smaller ESD / LID type BMPs, where a duplicatable BMP template is utilized in the site evaluations. Although there can a shorter time duration for funding procurement, the impervious area treatments achieved through these BMP designs is generally lower than the larger scaled BMPs.

The design of larger scale BMPs, and those which require most extensive permitting costs, such as ponds and streams, generally can be accomplished by multiple BMPs sites in a single task order, up to the \$600,000 procurement limit. Generally, an approach to maximize the number of BMP sites Included in a singular design task order will be more cost and time efficient with funding processes.

3. Provide the average time to procure professional planning, design, and construction services. Is procurement done in phases (e.g., procurement for planning, then procurement for design, and then procurement for construction)? How would a pay for performance type of contract or a design-build-operation-maintenance contract affect these time frames? Please provide information on any innovative contracting mechanism you use to reduce procurement timeframes and what those reduced time frames are.

Procurement is typically done for each phase; the basis is that the funding is for a defined scope of services. The average time duration to procure engineering services and construction contracts is proportional to BMPs scale, design complexities, and any inherent risks with the site opportunity as follows; planning phase services 3-4 months, design phase services 3-6 months, and construction contract work orders are 2-3 months. Planning and Design task orders are also impacted by complexities which result in multiple engineering disciplines being required to provide a comprehensive scope of work or services.

Similarly, construction work orders require subcontracting to complete the scope of work. Delays in procuring construction services may occur due to contractor availability, but generally the negotiation and procurement duration is in range of 3- 5 months. Delays to the construction schedule would be attributed to seasonal constraints or stream restriction periods.

A design- build option has been introduced into the CIP program through a “most practical source” contracting / procurement procedure. This option for procuring services required approximately 12 months of negotiations for a single larger scale BMPs such as stream restoration. This time is in advance of and separate from the GANTT schedules provided under Question #1. Thus, this option would eliminate other procurement times for individual phases with the schedules but could frontload additional contracting time at the initiation of a larger scale project.

4. Provide the number of requests for proposals (RFPs) for BMP construction and for BMP design advertised during the past 5-year permit term. Of these, how many bids were submitted for each RFP and how many required re-advertising? Was there a trend over the permit term in the number of bid submittals received? How many unique companies provided bids for all RFPs?

Capital Improvement Program:

The current Consultant Services Contract (S10-073A) was awarded through County RFP solicitation, to thirteen (13) teams in 2012. Each team has multiple subconsultants for various design work disciplines. This large Contract / award was done to provide a wider opportunity for local firms to expand and gain additional expertise for supporting the County’s environmental needs and services required for the NPDES MS4 permit. Thus Since 2012, the Department of Environment’s capital improvement program design work has been primarily accomplished through this consultant services contract and the number of task orders/ solicitations is indicated in the chart below. DOE is working with the County’s Office of Central Services towards the next generation contract solicitation for engineering services.

For construction implementation, the Department of the Environment CIP program employs an “Indefinite Quantities Contract”. This contract vehicle was awarded to three (3) qualified contractors in June 2016. Prior to this contract, DOE used a rider agreement with a similar contract from another County agency. DOE is working with the County’s Office of Central Services towards a contract extension request effective June 2019.

This DoE Contract No. DoE 2015-0005(D) is specifically tailored to enable expedited processing of contractor work orders to implement the water quality projects required to enable the County to meet the terms of the MS4 Permit. A lengthy County procurement process of evaluating and negotiating with qualified contractors, is addressed by use of this contract.

Generally, the intent/ goal is that there is only one (1) pricing proposal needed for any one project, this eliminates the need for advertising a project. Based upon contractor availability, schedule delays can occur to implementation, but this is not a resultant of “re-advertisement”.

	Number of requests for proposals (RFPs) for BMP construction and for BMP design advertised during the past 5-year permit term						
	2012	2013	2014	2015	2016	2017	2018
Design	2	9	6	8	6	10	13
Construction	0	0	6	4	7	8	6
Base Contract Awards (D/C)	13	0	0	3	0	0	0
Totals	15	9	12	15	13	18	19

Cleanwater Partnership Program (CWP):

* CWP contract Initiation

These numbers represent the buyout/procurement process under the CWP DBOM:

- a) 137 RFP’s have been advertised/issued by the GC’s during the Permit Term
- b) Re-advertise N/A
- c) 7-10 bids per RFP – total 975 RFP’s bid responses from subcontractors

5. Provide information on contracting limitations that result in longer project implementation times. Examples: Limited qualified construction contractors; Woman owned business enterprise (WBE) or minority owned business enterprise (MBE) requirements limit available qualified construction contractors and/or engineering contractors. Describe the issue and provide the time extension that results due to the issue.

Capital Improvement Program:

For construction contracting, the Department of the Environment CIP program operates an “Indefinite Quantities Contract”. Contract specific limitations are; requirement of 20% MBE and 40% County Based Business subcontracting; annual contract extensions are processed until which time that a replacement contracting vehicle is advertised, bid and awarded; and the contract ceiling, per vendor, is current limited to cumulative 7.5 million dollars of work order awarded. Of these limitations, the combined County imposed requirements of 20% MBE and 40% County Based Business subcontracting is accounted for in the negotiations but does not significantly impact the duration for project implementation.

Relative to the Engineering Services Contract; The County’s Jobs First Act (JFA Council Bill -17, CB- 74 and CB-115) have legislated local business requirements seeking to promote and build local business and capacity. Experience is demonstrating capacity development has yet to keep pace with production and schedule demands. The County’s latest legislative

update (CB-115) requires agencies to meet the County Based Small Business (CBSB) and limit task orders up to and including \$500K to be issued/awarded to only CBSB Businesses. DOE is working with the County's Office of Central Services towards a contract extension request effective June 2019.

Further complicating this issue is the "Unbundling" requirement of the County Code (Sec. 10A-165). Each solicitation must be subdivided and unbundled so that smaller procurements are created to ensure the County's requirement that at least forty percent (40%) of each CIP is awarded to certified County-based small businesses (Sec. 10A-161). This is in addition to the County's M/WBE requirements and Local hiring requirements.

Cleanwater Partnership Program (CWP):

- a) Working with smaller target class firms can have an impact. During the onboarding period as we work to immerse them in understanding project scope and requirements. A large value of the program is through local capacity development and mentor protégé program. Allowing the local firm to have the knowledge and learn the necessary skill to competitively bid more projects.
- b) Several firms are very small with minimal manpower. Owners of the companies are not only owners, but wear multiple hats to include estimating, accounting, site visits as well as completing the actual site construction. This effects the subcontractor abilities to price the projects in a shorter time frame that effects the bid to award process as a whole.
- c) Several of the MPP group obviously requires some hand holding however this has not caused considerable delays. GC's have also had to pay for materials / procure materials due to credit issues. Both cause delays and cost more money. Cost delays are due to the fact that subs don't have long standing relationships with vendors to get preferential pricing from them.
- d) Several smaller target class firms do not own their own equipment or have the cash flow to lease. A lot of time, this is an increased cost for subs to rent equipment or man power to execute. Subs that own their own equipment or have several crews can be much more cost effective.
- e) Due to the size of some of the target class firms it is also hard for them to share their manpower on several jobs. They may only have one crew and have to pay the crew regardless if they get a full day's work out of them. Some of our larger firms that can work several jobs at one time can share resources and be more competitive.
- f) Several subs that are learning the trade require the GC to provide full time onsite supervision to help execute plans and specs, provide oversight for daily work tasks as well as planning for next day tasks. Many target class subs are only worried about what happens today. Countless times not having the right equipment, manpower, materials to get a full day's work complete.

6. Provide a typical time frame required to obtain permits from local, State, and federal agencies for the three main BMP project classes (i.e., upland stormwater ponds, instream restoration, and alternative projects) prior to construction. Describe how these time frames affect the overall project implementation time frames described in Question #1. How can these time frames be reduced to help get these projects out the door faster?

BMP CLASS	Total "Design" Phase durations (including procurement for design and construction)	"Permits" timeframes
LARGE UPLAND STORMWATER PROJECTS		
Ponds	21 months	9 months
ESD Measures	15 months	5 months
INSTREAM RESTORATION PROJECTS		
Stream Restorations	28 months	12 months
Outfall Restoration	22 months	9 months
Shorelines	29 months	12 months
ALTERNATIVE PROJECTS	14 months	5 months

(a) Describe how these time frames affect the overall project implementation time frames described in Question #1.

Permits or approvals include, but not limited to; site grading, stormwater management concepts and MD378 approvals, erosion and sediment control approvals, tree conservation or mitigation permits. The various environmental permits under jurisdiction of State MDE or DNR, and Federal USACE includes Critical area, NOI, wetland and waterways permits.

The permit durations required for the design activities for the three main BMP project classes (Upland stormwater ponds and filtering devices, Instream restoration, and Alternative projects) are generally inherent within each "technical design" phase within the overall schedule. Thus, it is difficult to breakout the permits timeframes on an individual permit basis. Reference the "design" durations in the Gantt Charts and permit durations identified in Question # 1.

(b) How can these time frames be reduced to help get these projects out the door faster?

The County's multi- layered approach to address the permit timeframes and work as efficiently as possible to achieve permits such is:

- a) Apply for permit(s) review as early as possible in the design phase.

- b) Manage the permit coordination processes between the consultant engineers and the County third party code reviewers and minimize local permit process durations, to the extent possible. It is the County's experiences that the permit timeframes are not generally revised through the regulators, as most permits follow a defined process, such as a requirement for public notification periods or signature acknowledgements of adjacent property owners.
- c) State and Federal permitting processes. Select or prioritize retrofit project opportunities where environmental impacts can be minimized thru design. There has been some relief on smaller projects by qualifying for self-regulating permits (lessor area of impacts) at state or Federal levels, which could result in shorter permitting durations on a case by case basis.
- d) Environmental up-lift strategies to address MDE reviews and mitigation requirements. The County's restoration goals include evaluations of existing, older stormwater management facilities to determine if water quality attributes can be retrofitted into the facility. In projects of this nature, project design should quantify, to the extent practicable, the restoration or enhancement potential and the design objectives and approach, and document the expected environmental gains associated with the proposed restorative actions. The designs quantify and to describe as fully as practicable, the degree and nature of expected improvements in aquatic resource functions between the natural environment existing conditions and the proposed conditions with the restorative project. It is the County's goal that upon or resultant of County's project presentation to the MDE, that MDE could make a determination that compensatory mitigation is not required for TMDL-related stream restoration and enhancement activities that result in a net increase in aquatic resource functions at a project site. The following statement is an excerpt from MDE's draft Guidelines for the Permitting of MS4/Chesapeake Bay TMDL-related Restoration Projects:

“For situations where, expected conversions associated with a restoration project exceed the Corps Bay TMDL RGP conversion thresholds, MDE affirms that if the applicant is able to document (and MDE agrees) that there is a functional uplift to the aquatic resource between the existing and proposed conditions at the project site, that such projects will not require mitigation for conversions above the Corps conversion thresholds, PROVIDED that the applicant demonstrates (and MDE agrees) that there is no practicable option that achieves the same or substantially similar degree of functional uplift with a lesser degree of conversions. Absent such a demonstration, MDE may, on a case-by-case basis, require mitigation.”

Prince George's County will continue to evaluate our SWM retrofit project opportunities. On the basis of permit durations, including minimization of compensatory mitigation, cost effectiveness towards the reduction of the County's untreated impervious acreage baseline and improvement to the environmental function of these facilities.

(c) Describe how these time frames affect the overall project implementation time frames described in Question #1.

Time frame impacts depend on the specific project issues, project scheduled can be impacted from as little as 3 months to greater than 20 months – utility conflicts and unforeseen conditions.

(d) How can these time frames be reduced to help get these projects out the door faster?

Regulatory agencies could improve the certainty (specific in their requirements); an example would include retrofitting ponds that now require dam safety review protocols that delay original intent of the restoration project.

Permitting time frame examples

- DOE Permit: 10 working days
- Wetlands Permit: 5 months
- Upland stormwater projects require only Prince George County permits only. Therefore, the permitting is faster, than instream which requires state and core permits.
- Municipality Permit: 5 weeks to 3 months
- USACE Permit: at least 100 working days

7. What type of a project do you consider as “low-hanging fruit” ? What is your remaining capacity of available “low-hanging fruit” projects (estimate the number and impervious acre treatment total)? i.e.

Early in the inventory development processes, existing stormwater facilities such as dry or extended detention “ponds” were considered as “low hanging fruit”, as these BMPs have public dedicated easements or land ownership, as well as defined access, and an anticipated favorable cost/benefit due to larger contribution drainage areas. As the program has progressed, these pond sites are not as attractive candidates for retrofit due to permitting issues at the Local and State levels due to time and expense considerations to perform “dam breach” analysis, emergency action plans (EAPs), and the engineering efforts required to address Maryland State Code 378 for small pond approval for these retrofits.

These pond retrofits opportunities remain as the most significant portion of the existing inventory, under Column “D” in Table #1, response to Question #1. The IAT for Pond retrofits inventory is projected at 1001.2 acres for 28 projects under Column “D”.

Other considerations include, BMPs that treat significant impervious areas can be considered as “low-hanging fruit”. Since retrofitting such BMPs is cost effective and they could produce large treatment and therefore significant amount of credits at a lower price. Based on the County’s CWP’s research and the input from various stake holders, there are very few public stormwater ponds remaining to retrofit. Either the County or the CWP retrofitted them in the past several years.

Since MDE modified the stream restoration protocols, moving forward, stream restoration projects could be considered as cost-effective solutions to meet the TMDL requirements, and respond to community concerns due to severe erosion.

8. Complete the spreadsheet provided for restoration projects to be planned, designed, and/or constructed from 2020 through 2027. Include for each restoration project the estimated impervious acres treated, estimated total nitrogen (TN) reduction, and estimated total suspended sediments (TSS) reduction; any local total maximum daily load (TMDL) parameter (or other water quality objective) addressed; estimated cost; implementation status; and projected completion year. Include projects that will be in the planning or design phase but will not be completed until after 2025. This information should be more specific for the first reporting year but may be more generalized for the remaining reporting years.

A spreadsheet titled “Restoration Projects 2020-2027_4_3_19” is included with this submittal that lists:

- All restoration projects in their various phases,
- Implementation year,
- Estimated impervious acres treated by each project; and
- Implementation cost

A summary is provided in the table below.

Programs and Implementation Year	Impervious Acres Treated	Implementation Cost
CIP Total	2,223.06	\$88,287,595
2020	507.77	\$9,391,199
2021	475.56	\$11,472,396
2023	117.43	\$8,548,000
2024	194.08	\$8,125,000
2025	173.55	\$20,000,000
2026	133.71	\$4,921,000
Green vest Phase 1&2 Total		
2022	620.96	\$25,830,000
CWP Total	2,208.19	\$101,319,300
2019	363.97	\$21,519,576
2020	375.92	\$30,175,613
2021	1,468.30	\$49,624,111
Grand Total	4,431.25	\$189,606,895

9. Provide a copy of your 5-year CIP for restoration projects (2020-2027).

Sap Project #:	Budget Numbers (\$x1,000)					
	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
5.54.0012.2 - COE County Restoration	940	1,880	3,090	2,600	2,210	2,220
5.54.0005.2 – Flood Control & Drainage Improvement	6,467	7,927	6,523	4,076	4,415	4,240
5.54.0016.2 – Bear Branch Watershed	875	1,677	0	0	0	0
5.54.0019.2 – NPDES/MS4 Compliance and Restoration	2,472	28,693	30,572	35,135	19,115	9,275
Totals	33,254	40,177	40,185	41,811	25,740	15,735

10. Provide a copy of your operating budget for annual restoration projects (FY2019).

FY 2019 Operating Budget (Stormwater Fund) Recommended for Budget Approval by June 30, 2019	
Compensation	\$5,525,100
Fringe Benefits	\$4,210,200
Operating	\$48,663,100
Other	\$0
Capital Outlay	\$0
Recoveries	\$(1,436,700)
Totals	\$56,931,700

FY 2019 Operating Budget (Water Quality Fund) Recommended for Budget Approval by June 30, 2019	
Compensation	\$950,000
Fringe Benefits	\$229,900
Operating	\$42,979,000
Other	\$0
Capital Outlay	\$0
Recoveries	\$0
Totals	\$44,158,900

11. Provide a copy of your operating and maintenance budget for all BMPs

FY	FUND TYPE	BUDGET
2019	OPERATING	\$1,357,472
	O&M BASE & INCENTIVE	\$117,530
	O&M COSTS	\$1,208,260

	O&M MAINT MONITOR	\$31,682
	O&M PROGRAM COSTS	\$0
2019 Total		\$1,357,472

2020	OPERATING	\$3,536,263
	O&M BASE & INCENTIVE	\$326,105
	O&M COSTS	\$3,096,021
	O&M MAINT MONITOR	\$114,137
	O&M PROGRAM COSTS	\$0
2020 Total		\$3,536,263

2021	OPERATING	\$2,177,604
	O&M BASE & INCENTIVE	\$206,400
	O&M COSTS	\$1,898,964
	O&M MAINT MONITOR	\$72,240
	O&M PROGRAM COSTS	\$0
2021 Total		\$2,177,604

2022	OPERATING	\$3,600,121
	O&M BASE & INCENTIVE	\$303,975
	O&M COSTS	\$3,039,755
	O&M MAINT MONITOR	\$106,391
	O&M PROGRAM COSTS	\$150,000
2022 Total		\$3,600,121

2023	OPERATING	\$6,152,696
	O&M BASE & INCENTIVE	\$528,475
	O&M COSTS	\$5,284,755
	O&M MAINT MONITOR	\$184,966
	O&M PROGRAM COSTS	\$154,500
2023 Total		\$6,152,696

2024	OPERATING	\$4,555,846
	O&M BASE & INCENTIVE	\$387,375
	O&M COSTS	\$3,873,755
	O&M MAINT MONITOR	\$135,581
	O&M PROGRAM COSTS	\$159,135
2024 Total		\$4,555,846

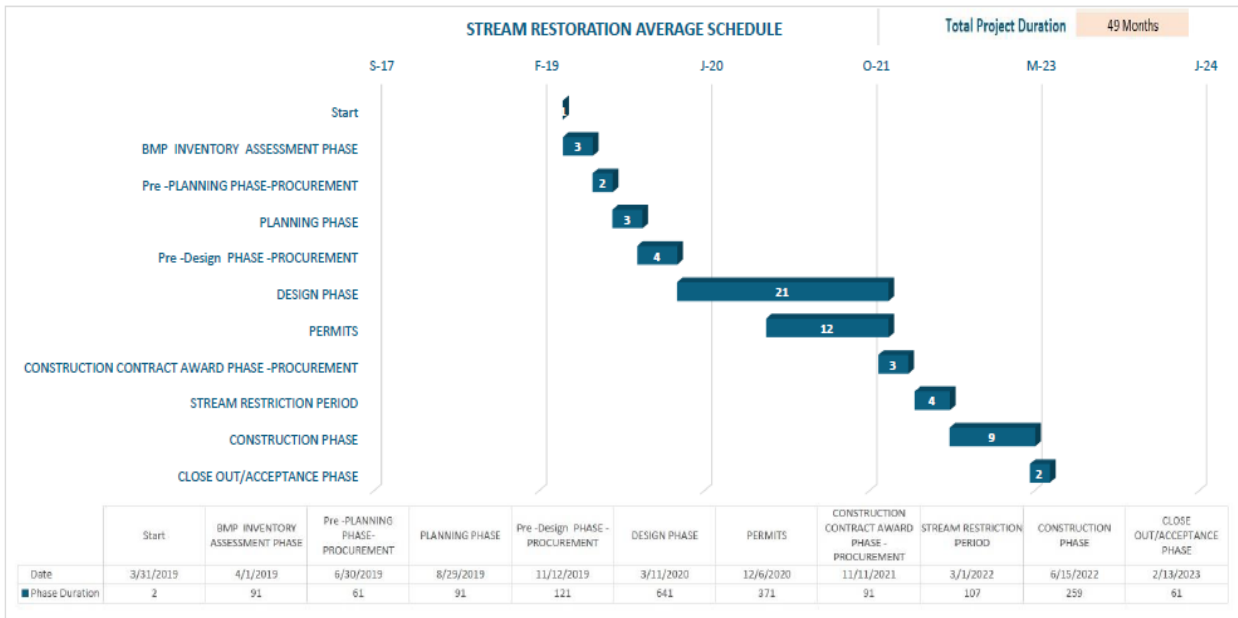
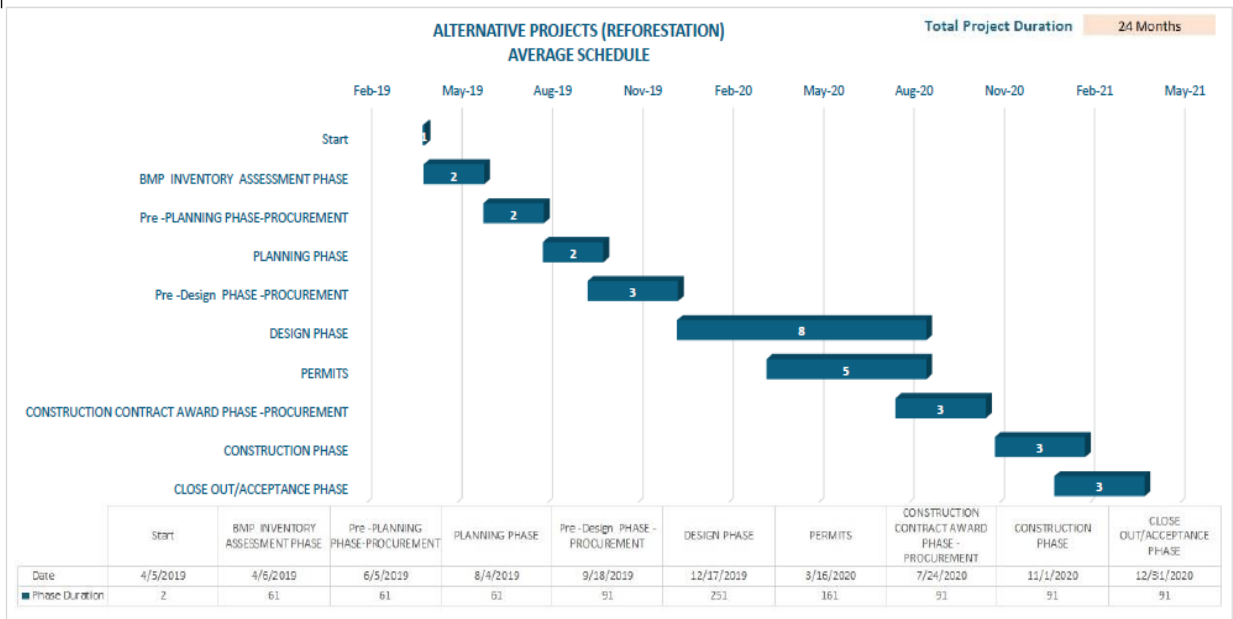
2025	OPERATING	\$3,613,174
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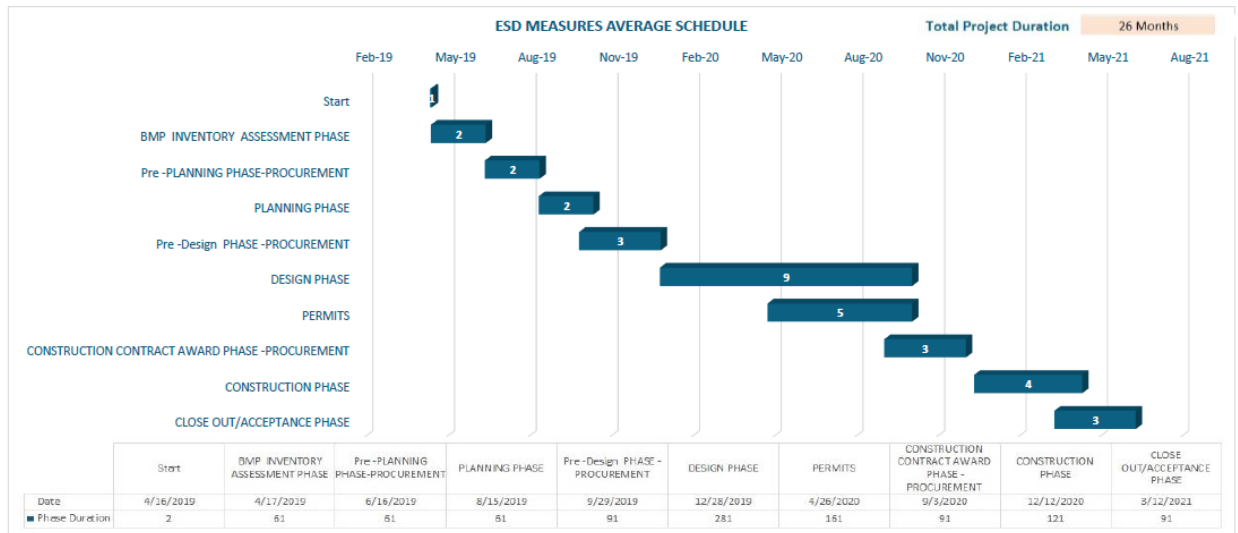
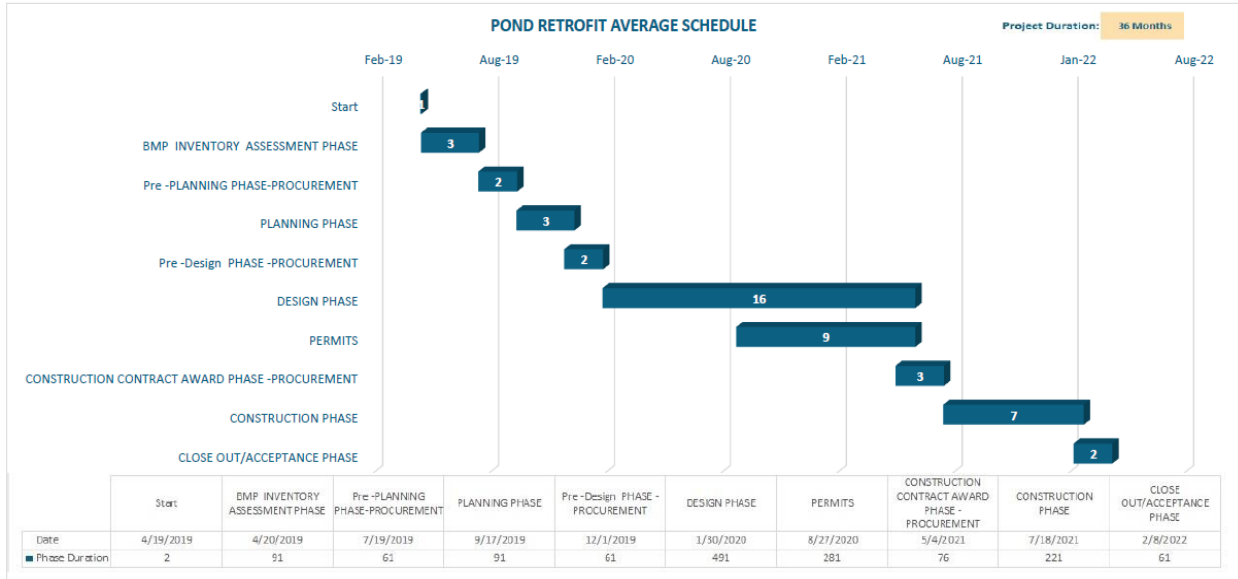
	O&M BASE & INCENTIVE	\$303,900
	O&M COSTS	\$3,039,000
	O&M MAINT MONITOR	\$106,365
	O&M PROGRAM COSTS	\$163,909
2025 Total		\$3,613,174

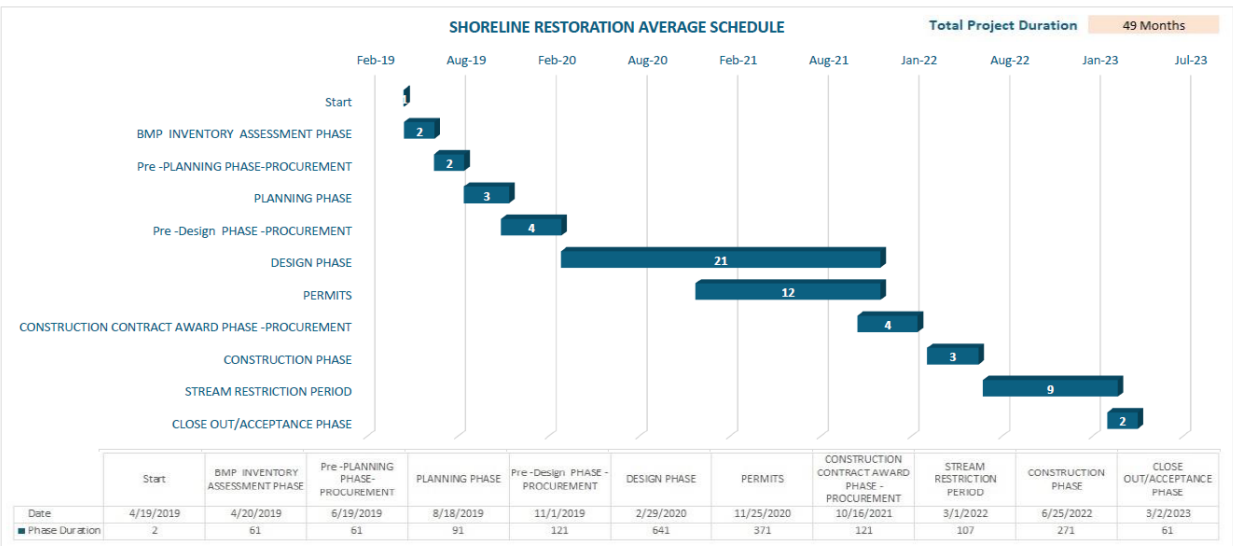
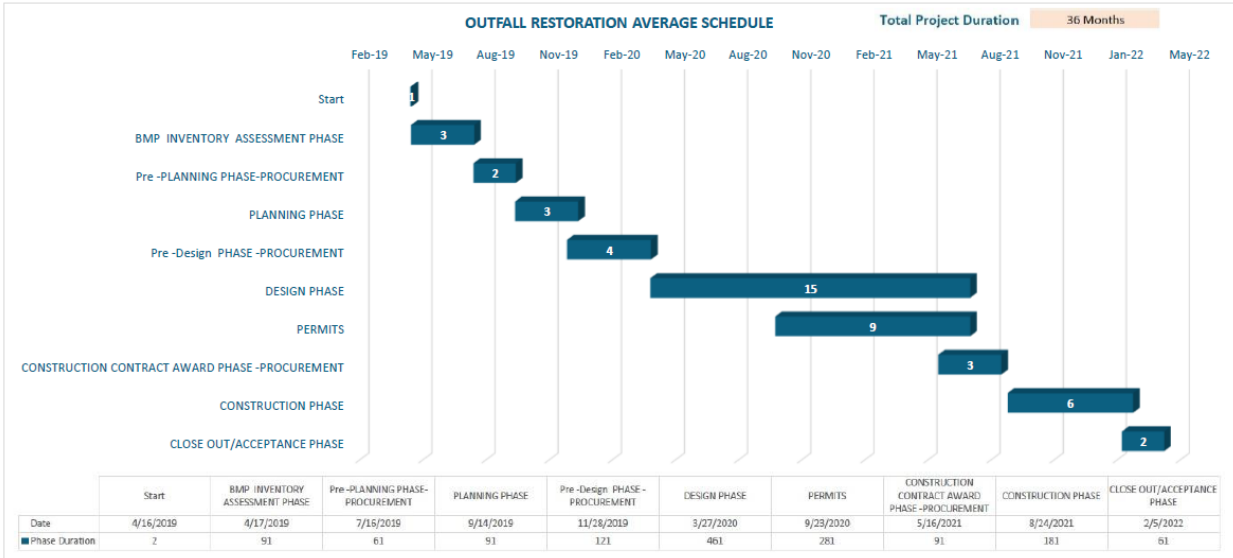
2026	OPERATING	\$4,917,666
	O&M BASE & INCENTIVE	\$418,400
	O&M COSTS	\$4,184,000
	O&M MAINT MONITOR	\$146,440
	O&M PROGRAM COSTS	\$168,826
2026 Total		\$4,917,666

2027	OPERATING	\$4,652,601
	O&M BASE & INCENTIVE	\$394,600
	O&M COSTS	\$3,946,000
	O&M MAINT MONITOR	\$138,110
	O&M PROGRAM COSTS	\$173,891
2027 Total		\$4,652,601

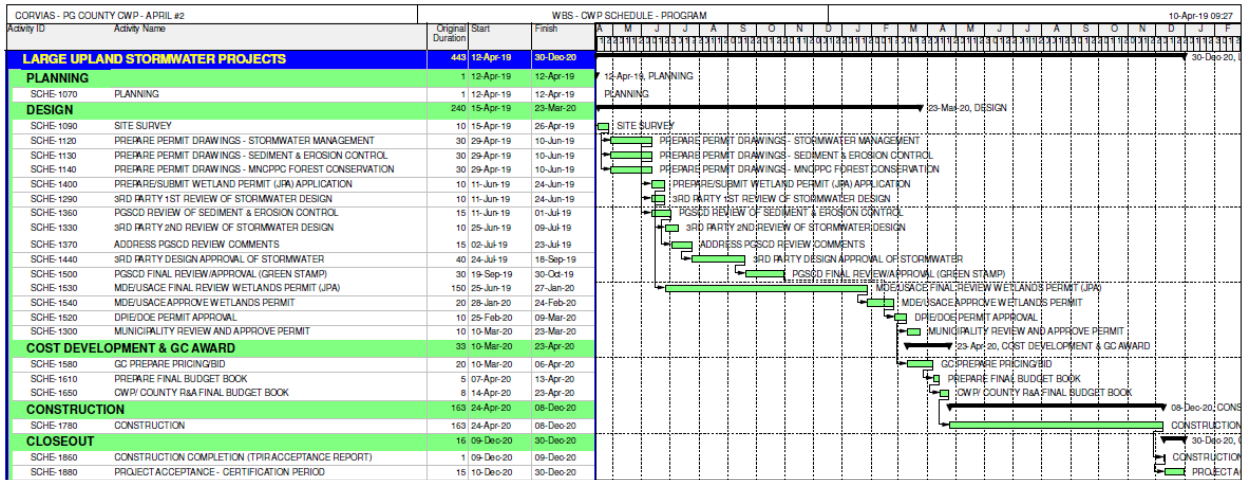
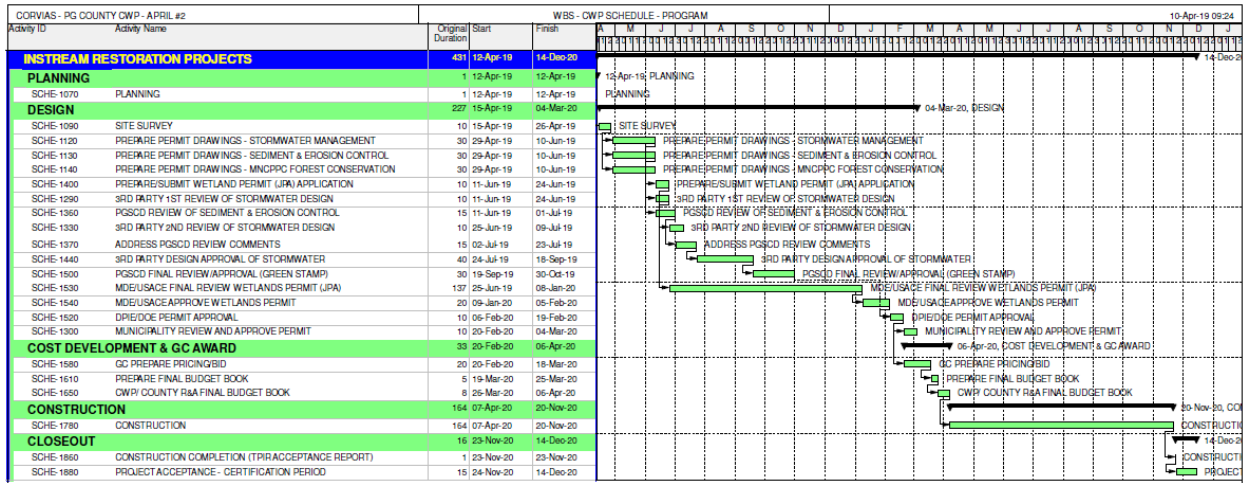
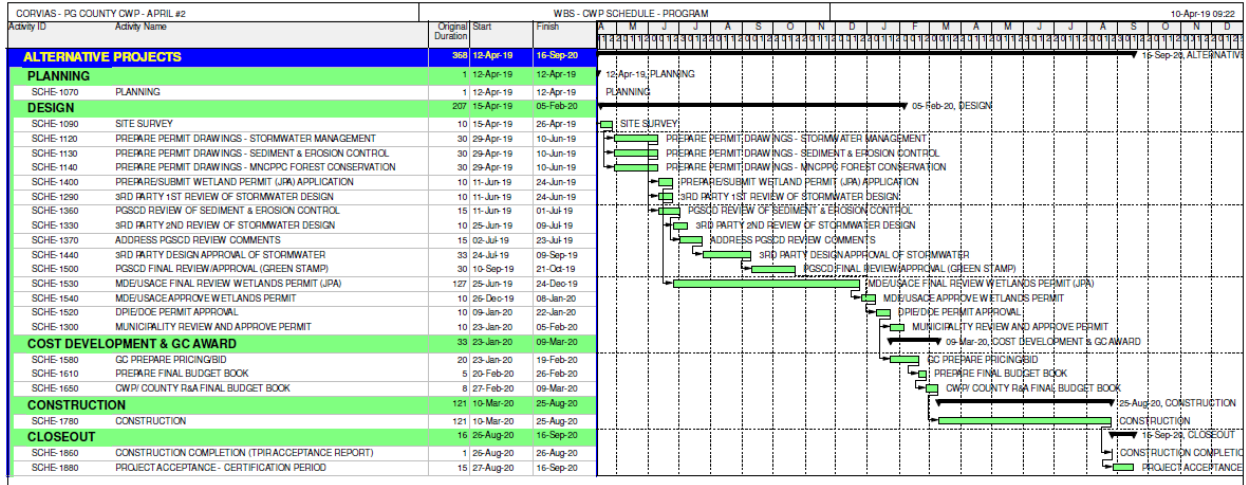
MEP – Analysis Gantt Charts – CIP Program







MEP – Analysis Gantt Charts – CWP Program





Angela D. Alsobrooks
County Executive

Prince George's County, Maryland



Financial Capacity Spreadsheet* Unofficial Data Estimates and Response 08/27/2019		
1	County/City Name	Prince George's County
2	Cost As A Percent Of Household Income	
2a	Median Household Income (MHI)	\$ 78,607
2b	Total Number Of Households In Jurisdiction	330,326
2c	Average Annual Cost For Public Stormwater Related Management Programs	\$ 116,985,404
2d	Annual Cost For Public Stormwater Related Management Programs Per Household	\$ 354.15
2e	% Of MHI Spent On Public Stormwater Related Management Programs	0.45%
2f	Total Annual Stormwater Remediation Fee Per Household	\$ 41.48
2g	% Of MHI Spent Annually On Stormwater Remediation Fee	0.05%
3	Cost Of Impervious Surface Restoration As A Percent Of Household Income	
3a	Total In Previous Permit Term Spent On The Impervious Surface Restoration Plan (ISRP)	\$ 143,468,537.77
3b	Average Annual Cost Of The ISRP During The Previous Permit Term	\$ 31,881,897.28
3c	Annual Cost Of The ISRP Per Household During The Previous Permit Term	\$ 96.52
3d	% Of MHI Spent On The ISRP During The Previous Permit Term	0.12%
3e	Total Projected Cost For Restoration Portfolio	\$ 227,567,442
3f	Projected Annual Cost For Restoration Portfolio	\$ 32,509,634.57
3g	Projected Annual Cost For Restoration Portfolio Per Household	\$ 98.42
3h	% Of MHI Spent On Projected Cost Of Restoration Portfolio	0.13%
4	Cost For Low-Income Residential Customers As A Percent Of Household Income	
4a	Percentage Of Households With Annual Income <\$25,000	11.70%
4b	% Of Income For Low Income Households Spent On Public Stormwater Related Management Programs	1.42%
4c	% Of Income For Low Income Households Spent On Stormwater Remediation Fees	0.17%
4d	% Of Income For Low Income Household Spent On The ISRP	0.39%
4e	% Of MHI For Low Income House Spent On Projected Cost Of Restoration Portfolio	0.39%
5	Key Socioeconomic Indicators	
5a	Percentage Unemployed	3.90%
5b	Median Household Income	\$ 78,607



Angela D. Alsobrooks
County Executive

Prince George's County, Maryland



Joseph P. Gill | Director

5c	Percent Of Individuals (All People) Below Poverty Level		8.60%
6	Financial Capacity Indicators		
6a	Debt Indicators	Bond Rating – GO ¹ Bonds	Aaa
6b		Bond Rating – Revenue Bonds	Aaa
6c		Net Debt As A % Of FMPV ²	2.10%
6d	Financial Management Indicators	Property Tax Revenues As % Of FMPV	0.95%
6e		Property Tax Revenue Collection Rate	99.58%

Notes:

1. GO = General Obligation
2. FMPV = Full Market Property Value



Angela D. Alsobrooks
County Executive

Restoration Projects To Be Planned, Designed, and/or Constructed from CY 2020 Through CY 2025 PRINCE GEORGE'S COUNTY, MARYLAND



Remaining Unmet Restoration Obligation from Previous Permit (Impervious Acres): 3,718

REST BMP ID	REST BMP TYPE ¹	BMP CLASS ¹	NUM BMP	IMP ACRES	TSS REDUCTION (lbs/year)	TN ⁶ REDUCTION (lbs/year)	IMPLEMENTATION COST	IMPLEMENTATION STATUS ²	PROJECTED IMPLEMENTATION YEAR	TMDL PARAMETER OR WQ OBJECTIVE ADDRESSED	GENERAL COMMENTS ⁷
Remaining Unmet Restoration Obligations from Previous Permit (FY 2014 - FY 2019)											
Annual Operational Programs (Unmet Obligations from Previous Permit)³⁻⁴											
Street Sweeping	VSS	A									
Catch Basin Cleaning	SDV	A									
Septic System Pumping		A									
Subtotal Operations ³			0	0			\$0				
Capital Projects (Unmet Obligations from Previous Permit Term)											
REST BMP ID	REST BMP TYPE ¹	BMP CLASS ¹	NUM	IMP ACRES	TSS	TN ⁶	IMPLEMENTATION COST	IMPLEMENTATION STATUS ²	PROJECTED	TMDL PARAMETER	GENERAL COMMENTS ⁷
PG17RST147180	PWET	S	1	27.35			\$953,397	D	2019		Water Quality Project
PG16RST101680	MMBR	E	1	3.33			\$1,181,256	UC	2019		Water Quality Project
PG17RST109070	MMBR	E	1	0.45			\$217,426	D	2019		Water Quality Project
PG17RST106790	PWET	S	1	16.93			\$1,410,790	UC	2019		Water Quality Project
PG17RST164410	PWET	S	1	1.87			\$85,441	D	2019		Water Quality Project
PG16RST115170	PWET	S	1	3.31			\$126,857	D	2019		Water Quality Project
PG16RST115180	PWET	S	1	1.12			\$112,376	D	2019		Water Quality Project
PG16RST102030	PWET	S	1	6.29			\$737,553	UC	2019		Water Quality Project
PG17RST106970	PWET	S	1	114.94			\$2,506,227	D	2019		Water Quality Project
PG17RST106780	PWET	S	1	25.29			\$1,659,785	UC	2019		Water Quality Project
PG17RST147280	PWET	S	1	9.39			\$626,780	D	2019		Water Quality Project
PG17RST108080	PWET	S	1	61.29			\$2,422,501	UC	2019		Water Quality Project
PG17RST101150	MMBR	E	1	1.69			\$1,123,195	UC	2019		Water Quality Project
PG18RST101190	FSND	S	1	0.73			\$468,547	UC	2019		Water Quality Project
PG17RST109000	MMBR	E	1	1.36			\$295,279	D	2019		Water Quality Project
PG17RST101220	MMBR	E	1	0.26			\$327,745	UC	2019		Water Quality Project
PG17RST101090	MMBR	E	1	0.88			\$556,750	UC	2019		Water Quality Project
PG17RST101110	MMBR	E	1	0.69			\$542,045	UC	2019		Water Quality Project
PG18RST101200	FBIO	S	1	0.62			\$544,941	UC	2019		Water Quality Project
PG18RST101110	MMBR	E	1	0.28			\$435,893	UC	2019		Water Quality Project
PG18RST101240	FBIO	S	1	1.32			\$763,344	UC	2019		Water Quality Project
PG18RST101230	FBIO	S	1	0.90			\$695,217	UC	2019		Water Quality Project
PG18RST101220	FBIO	S	1	0.20			\$237,883	UC	2019		Water Quality Project
PG18RST101180	FSND	S	1	0.72			\$497,330	UC	2019		Water Quality Project
PG18RST102000	MMBR	E	1	0.45			\$257,076	D	2019		Water Quality Project
PG18RST101140	FBIO	S	1	4.35			\$934,212	UC	2019		Water Quality Project
PG16RST100045	MMBR	E	1	1.30			\$545,320	D	2019		Water Quality Project
PG17RST107820	MMBR	E	1	0.45			\$193,285	D	2019		Water Quality Project
PG17RST121010	OUT	A	1	0.91			\$222,455	UC	2019		Water Quality Project
PG17RST107840	MMBR	E	1	0.45			\$281,643	D	2019		Water Quality Project
PG17RST161270	PWET	S	1	38.45			\$528,632	D	2019		Water Quality Project
PG16RST112990	MMBR	E	1	0.35			\$4,857	D	2019		Water Quality Project
PG16RST113050	MMBR	E	1	1.71			\$23,536	D	2019		Water Quality Project
PG17RST101200	PWET	S	1	0.16			\$341,285	D	2020		Water Quality Project
PG16RST104320	MSWB	E	1	0.34			\$448,285	D	2020		Water Quality Project
PG17RST101120	MMBR	E	1	0.16			\$209,852	D	2020		Water Quality Project
PG16RST107240	MMBR	E	1	0.45			\$347,912	D	2020		Water Quality Project
PG16RST107260	MMBR	E	1	0.30			\$205,139	D	2020		Water Quality Project
PG16RST106200	MMBR	E	1	0.53			\$334,949	D	2020		Water Quality Project



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REST BMP ID	REST BMP TYPE ¹	BMP CLASS ¹	NUM BMP	IMP ACRES	TSS REDUCTION (lbs/year)	TN ⁶ REDUCTION (lbs/year)	IMPLEMENTATION COST	IMPLEMENTATION STATUS ²	PROJECTED IMPLEMENTATION YEAR	TMDL PARAMETER OR WQ OBJECTIVE ADDRESSED	GENERAL COMMENTS ⁷
PG16RST107470	FBIO	S	1	0.68			\$335,026	D	2020		Water Quality Project
PG18RST101170	MMBR	E	1	0.45			\$222,369	D	2020		Water Quality Project
PG16RST107530	MMBR	E	1	0.85			\$393,785	D	2020		Water Quality Project
GREEN STREET 2	MMBR	E	1	0.45			\$198,807	D	2020		Water Quality Project
PG18RST102510	MMBR	E	1	0.45			\$185,553	D	2020		Water Quality Project
PG16RST107290	MMBR	E	1	0.45			\$185,553	D	2020		Water Quality Project
PG17RST109060	MMBR	E	1	0.45			\$185,553	D	2020		Water Quality Project
TBD	MMBR	E	1	0.45			\$185,553	D	2020		Water Quality Project
TBD	MMBR	E	1	0.45			\$185,553	D	2020		Water Quality Project
TBD	MMBR	E	1	0.45			\$185,553	D	2020		Water Quality Project
TBD	MMBR	E	1	0.45			\$185,553	D	2020		Water Quality Project
TBD	MMBR	E	1	0.45			\$185,553	D	2020		Water Quality Project
TBD	MMBR	E	1	0.45			\$185,553	D	2020		Water Quality Project
PG18RST102290	FBIO	S	1	0.55			\$204,142	D	2020		Water Quality Project
PG18RST102190	MMBR	E	1	0.40			\$147,250	D	2020		Water Quality Project
PG18RST101150	MMBR	E	1	0.27			\$100,398	D	2020		Water Quality Project
PG18RST102340	FBIO	S	1	1.58			\$582,306	D	2020		Water Quality Project
PG18RST102240	MMBR	E	1	0.15			\$56,892	P	2020		Water Quality Project
PG18RST102260	MMBR	E	1	0.38			\$140,557	P	2020		Water Quality Project
PG18RST101250	MMBR	E	1	0.27			\$100,398	P	2020		Water Quality Project
PG18RST102310	FBIO	S	1	0.55			\$204,142	P	2020		Water Quality Project
PG18RST102350	MMBR	E	1	0.30			\$110,437	D	2020		Water Quality Project
PG18RST102200	MMBR	E	1	0.30			\$110,437	D	2020		Water Quality Project
PG18RST102280	FBIO	S	1	2.32			\$856,726	D	2020		Water Quality Project
PG18RST102300	FBIO	S	1	0.90			\$331,312	P	2020		Water Quality Project
PG18RST101210	MMBR	E	1	0.27			\$100,398	P	2020		Water Quality Project
PG18RST102230	FBIO	S	1	0.50			\$184,062	P	2020		Water Quality Project
PG18RST102250	FBIO	S	1	0.82			\$301,193	P	2020		Water Quality Project
PG18RST102270	FBIO	S	1	0.73			\$271,073	P	2020		Water Quality Project
PG18RST102060	FBIO	S	1	1.36			\$334,231	D	2020		Water Quality Project
PG18RST102070	FBIO	S	1	1.36			\$334,231	D	2020		Water Quality Project
PG18RST102090	MMBR	E	1	1.36			\$334,231	D	2020		Water Quality Project
PG18RST102100	FBIO	S	1	1.36			\$334,231	D	2020		Water Quality Project
PG18RST101050	MSGW	E	1	1.69			\$394,670	D	2020		Water Quality Project
PG18RST102080	FBIO	S	1	1.36			\$187,762	D	2020		Water Quality Project
PG18RST147200	PWET	S	1	2.31			\$293,020	D	2020		Water Quality Project
PG18RST102030	PWET	S	1	3.92			\$472,194	D	2020		Water Quality Project
PG18RST147240	PWET	S	1	2.76			\$296,333	D	2020		Water Quality Project
PG18RST102010	MMBR	E	1	0.45			\$41,661	D	2020		Water Quality Project
PG18RST147190	PWET	S	1	7.75			\$657,565	D	2020		Water Quality Project
PG18RST147220	PWET	S	1	4.94			\$405,898	D	2020		Water Quality Project
PG18RST147230	PWET	S	1	5.01			\$410,316	D	2020		Water Quality Project
PG18RST147210	PWET	S	1	3.89			\$304,550	D	2020		Water Quality Project
PG18RST147260	PWET	S	1	6.30			\$489,286	D	2020		Water Quality Project
PG18RST147280	PWET	S	1	8.21			\$605,809	D	2020		Water Quality Project
PG18RST192620	STRE	A	1	47.10			\$2,894,631	D	2020		Water Quality Project
PG17RST121000	OUT	A	1	0.91			\$55,666	D	2020		Water Quality Project
PG17RST121020	OUT	A	1	0.91			\$55,666	D	2020		Water Quality Project
PG18RST192620	STRE	A	1	47.10			\$2,894,631	P	2020		Water Quality Project
PG17RST131000	PWET	S	1	11.96			\$725,752	D	2020		Water Quality Project
PG18RST102040	PWET	S	1	9.06			\$547,299	D	2020		Water Quality Project
PG18RST147270	PWET	S	1	19.60			\$1,147,249	D	2020		Water Quality Project



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PG18RST102800	PWET	S	1	48.99			\$2,724,214	D	2020		Water Quality Project
PG18RST102810	PWET	S	1	47.18			\$2,623,485	D	2020		Water Quality Project
PG17RST106870	PWET	S	1	34.46			\$1,916,368	D	2020		Water Quality Project
PG18RST101400	PWET	S	1	4.53			\$251,822	D	2021		Water Quality Project
PG18RST102210	MMBR	E	1	0.33			\$18,131	P	2021		Water Quality Project
PG17RST107570	PWET	S	1	25.36			\$1,410,205	D	2021		Water Quality Project
PG18RST102790	PWET	S	1	51.29			\$2,852,139	D	2021		Water Quality Project
PG18RST102820	PWET	S	1	42.44			\$2,360,078	D	2021		Water Quality Project
PG18RST102640	PWET	S	1	27.22			\$1,513,452	P	2021		Water Quality Project
PG18RST101490	PWET	S	1	35.32			\$1,956,144	D	2021		Water Quality Project
PG18RST102560	STRE	A	1	18.11			\$927,766	D	2021		Water Quality Project
PG18RST172570	STRE	A	1	18.11			\$927,766	D	2021		Water Quality Project
PG18RST172580	STRE	A	1	18.11			\$927,766	D	2021		Water Quality Project
PG18RST172590	STRE	A	1	18.11			\$927,766	D	2021		Water Quality Project
PG18RST172600	STRE	A	1	18.11			\$927,766	D	2021		Water Quality Project
PG18RST192610	STRE	A	1	25.36			\$1,298,873	D	2021		Water Quality Project
PG18RST172570	STRE	A	1	18.11			\$927,766	D	2021		Water Quality Project
PG18RST172580	STRE	A	1	18.11			\$927,766	D	2021		Water Quality Project
PG18RST172590	STRE	A	1	18.11			\$927,766	D	2021		Water Quality Project
PG18RST172600	STRE	A	1	18.11			\$927,766	D	2021		Water Quality Project
PG18RST192610	STRE	A	1	25.36			\$1,298,873	P	2021		Water Quality Project
PG18RST102050	PWET	S	1	9.06			\$457,173	D	2021		Water Quality Project
PG18RST101500	PWET	S	1	14.78			\$703,924	D	2021		Water Quality Project
PG16RST103530	ITRN	S	1	14.96			\$711,876	D	2021		Water Quality Project
PG18RST101000	PWET	S	1	72.46			\$3,392,974	D	2021		Water Quality Project
PG18RST101450	PWET	S	1	31.38			\$1,430,306	D	2021		Water Quality Project
PG18RST102780	PWET	S	1	64.51			\$2,849,568	D	2021		Water Quality Project
PG16RST109120	PWET	S	1	51.10			\$2,220,104	D	2021		Water Quality Project
PG18RST101420	PWET	S	1	16.59			\$703,924	D	2021		Water Quality Project
PG18RST101410	PWET	S	1	16.77			\$707,591	D	2021		Water Quality Project
PG18RST102770	PWET	S	1	80.41			\$3,313,451	D	2021		Water Quality Project
PG18RST101470	PWET	S	1	17.49			\$709,071	D	2021		Water Quality Project
PG18RST102020	PWET	S	1	81.51			\$2,866,135	D	2021		Water Quality Project
PG18RST147250	PWET	S	1	9.92			\$348,686	D	2021		Water Quality Project
PG17RST106930	PWET	S	1	18.19			\$562,294	UC	2021		Water Quality Project
PG16RST102640	PWET	S	1	52.78			\$1,503,521	D	2021		Water Quality Project
PG17RST101240	PWET	S	1	95.73			\$2,636,627	D	2021		Water Quality Project
PG18RST101460	PWET	S	1	34.95			\$732,885	D	2021		Water Quality Project
PG17RST171000	STRE	A	1	39.57			\$544,074	D	2021		Water Quality Project
PG17RST171010	STRE	A	1	31.70			\$435,857	D	2021		Water Quality Project
PG17RST161260	PWET	S	1	1.81			\$24,906	D	2021		Water Quality Project
PG16RST114180	PWET	S	1	29.04			\$399,245	D	2021		Water Quality Project
PG18RST192630	STRE	A	1	54.34			\$662,690	P	2021		Water Quality Project
PG18RST102550	STRE	A	1	45.29			\$198,807	D	2021		Water Quality Project
PG18RST102550	STRE	A	1	45.29			\$198,807	D	2021		Water Quality Project
PG17ALN000032	STRE	A	1	11.11			\$801,600	Under Construction	2020		Water Quality Project
PG17RST000105	PWET	S	1	9.92			\$548,233	Under Construction	2020		Water Quality Project
PG17RST000099	PWET	S	1	37.08			\$727,367	Design	2020		Water Quality Project
PG17RST000388	PWET	S	1	7.49			\$293,000	Under Construction	2020		Water Quality Project
PG17RST000107	PWET	S	1	10.66			\$549,504	Design	2020		Water Quality Project
PG17ALN000036	SHST	A	1	28.20			\$971,000	Under Construction	2020		Water Quality Project
PG17RST000127	PWET	S	1	62.09			\$1,304,000	Design	2020		Water Quality Project
PG18ALN171001	STRE	A	1	12.83			\$615,687	Design	2020		Water Quality Project



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TBD	STRE			41.12			\$1,135,992	Under Construction	2020		Water Quality Project
PG19RST000009	MMBR	E		0.33			\$88,779	Under Construction	2020		Water Quality Project
PG19RST000004	MMBR	E		0.40			\$88,779	Under Construction	2020		Water Quality Project
PG19RST000010	MMBR	E		0.29			\$88,779	Under Construction	2020		Water Quality Project
PG19RST000006	MMBR	E		0.32			\$88,779	Under Construction	2020		Water Quality Project
PG19RST000005	MMBR	E		0.15			\$88,779	Under Construction	2020		Water Quality Project
PG19RST000007	MMBR	E		0.06			\$88,779	Under Construction	2020		Water Quality Project
PG19RST000008	APRP	E		0.05			\$88,779	Under Construction	2020		Water Quality Project
PG19RST000014	MMBR	A		0.62			\$147,000	Under Construction	2020		Water Quality Project
PG18ALN124563	OUT	A	1	18.34			\$577,030	Design	2020		Water Quality Project
PG18ALN124584	OUT	A	1	20.22			\$577,030	Design	2020		Water Quality Project
PG18ALN124585	OUT	A	1	5.50			\$577,030	Design	2020		Water Quality Project
TBD			1	1.41			\$294,454	Under Construction	2020		Water Quality Project
PG17RST000095	MRNG	E	1	2.00			\$75,000	Under Construction	2021		Water Quality Project
PG19RST000002	MMBR	E		0.43			\$106,899	Under Construction	2021		Water Quality Project
PG19RST000003	MMBR	E		0.28			\$106,899	Under Construction	2021		Water Quality Project
PG19RST000016	MMBR	E		0.28			\$106,899	Under Construction	2021		Water Quality Project
PG19RST000001	MMBR	E		0.26			\$106,899	Under Construction	2021		Water Quality Project
PG17RST000096	PWET	S	1	45.00			\$602,000	Design	2021		Water Quality Project
PG17ALN000039	SHST	A	1	32.00			\$568,000	Design	2021		Water Quality Project
PG19ALN000133	OUT	A	1	2.00			\$662,602	Design	2021		Water Quality Project
PG19ALN000132	OUT	A	1	6.00			\$662,602	Design	2021		Water Quality Project
PG19ALN000134	OUT	A	1	7.95			\$662,602	Design	2021		Water Quality Project
PG17ALN000044	STRE	A	1	9.20			\$1,521,000	Design	2022		Water Quality Project
PG17ALN000012	STRE	A	1	75.00			\$2,294,873	Design	2022		Water Quality Project
PG17ALN000035	SHST	A	1	14.00			\$1,500,000	Design	2022		Water Quality Project
PG17RST000129	PWED	S	1	44.00			\$1,128,432	Design	2022		Water Quality Project
PG17RST000387	WSHW	S	1	61.07			\$1,372,000	Design	2022		Water Quality Project
PG17RST000130	PWET	S	1	58.00			\$615,000	Design	2022		Water Quality Project
PG17RST000131	PWET	S	1	57.14			\$1,302,265	Design	2022		Water Quality Project
PG17RST000132	PWED	S	1	26.00			\$602,000	Design	2022		Water Quality Project
PG17RST000309	PWET	S	1	128.00			\$1,800,000	Design	2022		Water Quality Project
PG17ALN000050	STRE	A	1	1.10			\$760,000	Design	2022		Water Quality Project
PG17ALN000125	OUT	A	1	1.10			\$250,000	Design	2022		Water Quality Project
PG17ALN000123	OUT	A	1	1.10			\$250,000	Design	2022		Water Quality Project
PG17ALN000124	OUT	A	1	1.10			\$250,000	Design	2022		Water Quality Project
PG17ALN000126	OUT	A	1	1.10			\$250,000	Design	2022		Water Quality Project
PG19RST000011	PWET	A		11.72			\$638,905	Design	2022		Water Quality Project
PG19RST000012	PWET	A		32.74			\$1,112,444	Design	2022		Water Quality Project
PG95RST000064	PWET	A		33.00			\$580,000	Design	2022		Water Quality Project
PG18ALN124621	SHST	A	1	68.00			\$1,900,000	Design	2022		Water Quality Project
PG19RST000015	PWET	A		10.00			\$510,000	Design	2022		Water Quality Project
PG19ALN000128	STRE	A	1	20.00			\$1,500,000	Design	2022		Water Quality Project
PG17BDA002578	PWET	S	1	3.70			\$250,000	Design	2022		Water Quality Project
PG17BDA002579	PWET	S	1	4.00			\$321,000	Design	2022		Water Quality Project
TBD	OUT	A	1	2.20			\$774,946	Design	2022		Water Quality Project
TBD	OUT	A	1	2.00			\$774,946	Design	2022		Water Quality Project
TBD	OUT	A	1	2.00			\$774,946	Design	2022		Water Quality Project
TBD	OUT	A	1	10.00			\$1,069,946	Design	2022		Water Quality Project
TBD	OUT	A	1	10.00			\$1,069,946	Design	2022		Water Quality Project
PG19RST000017	PWET	A		23.06			\$1,150,711	Design	2023		Water Quality Project
PG18ALN124573	STRE	A	1	74.67			\$615,000	Design	2023		Water Quality Project
PG18ALN124611	STRE	A	1	46.83			\$0	Design	2023		IMPLEMENTATION COST PROVIDED WITH OTHER LINE ENTRIES FOR THIS BMP



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PG18ALN124608	STRE	A	1	43.13			\$615,000	Design	2023		Water Quality Project
PG18ALN124565	STRE	A	1	42.95			\$615,000	Design	2023		Water Quality Project
PG18ALN124592	STRE	A	1	27.08			\$615,000	Design	2023		Water Quality Project
PG18ALN124575	STRE	A	1	25.01			\$615,000	Design	2023		Water Quality Project
PG18ALN124593	STRE	A	1	23.73			\$615,000	Design	2023		Water Quality Project
PG18ALN124603	STRE	A	1	21.52			\$615,000	Design	2023		Water Quality Project
PG18ALN124590	STRE	A	1	18.91			\$615,000	Design	2023		Water Quality Project
PG18ALN124572	STRE	A	1	15.79			\$615,000	Design	2023		Water Quality Project
PG18ALN124570	STRE	A	1	15.05			\$615,000	Design	2023		Water Quality Project
PG18ALN124597	STRE	A	1	14.55			\$615,000	Design	2023		Water Quality Project
PG18ALN124574	STRE	A	1	14.35			\$615,000	Design	2023		Water Quality Project
PG18ALN124594	STRE	A	1	13.65			\$615,000	Design	2023		Water Quality Project
PG18ALN124600	STRE	A	1	13.61			\$615,000	Design	2023		Water Quality Project
PG18ALN124582	STRE	A	1	13.08			\$615,000	Design	2023		Water Quality Project
PG18ALN124602	STRE	A	1	11.31			\$615,000	Design	2023		Water Quality Project
PG18ALN124605	STRE	A	1	11.06			\$615,000	Design	2023		Water Quality Project
PG18ALN124567	STRE	A	1	10.71			\$615,000	Design	2023		Water Quality Project
PG18ALN124618	STRE	A	1	9.57			\$0	Design	2023		IMPLEMENTATION COST PROVIDED WITH OTHER LINE ENTRIES FOR THIS BMP
PG18ALN124581	STRE	A	1	9.43			\$615,000	Design	2023		Water Quality Project
PG18ALN124589	STRE	A	1	8.32			\$615,000	Design	2023		Water Quality Project
PG18ALN124607	STRE	A	1	8.21			\$615,000	Design	2023		Water Quality Project
PG18ALN124564	STRE	A	1	7.69			\$615,000	Design	2023		Water Quality Project
PG18ALN124587	STRE	A	1	7.68			\$615,000	Design	2023		Water Quality Project
PG18ALN124588	STRE	A	1	7.68			\$615,000	Design	2023		Water Quality Project
PG18ALN124566	STRE	A	1	7.33			\$615,000	Design	2023		Water Quality Project
PG18ALN124615	STRE	A	1	7.23			\$0	Design	2023		IMPLEMENTATION COST PROVIDED WITH OTHER LINE ENTRIES FOR THIS BMP
PG18ALN124568	STRE	A	1	6.86			\$615,000	Design	2023		Water Quality Project
PG18ALN124620	STRE	A	1	6.54			\$0	Design	2023		IMPLEMENTATION COST PROVIDED WITH OTHER LINE ENTRIES FOR THIS BMP
PG18ALN124617	STRE	A	1	6.06			\$0	Design	2023		IMPLEMENTATION COST PROVIDED WITH OTHER LINE ENTRIES FOR THIS BMP
PG18ALN124619	STRE	A	1	5.93			\$0	Design	2023		IMPLEMENTATION COST PROVIDED WITH OTHER LINE ENTRIES FOR THIS BMP
PG18ALN124571	STRE	A	1	5.88			\$615,000	Design	2023		Water Quality Project
PG18ALN124606	STRE	A	1	5.84			\$615,000	Design	2023		Water Quality Project
PG18ALN124596	STRE	A	1	5.81			\$615,000	Design	2023		Water Quality Project
PG18ALN124595	STRE	A	1	5.00			\$615,000	Design	2023		Water Quality Project
PG18ALN124576	STRE	A	1	4.63			\$615,000	Design	2023		Water Quality Project
PG16ALN000094	STRE	A	1	4.00			\$0	Design	2023		IMPLEMENTATION COST PROVIDED WITH OTHER LINE ENTRIES FOR THIS BMP
PG18ALN124569	STRE	A	1	3.63			\$615,000	Design	2023		Water Quality Project
PG18ALN124580	STRE	A	1	3.53			\$615,000	Design	2023		Water Quality Project
PG18ALN124610	STRE	A	1	3.27			\$615,000	Design	2023		Water Quality Project
PG18ALN124578	STRE	A	1	3.18			\$615,000	Design	2023		Water Quality Project
PG18ALN124583	STRE	A	1	3.15			\$615,000	Design	2023		Water Quality Project
PG18ALN124579	STRE	A	1	3.13			\$615,000	Design	2023		Water Quality Project
PG18ALN124598	STRE	A	1	2.43			\$615,000	Design	2023		Water Quality Project
PG18ALN124616	STRE	A	1	2.29			\$0	Design	2023		IMPLEMENTATION COST PROVIDED WITH OTHER LINE ENTRIES FOR THIS BMP
PG18ALN124577	STRE	A	1	1.99			\$615,000	Design	2023		Water Quality Project
PG18ALN124613	STRE	A	1	1.69			\$0	Design	2023		IMPLEMENTATION COST PROVIDED WITH OTHER LINE ENTRIES FOR THIS BMP
PG18ALN124599	STRE	A	1	1.53			\$615,000	Design	2023		Water Quality Project
PG18ALN124612	STRE	A	1	1.43			\$0	Design	2023		IMPLEMENTATION COST PROVIDED WITH OTHER LINE ENTRIES FOR THIS BMP
PG18ALN124614	STRE	A	1	1.17			\$0	Design	2023		IMPLEMENTATION COST PROVIDED WITH OTHER LINE ENTRIES FOR THIS BMP
PG18ALN124604	STRE	A	1	0.97			\$615,000	Design	2023		Water Quality Project
PG18ALN124601	STRE	A	1	0.89			\$615,000	Design	2023		Water Quality Project
PG18ALN124586	OUT	A	1	4.65			\$213,000	Design	2023		Water Quality Project
PG19ALN000140	STRE	A	1	17.20			\$1,000,000	Planning	2025		Water Quality Project



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Restoration Projects To Be Planned, Designed, and/or Constructed from CY 2020 Through CY 2025 PRINCE GEORGE'S COUNTY, MARYLAND



REST BMP ID	REST BMP TYPE ¹	BMP CLASS ¹	NUM BMP	IMP ACRES	TSS REDUCTION (lbs/year)	TN ⁶ REDUCTION (lbs/year)	IMPLEMENTATION COST	IMPLEMENTATION STATUS ²	PROJECTED IMPLEMENTATION YEAR	TMDL PARAMETER OR WQ OBJECTIVE ADDRESSED	GENERAL COMMENTS ⁷
Subtotal Capital			233	3,718			\$168,086,442				
Other (Unmet Obligations from Previous Permit Term)											
Subtotal Other			0	0			\$0				
Total of Remaining Obligations from The Previous Permit			233	3,718			\$168,086,442				
Obligations from Previous Permit That Must Be Continued (309 acres)											
Annual Operational Programs Required to be Maintained from Previous Permit^{3,4}											
Street Sweeping	VSS	A			476,520	3,971	\$1,200,000	Planning	2019		
Street Sweeping	VSS	A			476,520	3,971	\$1,200,000	Planning	2020		
Street Sweeping	VSS	A			476,520	3,971	\$1,200,000	Planning	2021		
Street Sweeping	VSS	A			476,520	3,971	\$1,200,000	Planning	2022		
Street Sweeping	VSS	A			476,520	3,971	\$1,200,000	Planning	2023		
Street Sweeping	VSS	A			476,520	3,971	\$1,200,000	Planning	2024		
Storm Drain Vacuuming	SDV	A			30,795	257	\$600,000	Planning	2019		
Storm Drain Vacuuming	SDV	A			30,795	257	\$600,000	Planning	2020		
Storm Drain Vacuuming	SDV	A			30,795	257	\$600,000	Planning	2021		
Storm Drain Vacuuming	SDV	A			30,795	257	\$600,000	Planning	2022		
Storm Drain Vacuuming	SDV	A			30,795	257	\$600,000	Planning	2023		
Storm Drain Vacuuming	SDV	A			30,795	257	\$600,000	Planning	2024		
Subtotal Operations ³			0		3,043,890	25,366	\$10,800,000				
Capital Projects (Proposed to Replace Annual Obligations)											
PG17RST000094	MMBR	E	1	0.10			\$250,000	Design	2024		Permanent BMP is replacing annual BMPs.
PG18RST000413	MMBR	E	1	0.03			\$250,000	Design	2024		Permanent BMP is replacing annual BMPs.
PG18RST000412	MMBR	E	1	0.27			\$250,000	Design	2024		Permanent BMP is replacing annual BMPs.
PG17ALN000127	STRE	S	1	70.00			\$8,000,000	Design	2024		CIP incorporates Flood conveyance and ISR benefits and costs
PG17RST000128	PWET	S	1	37.00			\$1,715,000	Design	2024		Permanent BMP is replacing annual BMPs.
PG19RST000013	MSGW	E	1	30.45			\$1,400,000	Planning	2024		Permanent BMP is replacing annual BMPs.
PG17RST000116	PWET	S	1	104.00			\$23,500,000	Planning	2025		CIP incorporates Flood control and ISR benefits and costs
PG18RST181066	PWED	S	1	65.00			\$23,500,000	Planning	2025		CIP incorporates Flood and ISR control benefits and costs
PG17RST000133	PWET	S	1	43.00			\$616,000	Design	2025		Permanent BMP is replacing annual BMPs.
PG18ALN000129	STRE	A	1	0.00			\$0	Planning	2025		Permanent BMP is replacing annual BMPs.
Subtotal Capital			0	349.85	0	0	\$59,481,000				
Other (Proposed to Replace Annual Obligations)											
Nutrient Trading				3,718	3,197,073	28,588	TBD	Planning	2019		As notified to MDE in our previous communication that an agreement with WSSC is currently under progress.
Nutrient Trading				3,371	2,898,778	25,920	TBD	Planning	2020		
Nutrient Trading				2,779	2,390,116	21,372	TBD	Planning	2021		
Nutrient Trading				1,353	1,163,699	10,406	TBD	Planning	2022		
Nutrient Trading				666	572,647	5,121	TBD	Planning	2023		
Nutrient Trading				17	14,792	132	TBD	Planning	2024		
Nutrient Trading				0	0	0	TBD	Planning	2025		
Subtotal Other			0	3718	10237104	91539	\$0				



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Restoration Projects To Be Planned, Designed, and/or Constructed from CY 2020 Through CY 2025 PRINCE GEORGE'S COUNTY, MARYLAND



REST BMP ID	REST BMP TYPE ¹	BMP CLASS ¹	NUM BMP	IMP ACRES	TSS REDUCTION (lbs/year)	TN ⁶ REDUCTION (lbs/year)	IMPLEMENTATION COST	IMPLEMENTATION STATUS ²	PROJECTED IMPLEMENTATION YEAR	TMDL PARAMETER OR WQ OBJECTIVE ADDRESSED	GENERAL COMMENTS ⁷
Total of Obligations from Previous Permit That Must Be Continued			0	3,718	13,280,994.4	116,904.5	\$238,367,442				
Proposed Restoration for the Next Permit											
Operational Programs⁴											
Street Sweeping		A									
		A									
		A									
Catch Basin Cleaning		A									
		A									
		A									
Septic System Pumping		A									
		A									
		A									
Subtotal Operations ⁵			0		0	0	\$0				
Capital Projects											
Subtotal Capital			0	0.00	0.00	0.00	\$0				
Other											
Lake Arbor Pond Retrofit							\$6,250,000	P	2025		CIP includes Dam Safety benefits and Operational Repairs
Anacostia Watershed Restoration/USACE							\$12,940,000	P	2025		CIP includes co-benefits of aquatic habitat improvements
Allison Street Flood Control Project							\$11,759,880	Under Construction	2023		SWM funding used for this CIP which includes Flood control benefits and infrastructure costs. Cost is construction award only, excluding design or construction phase services costs.
BMP Maintenance							\$1,357,472	P	2019		Maintenance for SWM
BMP Maintenance							\$3,712,776	P	2020		Maintenance for SWM
BMP Maintenance							\$2,463,038	P	2021		Maintenance for SWM
BMP Maintenance							\$2,919,263	P	2022		Maintenance for SWM
BMP Maintenance							\$4,038,573	P	2023		Maintenance for SWM
BMP Maintenance							\$4,927,445	P	2024		Maintenance for SWM
DPWT SWM							\$19,364,000	P	2019		Major Reconstruction and Storm Water Management
DPWT SWM							\$23,971,000	P	2020		Major Reconstruction and Storm Water Management
DPWT SWM							\$22,700,000	P	2021		Major Reconstruction and Storm Water Management
DPWT SWM							\$23,800,000	P	2022		Major Reconstruction and Storm Water Management
DPWT SWM							\$22,700,000	P	2023		Major Reconstruction and Storm Water Management
DPWT SWM							\$22,700,000	P	2024		Major Reconstruction and Storm Water Management
DPWT SWM							\$22,700,000	P	2025		Major Reconstruction and Storm Water Management
Subtotal Other			0	0	0	0	\$208,303,447				
Total for Next Permit			0	0.0	0.0	0.0	\$208,303,447				
Total for Remaining Obligations from The Previous Permit and Proposed Activities for the Next Permit. (Nutrient Trade Values exceeds deficit equivalent credit)			0.0	3,718	13,280,994.4	116,904.5	\$446,670,889				

Check with MDE Geodatabase:

Rest BMP ID, type, class, number of BMPs, impervious acres, built date, implementation cost should match the various geodatabase tables for BMPs (AltBMPLine, AltBMPPoint, AltBMPPoly, and RestBMP)-- aggregated by type and status.

Notes:



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Restoration Projects To Be Planned, Designed, and/or Constructed from CY 2020 Through CY 2025 PRINCE GEORGE'S COUNTY, MARYLAND



REST BMP ID	REST BMP TYPE ¹	BMP CLASS ¹	NUM BMP	IMP ACRES	TSS REDUCTION (lbs/year)	TN ⁶ REDUCTION (lbs/year)	IMPLEMENTATION COST	IMPLEMENTATION STATUS ²	PROJECTED IMPLEMENTATION YEAR	TMDL PARAMETER OR WQ OBJECTIVE ADDRESSED	GENERAL COMMENTS ⁷
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- 1 Use BMP types and classes from the MDE Geodatabase.
- 2 Implementation status should be Planning, Design, or Under Construction.
- 3 Includes annual BMPs and Water Quality Trades required to be maintained each year until replaced with permanent BMP.
- 4 For street sweeping, indicate the annual frequency that the streets are swept and for inlet cleaning indicate the number of inlets cleaned.
- 5 For Operational BMPs, TSS, TP, and TN reductions should use averages for each type of BMP.
- 6 Use pollutant load reduction efficiencies in accordance with the CBP's expert panel reports and a delivery factors based on the BMP's proximity to the Bay.
- 7 Add detailed description of co-benefits provide by the BMP in this column. Also note if a permanent BMP is replacing annual BMPs.