Stormwater Management

PROGRAM DESCRIPTION AND OBJECTIVES

Uncontrolled stormwater runoff from developed areas leads to erosion of stream banks, siltation and widening of stream channels, and localized flooding. Urbanization often impacts stream habitats, leading to declines in the diversity of fish and other aquatic species. Urban runoff also adds to downstream pollution in the Anacostia, Patuxent, and Potomac rivers and the Chesapeake Bay. Multi-state agreements as well as State legislation and programs emphasize the importance of watershed-based programs to protect aquatic habitats and reduce pollution in the Bay and its tributaries.

The objectives of the Stormwater Management program are: protecting natural waterway environments; addressing the impacts of stormwater runoff by enhancing existing best management practices such as ponds, restoring streams previously damaged by excessive erosion and sedimentation, and installing other best management practices to capture runoff and allow for treatment to prevent impaired water quality. The County's Stormwater Management program is watershed-based and focuses on mitigating problems caused by development that was constructed prior to implementation of current stormwater management controls and on proactive planning in the developing portions of the County.

Residential and Commercial property owners pay a Water Quality Protection Charge (WQPC) to fund the Stormwater Management program. The WQPC funds are used to install new treatment facilities and retrofit existing facilities, maintain treatment facilities, monitor the effects of the treatment, ensure an active public education and engagement program and ensure compliance with the multiple requirements of the permit issued to the County under the Clean Water Act, National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer system (MS4 permit). The WQPC and financing secured by the WQPC are the main funding mechanisms for treatment facility projects. The County's stormwater control requirements are established in the MS4 Permit, issued by the Maryland Department of the Environment (MDE). The second generation permit, issued in 2001 required the County to restore 10% of the impervious area with stormwater runoff not controlled to the Maximum Extent Practicable (MEP) of 2,146 acres. The County has met that restoration requirement. The County has made significant progress in meeting all the requirements of the 3rd generation permit issued in 2010 which required watershed restoration of 20% of the County's impervious area not already controlled to the MEP. This requirement translated into an additional 3,778 acres of impervious area restoration to be completed by the County. The County has completed restoration of close to 2,900 acres of impervious area. Restoration projects to treat the remaining acres are in design. This work will meet the restoration requirements of the 2010 MS4 permit and demonstrates the County's strong commitment to improving water quality and conservation of the environment.

The Stormwater Management capital program includes facility planning studies and the development of Watershed Restoration Action Plans, design and construction of stormwater retrofit projects (including low-impact development and green infrastructure), and stream restoration projects. These projects reduce pollution in streams and manage peak runoff flows to improve stream channel habitat and reduce sedimentation impacts from watershed development and urbanized areas. Project implementation helps fulfill requirements specified in the County's MS4 permit.

Since FY04, the County has performed structural maintenance for qualified private stormwater management facilities such as ponds, sand filters, and underground facilities located on Homeowner and Condominium Association and commercial properties. The WQPC funds the maintenance of these privately-owned structures as well as County-owned facilities. This program improves the long-term operational effectiveness of these facilities and increases their pollution removal efficiency. Inspection and routine maintenance of these facilities are funded in the operating budget, while major structural repairs that require extensive engineering design and permitting are funded in the CIP.

The Stormwater Management program, which was developed by the Department of Environmental Protection (DEP) to comply with the NPDES MS4 permit,continues to act as a model for jurisdictions throughout Maryland who were required to develop and implement a Stormwater Management program.

The CIP budget represents the resources necessary to complete the requirements of the current permit. It also includes resources to perform work on future permit requirements that will be negotiated with MDE and other stakeholders. It is expected a new permit will be in place in FY2019. Additionally, DEP continues to identify program efficiencies to allow for better informed decision making and restoration outcomes at reduced costs. These include the pursuit of lower-cost funding through the Maryland Water Quality Revolving Loan Fund and the increased utilization of Public-Private Contracts and Partnerships.

The FY19-24 CIP program for Stormwater Management continues the County's commitment to treat impervious surfaces within the County to the maximum extent practicable. After analyzing the overall program implementation rate to date, the FY19-24 CIP implementation rate has been adjusted to a more realistic level for most projects. As a result of this analysis and additional DEP efforts to bring down program costs, total six-year program expenditures have decreased to $245.8 million, a 28.9 percent reduction to the amended FY17-22 six-year program of $345.5 million.

The Department of Transportation (DOT) is also assisting DEP in implementing the MS4 Permit by: (1) seeking DEP guidance on prioritization of storm drain outfall repairs; (2) coordinating with DEP on storm drain projects developed in the Storm Drain General and Facility Planning - Storm Drain programs to identify opportunities for enhancements which would assist in meeting the requirements of the MS4 permit; and (3) holding regular meetings with DEP staff looking for additional areas of cooperation in meeting the MS4 permit requirements.

HIGHLIGHTS

- Continue the planning and implementation of stormwater controls, public outreach, stream monitoring, and other actions needed to comply with the County's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS-4) permit, which will significantly enhance the County's efforts to improve water quality in local streams and ultimately the Chesapeake Bay. To date, the County has restored close to 2,900 acres of impervious area.
- Pursue Maryland Water Quality Revolving Loan funds to bring down program costs through lower interest financing.
- Expand the use of Public-Private Contracts and Partnerships to meet MS4 permit goals in a more cost-effective manner.
- Increase repairs of damaged stream channels and tributaries in stream valley parks and priority watersheds.
- Continue to construct new stormwater management facilities and retrofit old stormwater controls to prevent property damage, improve water quality, and protect habitat.
- Continue to perform major structural repairs on public and private stormwater facilities accepted into the County's maintenance program.

PROGRAM CONTACTS

- Contact Jim Stiles of the Department of Environmental Protection at 240.777.7789 or Trevor Lobaugh of the Office of Management and Budget at 240.777.2763 for more information regarding this department's capital budget.

CAPITAL PROGRAM REVIEW

A total of nine ongoing projects and one new project are recommended for FY19-24 and are described in detail in the Project Description Forms. The Recommended FY19-24 Stormwater Management capital program totals $245.8 million, a decrease of $99.7 million or 28.9 percent from the amended approved FY17-22 program of $345.5 million. This reduction assumes a shift to a more realistic implementation rate for most projects, the use of lower-cost funding sources, and the increased utilization of Public-Private Contracts and Partnerships.

The stormwater management capital program will be funded primarily by long-term debt financing through the Maryland Water Quality Revolving Loan Fund and the issuance of Water Quality Protection Charge Revenue Bonds (WQPC Bonds) secured by the Water Quality Protection Charge (WQPC). The stormwater management program assumes multiple awards of Maryland Water Quality Revolving Loan Funds over the six-year period, which would replace WQPC Bonds as the primary source of funding for the

program. Maryland Water Quality Revolving Loan Funds are a low-interest form of borrowing that brings down the overall cost of the program. The loans and bonds will cover expenditures incurred for the design and construction of additional stormwater facilities needed to comply with the requirements of the County's MS4 permit. Cost containment efforts have been aggressively pursued to avoid large increases in the WQPC.

Also included in the funding of the stormwater management projects is an assumption of $18 million in State Aid based on the State's expressed interest in supporting stormwater management efforts throughout the state.

Facility Planning: SM
(P809319)

Category	Conservation of Natural Resources	Date Last Modified	01/06/18
SubCategory	Stormwater Management	Administering Agency	Environmental Protection
Planning Area	Countywide	Status	Ongoing

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	20,837	11,737	1,394	7,706	1,697	1,723	1,026	1,055	1,086	1,119	-
Other	164	164	-	-	-	-	-	-	-	-	-
TOTAL EXPENDITURES	21,001	11,901	1,394	7,706	1,697	1,723	1,026	1,055	1,086	1,119	-

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Current Revenue: General	5,000	5,000	-	-	-	-	-	-	-	-	-
Current Revenue: Water Quality Protection	15,064	5,964	1,394	7,706	1,697	1,723	1,026	1,055	1,086	1,119	-
State Aid	140	140	-	-	-	-	-	-	-	-	-
Stormwater Management Waiver Fees	797	797	-	-	-	-	-	-	-	-	-
TOTAL FUNDING SOURCES	21,001	11,901	1,394	7,706	1,697	1,723	1,026	1,055	1,086	1,119	-

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 19 Request	1,580	Year First Appropriation	FY93
Appropriation FY 20 Request	698	Last FY's Cost Estimate	17,690
Cumulative Appropriation	14,468		
Expenditure / Encumbrances	12,851		
Unencumbered Balance	1,617		

Project Description

This project provides for facility planning and feasibility studies to evaluate watershed conservation needs and to identify remedial project alternatives for stormwater management, stormwater retrofit, Environmental Site Design (ESD)/Low Impact Development (LID), and stream restoration projects. Projects in facility planning may include the preparation of watershed plans assessing stream restoration, stormwater management retrofit projects, and LID and ESD projects to help mitigate degraded stream conditions in rural and developed watersheds. Water quality monitoring and analysis is required to quantify impacts of watershed development and projects implemented in Retrofit SM Government Facilities (No. 800900), SM Retrofit Roads (No. 801300), SM Retrofit Schools (No. 801301), SM Retrofit Countywide (No. 808726), and Misc Stream Valley Improvements (No. 807359). The projects generated in facility planning support the requirements in the County's Municipal Separate Storm

Sewer System (MS4) Permit. Facility planning represents planning and preliminary design and develops a program of requirements in advance of full programming of a project. This project also provides for operation of automated fixed monitoring stations as required by the MS4 Permit.

Cost Change

Increase is due to the addition of FY23 and FY24 to this ongoing level-of-effort project.

Project Justification

The facility planning products support the requirements outlined in the County's MS4 Permit as detailed in the Montgomery County Coordinated Implementation Strategy (CCIS). This project establishes the facilities planning data and alternatives analysis needed to identify and set priorities for individual capital projects. Facility planning costs for projects which are ultimately included in stand-alone Project Description Forms (PDFs) are reflected here and not in the resulting individual project. Future individual CIP projects which result from facility planning will reflect reduced planning and design costs.

Fiscal Note

Expenditures in the outyears include expected costs to meet the requirements of the County's next MS4 permit. The scope of the next MS4 permit is subject to negotiation with the Maryland Department of Environment.

Disclosures

Expenditures will continue indefinitely. The County Executive asserts that this project conforms to the requirement of relevant local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

Coordination

Maryland-National Capital Park and Planning Commission, U. S. Army Corps of Engineers, Washington Suburban Sanitary Commission, Department of Transportation, Montgomery County Public Schools, SM Retrofit Government Facilities (No. 800900), SM Retrofit Roads (No. 801300), SM Retrofit Schools (No. 801301), SM Retrofit Countywide (No. 808726), Misc. Stream Valley Improvements (No. 807359).

Misc Stream Valley Improvements
(P807359)

Category	Conservation of Natural Resources	Date Last Modified	12/29/17
SubCategory	Stormwater Management	Administering Agency	Environmental Protection
Planning Area	Countywide	Status	Ongoing

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	18,507	3,457	2,002	13,048	2,155	2,097	1,933	2,233	2,287	2,343	-
Land	2	2	-	-	-	-	-	-	-	-	-
Site Improvements and Utilities	1	1	-	-	-	-	-	-	-	-	-
Construction	62,229	3,612	3,843	54,774	14,114	18,528	3,247	6,295	6,295	6,295	-
Other	582	582	-	-	-	-	-	-	-	-	-
TOTAL EXPENDITURES	81,321	7,654	5,845	67,822	16,269	20,625	5,180	8,528	8,582	8,638	-

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Current Revenue: Water Quality Protection	10,074	-	1,984	8,090	4,150	3,940	-	-	-	-	-
Long-Term Financing	49,332	-	-	49,332	10,919	15,485	3,180	6,528	6,582	6,638	-
State Aid	12,859	3,659	-	9,200	1,000	1,000	1,800	1,800	1,800	1,800	-
Stormwater Management Waiver Fees	2,099	499	400	1,200	200	200	200	200	200	200	-
Water Quality Protection Bonds	6,957	3,496	3,461	-	-	-	-	-	-	-	-
TOTAL FUNDING SOURCES	81,321	7,654	5,845	67,822	16,269	20,625	5,180	8,528	8,582	8,638	-

OPERATING BUDGET IMPACT ($000s)

Impact Type		Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Maintenance		160	20	30	20	5	35	50
NET IMPACT		160	20	30	20	5	35	50

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 19 Request	13,661	Year First Appropriation	FY73
Appropriation FY 20 Request	5,140	Last FY's Cost Estimate	70,259
Cumulative Appropriation	37,947		
Expenditure / Encumbrances	15,529		
Unencumbered Balance	22,418		

Project Description

This project provides for design and construction of habitat restoration or stabilization measures for stream reaches having significant channel erosion, sedimentation, and habitat degradation. Developed areas constructed without current stormwater controls contribute uncontrolled runoff which results in eroded streambanks, excessive sediment, tree loss, and degraded habitat for fish and aquatic life. Stormdrain outfalls damaged from severe erosion are identified and, where possible, the outfalls are repaired as part of stream restoration projects - funded from the Outfall Repairs project (No. 509948). Stream deterioration can also adversely affect sanitary sewer crossings by exposing sewer lines and manholes, which in turn can be fish barriers and leak raw sewage into streams or allow infiltration of stream baseflow into the sewer system, potentially causing substantial increases in wastewater treatment costs.

Cost Change

Increase is due to the addition of FY23-24 to this ongoing level of effort project and and increased emphasis on stream restoration projects to meet Municipal Separate Storm Sewer System (MS4) permit requirements.

Project Justification

The project supports the requirements of the County's MS4 permit and addresses the goals of the Chesapeake Bay Watershed Agreement, Anacostia Watershed Restoration Agreement, and the County's adopted water quality goals (Chapter 19, Article IV). The project will stabilize and improve local stream habitat conditions where streams have been damaged by inadequately controlled stormwater runoff. Corrective measures constructed or coordinated under this project include stream bank stabilization, channel modifications, habitat restoration, storm drain outfall or sanitary sewer infrastructure repairs to improve fish and other biological resources, while reducing sediment and nutrient loadings caused by excessive streambank erosion. The Facility Planning: SM project (No. 809319) includes funds for watershed studies and identifies and prioritizes stream reaches in need of restoration and protection.

Other

The Department of Environmental Protection identifies damaged sewer lines as part of this project, and the Washington Suburban Sanitary Commission makes sewer repairs during project construction. Projects planned for design and construction include Fallsreach, Flints Grove Stream, Germantown Park Stream, Lower Snowdens & Falling Creek, Stonybrook Tributary, Gunners Branch, Plum Gar Stream, Bel Pre Creek, Old Farm Creek, Grosvenor Tributary, Clearspring Manor Stream, Booze Creek Repairs, Derby Ridge, and Glenallen.

Fiscal Note

This project assumes the award of Maryland Water Quality Revolving Loan Funds (Long-Term Financing) over the six-year period, which would replace Water Quality Protection Bonds as the primary source of funding for the program. While the State of Maryland has indicated a desire to provide funding, all indicated State Aid is preliminary. Expenditures in the outyears include expected costs to meet the requirements of the County's next MS4 permit. The scope of the next MS4 permit is subject to negotiation with the Maryland Department of Environment.

Disclosures

Expenditures will continue indefinitely. The County Executive asserts that this project conforms to the requirement of relevant local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

Coordination

Department of Transportation, Maryland-National Capital Park and Planning Commission, Washington Suburban Sanitary Commission, Department of Permitting Services, Maryland Department of the Environment, Maryland Department of Natural Resources.

SM Facility Major Structural Repair
(P800700)

Category	Conservation of Natural Resources	Date Last Modified	01/06/18
SubCategory	Stormwater Management	Administering Agency	Environmental Protection
Planning Area	Countywide	Status	Ongoing

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	9,969	3,842	2,049	4,078	966	553	716	725	798	320	-
Construction	24,000	10,791	1,260	11,949	1,890	3,395	2,698	1,528	585	1,853	-
Other	1	1	-	-	-	-	-	-	-	-	-
TOTAL EXPENDITURES	33,970	14,634	3,309	16,027	2,856	3,948	3,414	2,253	1,383	2,173	-

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Current Revenue: Water Quality Protection	8,104	8,104	-	-	-	-	-	-	-	-	-
Long-Term Financing	16,027	-	-	16,027	2,856	3,948	3,414	2,253	1,383	2,173	-
State Aid	399	399	-	-	-	-	-	-	-	-	-
Water Quality Protection Bonds	9,440	6,131	3,309	-	-	-	-	-	-	-	-
TOTAL FUNDING SOURCES	33,970	14,634	3,309	16,027	2,856	3,948	3,414	2,253	1,383	2,173	-

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 19 Request	234	Year First Appropriation	FY07
Appropriation FY 20 Request	2,826	Last FY's Cost Estimate	37,179
Cumulative Appropriation	25,131		
Expenditure / Encumbrances	16,780		
Unencumbered Balance	8,351		

Project Description

This project provides for the design and construction of major structural repairs to County maintained stormwater management facilities. The County is responsible for structural maintenance of over 5,786 stormwater management facilities. Major structural repairs can include dredging and removing sediment, removal and replacement or relining of failing pipes and principal spillways, replacing failing riser structures, and repairing failing dam embankments. The repair work under this project is more significant than routine maintenance and requires engineering analysis and design and application for Federal, State, and local permitting. Major structural repairs that may include a retrofit would also include partial funding for the retrofit under the SM Retrofit: Countywide project (No. 808726).

Cost Change

Decrease due to a shift to a more realistic implementation rate for this ongoing level-of-effort project.

Project Justification

This project provides for major structural repairs in order to comply with the County's municipal separate storm sewer system (MS4) permit. It is limited to funding repairs at facilities that require extensive engineering design and permitting that cannot be accomplished within a single fiscal year due to the time required to obtain State and Federal permits.

Other

Projects include: Wheaton Branch overtopping protection, Persimmon Tree, Peachwod ond, Briars Acres pond, Neelesville ROW pond, Lake Hallowell dredging project, Green Castle Manor repair project, Oaks ponds, Lake Whetstone Toe Drain repair, Railroad Branch dredging, Oakhurst, Home Depot pond, Tamarak, B'nai Israel riser replacement, Colony Pond, Garfield Pond, Inverness Knolls, East Gate of Potomac, and other small dredging projects

Fiscal Note

This project assumes the award of Maryland Water Quality Revolving Loan Funds (Long-Term Financing) over the six-year period, which would replace Water Quality Protection Bonds as the primary source of funding for the program. No State Aid is assumed for this project in FY19-24.

Disclosures

Expenditures will continue indefinitely. The County Executive asserts that this project conforms to the requirement of relevant local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

Coordination

Department of Transportation, Maryland-National Capital Park and Planning Commission, Department of Permitting Services, Homeowners Associations, Montgomery County Public Schools, Department of General Services, Maryland State Highway Administration, SM Retrofit: Countywide (No. 808726), Maryland Department of Natural Resources.

SM Public/Private Agreements
(P801901)

Category	Conservation of Natural Resources	Date Last Modified	12/29/17
SubCategory	Stormwater Management	Administering Agency	Environmental Protection
Planning Area	Countywide	Status	Ongoing

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	1,480	-	-	1,480	120	220	360	360	260	160	-
Construction	48,720	-	-	48,720	-	-	12,180	12,180	12,180	12,180	-
TOTAL EXPENDITURES	50,200	-	-	50,200	120	220	12,540	12,540	12,440	12,340	-

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Long-Term Financing	50,200	-	-	50,200	120	220	12,540	12,540	12,440	12,340	-
TOTAL FUNDING SOURCES	50,200	-	-	50,200	120	220	12,540	12,540	12,440	12,340	-

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 19 Request	12,300	Year First Appropriation	FY19
Appropriation FY 20 Request	12,400	Last FY's Cost Estimate	-
Cumulative Appropriation	-		
Expenditure / Encumbrances	-		
Unencumbered Balance	-		

Project Description

This project provides for the use of Public/Private agreements for the design and construction of new and/or upgrades of existing underperforming stormwater management facilities or stream restorations throughout the County to meet the requirements of the County's Municipal Separate Storm Sewer System (MS4) Permit. Compliance with the MS4 Permit requires the control of impervious surfaces not currently treated to the maximum extent practicable. Any stormwater management facility type(s) or stream restoration, deemed creditable per the Maryland Department of the Environment regulations, can be implemented per this project. The use of Pay-for-Performance (PFP) agreements and/or Public-Private Partnerships (P3) are included in this CIP project. Public/Private Agreements may include maintenance and/or monitoring costs.

Project Justification

This project is needed to comply with the County's MS4 permitting requirements in a cost-effective manner, to implement the County's adopted water quality goals (Chapter 19, Article IV), and to protect habitat conditions in local streams.

Fiscal Note

This project assumes the award of Maryland Water Quality Revolving Loan Funds (Long-Term Financing) over the six-year period, which would replace Water Quality Protection Bonds as the primary source of funding for the program. While the funding schedule indicates the use of funds from Long-Term Financing, the County will also investigate the use of private funding as part of any agreement. If private funding is recommended, this project will be revised accordingly. Expenditures in the outyears include expected costs to meet the requirements of the County's next MS4 permit. The scope of the next MS4 permit is subject to negotiation with the Maryland Department of Environment.

Disclosures

Expenditures will continue indefinitely.

Coordination

Maryland National Capital Park and Planning Commission, Department of Permitting Services, Maryland Department of the Environment

SM Retrofit - Government Facilities
(P800900)

Category	Conservation of Natural Resources	Date Last Modified	12/21/17
SubCategory	Stormwater Management	Administering Agency	Environmental Protection
Planning Area	Countywide	Status	Ongoing

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	12,270	8,292	1,012	2,966	407	435	465	538	553	568	-
Site Improvements and Utilities	3	3	-	-	-	-	-	-	-	-	-
Construction	9,842	4,110	2,138	3,594	924	-	-	890	890	890	-
Other	19	19	-	-	-	-	-	-	-	-	-
TOTAL EXPENDITURES	22,134	12,424	3,150	6,560	1,331	435	465	1,428	1,443	1,458	-

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Current Revenue: Water Quality Protection	1,182	1,182	-	-	-	-	-	-	-	-	-
Long-Term Financing	6,560	-	-	6,560	1,331	435	465	1,428	1,443	1,458	-
State Aid	1,358	1,358	-	-	-	-	-	-	-	-	-
Water Quality Protection Bonds	13,034	9,884	3,150	-	-	-	-	-	-	-	-
TOTAL FUNDING SOURCES	22,134	12,424	3,150	6,560	1,331	435	465	1,428	1,443	1,458	-

OPERATING BUDGET IMPACT ($000s)

Impact Type		Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Maintenance		134	56	-	-	26	26	26
NET IMPACT		134	56	-	-	26	26	26

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 19 Request	(1,000)	Year First Appropriation	FY09
Appropriation FY 20 Request	-	Last FY's Cost Estimate	24,898
Cumulative Appropriation	19,705		
Expenditure / Encumbrances	13,610		
Unencumbered Balance	6,095		

Project Description

This project provides for the design and construction of Environmental Site Design (ESD)/Low Impact Development (LID) stormwater management devices at County facilities such as buildings, parking garages, and parking lots constructed prior to modern stormwater management controls. ESD/LID stormwater devices include: Green Roofs, bioretention areas, tree box inlets, porous concrete, and other types of devices that promote water filtering and groundwater recharge. Implementing new stormwater devices in developed areas built with inadequate or no stormwater control is required in the County's Municipal Separate Storm Sewer System (MS4) Permit as detailed in the Montgomery County Coordinated Implementation Strategy (CCIS). The Department of Environmental Protection (DEP) in coordination with the Department of General Services (DGS) has identified candidate CIP projects that will be implemented jointly.

Cost Change

Decrease due to a shift to a more realistic implementation rate for this ongoing level-of-effort project.

Project Justification

This project supports the requirements of the County's current MS4 permit and addresses the goals of the Chesapeake Bay Watershed Agreement and the County's adopted water quality goals (Chapter 19, Article IV). The County's MS4 permit requires that the County provide stormwater controls for 20 percent of impervious surfaces not currently treated to the maximum extent practicable, with an emphasis, where possible, on the use of LID/ESD devices.

Fiscal Note

This project assumes the award of Maryland Water Quality Revolving Loan Funds (Long-Term Financing) over the six-year period, which would replace Water Quality Protection Bonds as the primary source of funding for the program. Expenditures in the outyears include expected costs to meet the requirements of the County's next MS4 permit. The scope of the next MS4 permit is subject to negotiation with the Maryland Department of Environment.

Disclosures

Expenditures will continue indefinitely. The County Executive asserts that this project conforms to the requirement of relevant local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

Coordination

Department of General Services, Maryland-National Capital Park and Planning Commission, Department of Permitting Services, Maryland Department of the Environment, Maryland Department of Natural Resources.

SM Retrofit - Roads
(P801300)

Category	Conservation of Natural Resources	Date Last Modified	01/06/18
SubCategory	Stormwater Management	Administering Agency	Environmental Protection
Planning Area	Countywide	Status	Ongoing

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	16,310	6,356	2,118	7,836	1,854	1,511	1,175	1,073	1,098	1,125	-
Construction	26,144	8,518	57	17,569	3,195	7,893	3,478	1,001	1,001	1,001	-
Other	2	2	-	-	-	-	-	-	-	-	-
TOTAL EXPENDITURES	42,456	14,876	2,175	25,405	5,049	9,404	4,653	2,074	2,099	2,126	-

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Long-Term Financing	22,405	-	-	22,405	4,549	8,904	4,153	1,574	1,599	1,626	-
State Aid	12,508	9,308	200	3,000	500	500	500	500	500	500	-
Water Quality Protection Bonds	7,543	5,568	1,975	-	-	-	-	-	-	-	-
TOTAL FUNDING SOURCES	42,456	14,876	2,175	25,405	5,049	9,404	4,653	2,074	2,099	2,126	-

OPERATING BUDGET IMPACT ($000s)

Impact Type		Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Maintenance		2,838	-	399	1,905	178	178	178
NET IMPACT		2,838	-	399	1,905	178	178	178

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 19 Request	(8,000)	Year First Appropriation	FY13
Appropriation FY 20 Request	-	Last FY's Cost Estimate	132,844
Cumulative Appropriation	43,954		
Expenditure / Encumbrances	18,975		
Unencumbered Balance	24,979		

Project Description

This project provides for the design and construction of Environmental Site Design (ESD)/Low Impact Development (LID) stormwater management devices along County roads constructed prior to modern stormwater management controls. ESD/LID stormwater devices include bioretention, curb extensions, porous concrete, tree box inlets, and other types of devices that

promote water filtering and groundwater recharge.

Cost Change

Project decrease is due to a shift to a more realistic implementation rate, a decreased emphasis on Road LID projects in the stormwater program, and the relocation of Public/Private work to a separate stand-alone project.

Project Justification

This project supports the requirements of the County's Municipal Separate Storm Sewer System (MS4) permit and addresses the goals of the Chesapeake Bay Watershed Agreement and the County's adopted water quality goals (Chapter 19, Article IV). The County's MS4 permit requires that the County provide stormwater controls for 20 percent of impervious surfaces not currently treated to the maximum extent practicable, with an emphasis, where possible, on the use of ESD/LID devices. This project will be responsible for controlling stormwater on County roads, largely through ESD/LID practices, as needed to satisfy the permit requirements.

Other

A portion of these potential ESD/LID stormwater retrofits on County roads were previously programmed under the SM Retrofit - Government Facilities project (No. 800900). This stand-alone project includes potential ESD/LID projects for County roads and allows for a more efficient implementation of projects of similar scope in partnership with the Department of Transportation (DOT). Planned and in-construction projects include Springbrook, Cannon Road, Derrydown, Glenmont Forest, Wheaton Woods, and Manor Woods green streets.

Fiscal Note

This project assumes the award of Maryland Water Quality Revolving Loan Funds (Long-Term Financing) over the six-year period, which would replace Water Quality Protection Bonds as the primary source of funding for the program. Expenditures in the outyears include expected costs to meet the requirements of the County's next MS4 permit. The scope of the next MS4 permit is subject to negotiation with the Maryland Department of Environment.

Disclosures

Expenditures will continue indefinitely. The County Executive asserts that this project conforms to the requirement of relevant local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

Coordination

Department of General Services, Department of Transportation, Maryland-National Capital Park and Planning Commission, Department of Permitting Services, Maryland Department of the Environment, United States Army Corps of Engineers, Maryland Department of Natural Resources.

SM Retrofit - Schools
(P801301)

Category	Conservation of Natural Resources	Date Last Modified	01/06/18
SubCategory	Stormwater Management	Administering Agency	Environmental Protection
Planning Area	Countywide	Status	Ongoing

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	6,323	1,478	1,246	3,599	670	560	500	612	623	634	-
Construction	5,661	854	1,499	3,308	578	771	-	653	653	653	-
TOTAL EXPENDITURES	11,984	2,332	2,745	6,907	1,248	1,331	500	1,265	1,276	1,287	-

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Long-Term Financing	6,907	-	-	6,907	1,248	1,331	500	1,265	1,276	1,287	-
State Aid	1,778	528	1,250	-	-	-	-	-	-	-	-
Water Quality Protection Bonds	3,299	1,804	1,495	-	-	-	-	-	-	-	-
TOTAL FUNDING SOURCES	11,984	2,332	2,745	6,907	1,248	1,331	500	1,265	1,276	1,287	-

OPERATING BUDGET IMPACT ($000s)

Impact Type		Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Maintenance		9	1	2	-	2	2	2
NET IMPACT		9	1	2	-	2	2	2

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 19 Request	-	Year First Appropriation	FY13
Appropriation FY 20 Request	960	Last FY's Cost Estimate	15,674
Cumulative Appropriation	8,286		
Expenditure / Encumbrances	5,823		
Unencumbered Balance	2,463		

Project Description

This project provides for the design and construction of Environmental Site Design (ESD)/Low Impact Development (LID) stormwater management devices at Montgomery County Public Schools (MCPS) such as buildings, parking lots, and other impervious surfaces constructed prior to modern stormwater management controls. LID/ESD stormwater devices that may be implemented under this project include: green roofs, bioretention areas, tree box inlets, porous concrete, and other types of devices

that promote water filtering and groundwater recharge.

Cost Change

Project decrease is due to a shift to a more realistic implementation rate.

Project Justification

This project supports the requirements of the County's Municipal Separate Storm Sewer System (MS4) permit and addresses the goals of the Chesapeake Bay Watershed Agreement and the County's adopted water quality goals (Chapter 19, Article IV). The County's MS4 permit requires that the County provide stormwater controls for 20 percent of impervious surfaces not currently treated to the maximum extent practicable, with an emphasis, where possible, on the use of LID/ESD devices. This project will be responsible for controlling stormwater on Montgomery County Public School (MCPS) properties largely through the use of LID/ESD practices needed to satisfy the permit requirements.

Other

A portion of these potential LID/ESD stormwater retrofits located at County schools were previously programmed under the FY11-16 Approved SM Retrofit - Government Facilities project (No. 800900). This stand-alone project includes LID/ESD projects located on MCPS property and allows for a more efficient implementation of projects in partnership with MCPS.

Fiscal Note

This project assumes the award of Maryland Water Quality Revolving Loan Funds (Long-Term Financing) over the six-year period, which would replace Water Quality Protection Bonds as the primary source of funding for the program. In FY17, due to a grant modification, funding from State Aid replaced some funding previously allocated to Water Quality Protection Bonds. Expenditures in the outyears include expected costs to meet the requirements of the County's next MS4 permit. The scope of the next MS4 permit is subject to negotiation with the Maryland Department of the Environment.

Disclosures

Expenditures will continue indefinitely. The County Executive asserts that this project conforms to the requirement of relevant local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

Coordination

Maryland-National Capital Park and Planning Commission, Montgomery County Public Schools, Department of Permitting Services, Maryland Department of the Environment.

SM Retrofit: Countywide
(P808726)

Category	Conservation of Natural Resources	Date Last Modified	01/06/18
SubCategory	Stormwater Management	Administering Agency	Environmental Protection
Planning Area	Countywide	Status	Ongoing

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	41,746	14,369	8,014	19,363	4,022	3,649	2,763	2,920	2,975	3,034	-
Site Improvements and Utilities	4	4	-	-	-	-	-	-	-	-	-
Construction	68,370	9,094	20,605	38,671	22,220	10,183	844	1,682	1,955	1,787	-
Other	588	588	-	-	-	-	-	-	-	-	-
TOTAL EXPENDITURES	110,708	24,055	28,619	58,034	26,242	13,832	3,607	4,602	4,930	4,821	-

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Intergovernmental	1,000	-	1,000	-	-	-	-	-	-	-	-
Current Revenue: Water Quality Protection	4,646	4,586	-	60	-	60	-	-	-	-	-
Long-Term Financing	47,174	-	-	47,174	19,742	12,272	2,907	3,902	4,230	4,121	-
State Aid	7,300	-	1,500	5,800	1,500	1,500	700	700	700	700	-
Water Quality Protection Bonds	50,588	19,469	26,119	5,000	5,000	-	-	-	-	-	-
TOTAL FUNDING SOURCES	110,708	24,055	28,619	58,034	26,242	13,832	3,607	4,602	4,930	4,821	-

OPERATING BUDGET IMPACT ($000s)

Impact Type		Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Maintenance		45	20	5	5	5	5	5
NET IMPACT		45	20	5	5	5	5	5

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 19 Request	-	Year First Appropriation	FY87
Appropriation FY 20 Request	6,613	Last FY's Cost Estimate	126,578
Cumulative Appropriation	91,586		
Expenditure / Encumbrances	44,828		
Unencumbered Balance	46,758		

Project Description

This project provides for the design and construction of new and/or upgrades of existing underperforming stormwater management facilities and devices under the County's Municipal Separate Storm Sewer System (MS4) Permit as detailed in the draft Montgomery County Coordinated Implementation Strategy (CCIS). Compliance with the MS4 permit requires controlling 20 percent of impervious surfaces, or approximately 3,778 impervious acres, not currently treated to the maximum extent practicable. Inventories of candidate projects have been conducted under the Facility Planning: SM project (PDF No. 809319) for the County's ten watersheds (Paint Branch, Rock Creek, Cabin John Creek, Hawlings River, Watts Branch, Great Seneca, Muddy Branch, Sligo Creek, Little Paint Branch, and Northwest Branch). Some of the most complex projects constructed under this project are assessed and the preliminary plans are completed in the Facility Planning: SM project (No. 809319). Where feasible, the projects integrate wetland and habitat features consistent with the goals of the Chesapeake Bay Agreement. In small drainage areas, retrofit projects may also include biofiltration, bioretention, or stormwater filtering devices.

Cost Change

Project decrease is due to a shift to a more realistic implementation rate.

Project Justification

This project is needed to comply with the County's MS4 permitting requirements and to implement the County's adopted water quality goals (Chapter 19, Article IV) and protect habitat conditions in local streams. In addition, the project supports the goals of the Anacostia Watershed Restoration Agreement.

Other

Projects in design and construction include projects located in the Rock Creek Watershed, Watts Branch Watershed, Great Seneca Creek Watershed, Muddy Branch Watershed, Cabin John Creek Watershed, and Anacostia River Watershed.

Fiscal Note

This project assumes the award of Maryland Water Quality Revolving Loan Funds (Long-Term Financing) over the six-year period, which would replace Water Quality Protection Bonds as the primary source of funding for the program. While the State of Maryland has indicated a desire to provide funding, all indicated State Aid is preliminary and not appropriated. In FY17 and FY18, funding from the Current Revenue: Water Quality Protection replaced some funding previously allocated to Water Quality Protection Bonds and State Aid. Expenditures in the outyears include expected costs to meet the requirements of the County's next MS4 permit. The scope of the next permit is subject to negotiation with the Maryland Department of Environment. WSSC and DEP have agreed to an MOU related to Stormwater Management Projects in FY18. WSSC will transfer $1 million to the County to allow DEP to undertake SWM projects on WSSC's behalf.

Disclosures

Expenditures will continue indefinitely. The County Executive asserts that this project conforms to the requirement of relevant local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

Coordination

Department of Transportation, Maryland National Capital Park and Planning Commission, Department of Permitting Services, Maryland Department of the Environment, Natural Resources Conservation Service , U.S. Army Corps of Engineers, Facility Planning: SM (No. 809319), Maryland Department of Natural Resources.

Watershed Restoration - Interagency
(P809342)

Category	Conservation of Natural Resources	Date Last Modified	12/21/17
SubCategory	Stormwater Management	Administering Agency	Environmental Protection
Planning Area	Colesville-White Oak and Vicinity	Status	Ongoing

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	4,158	2,898	125	1,135	160	195	195	195	195	195	-
Land	4	4	-	-	-	-	-	-	-	-	-
Construction	3,034	1,874	-	1,160	-	-	290	290	290	290	-
Other	2	2	-	-	-	-	-	-	-	-	-
TOTAL EXPENDITURES	7,198	4,778	125	2,295	160	195	485	485	485	485	-

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
G.O. Bonds	527	527	-	-	-	-	-	-	-	-	-
Current Revenue: Water Quality Protection	166	166	-	-	-	-	-	-	-	-	-
Long-Term Financing	2,295	-	-	2,295	160	195	485	485	485	485	-
State Aid	370	370	-	-	-	-	-	-	-	-	-
Stormwater Management Waiver Fees	3,226	3,226	-	-	-	-	-	-	-	-	-
Water Quality Protection Bonds	614	489	125	-	-	-	-	-	-	-	-
TOTAL FUNDING SOURCES	7,198	4,778	125	2,295	160	195	485	485	485	485	-

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 19 Request	(5,765)	Year First Appropriation	FY93
Appropriation FY 20 Request	-	Last FY's Cost Estimate	16,777
Cumulative Appropriation	11,508		
Expenditure / Encumbrances	4,778		
Unencumbered Balance	6,730		

Project Description

This project provides for the design and construction of stormwater management retrofits and stream restoration projects which manage stormwater runoff, enhance aquatic habitat, and improve water quality in County streams. The projects are executed under interagency agreements with the U.S. Army Corps of Engineers (USACE). The first two agreements, which were signed in 1992 and 1997, were limited to subwatersheds within the Anacostia Watershed. In FY04, the USACE expanded project eligibility

to include all County subwatersheds within the Mid-Potomac watershed. The feasibility study and the design and construction of the projects selected in Montgomery County are managed by the U.S. Army Corps of Engineers with assistance from the Maryland Department of Environment and Maryland-National Capital Park and Planning Commission.

Cost Change

Project decrease is due to a shift to a more realistic implementation rate and a decrease in the availability of inter-agency projects.

Project Justification

This project will improve local stream water quality, protect stream conditions, and enhance wildlife and aquatic habitats in Sligo Creek, Northwest Branch, Paint Branch, and Little Paint Branch tributaries within the interjurisdictional Anacostia River Watershed. The project supports the goals of the Chesapeake Bay initiatives, the Anacostia Watershed Restoration Agreement, and addresses the County's Municipal Separate Storm Sewer System (MS4) permit as detailed in the Montgomery County Coordinated Implementation Strategy (CCIS).

Fiscal Note

This project leverages Federal Aid with the Federal government paying for 75 percent of construction costs for projects designed under the Anacostia Phase I Feasibility Study, and 65 percent of construction costs for projects designed under the subsequent agreements. Program expenditures reflect County contributions to the U.S. Army Corps of Engineers for design/construction and in-kind services. This project assumes the award of Maryland Water Quality Revolving Loan Funds (Long-Term Financing) over the six-year period, which would replace Water Quality Protection Bonds as the primary source of funding for the program. In FY17, Water Quality Protection Charge funding was increased reducing the need for Water Quality Protection Bonds. Expenditures in the outyears include expected costs to meet the requirements of the County's next MS4 permit. The scope of the next MS4 permit is subject to negotiation with the Maryland Department of Environment.

Disclosures

Expenditures will continue indefinitely. The County Executive asserts that this project conforms to the requirement of relevant local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

Coordination

U.S. Army Corps of Engineers, Maryland-National Capital Park and Planning Commission, Department of Permitting Services, Department of Transporation, Maryland Department of the Environment, Facility Planning: SM (No. 809319), Maryland Department of Natural Resources.

Wheaton Regional Dam Flooding Mitigation
(P801710)

Category	Conservation of Natural Resources	Date Last Modified	01/06/18
SubCategory	Stormwater Management	Administering Agency	Environmental Protection
Planning Area	Kensington-Wheaton	Status	Planning Stage

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	559	-	159	400	50	50	50	150	100	-	-
Construction	4,491	-	-	4,491	-	-	225	2,666	1,600	-	-
TOTAL EXPENDITURES	5,050	-	159	4,891	50	50	275	2,816	1,700	-	-

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Federal Aid	3,000	-	-	3,000	-	-	-	2,666	334	-	-
Long-Term Financing	1,891	-	-	1,891	50	50	275	150	1,366	-	-
Water Quality Protection Bonds	159	-	159	-	-	-	-	-	-	-	-
TOTAL FUNDING SOURCES	5,050	-	159	4,891	50	50	275	2,816	1,700	-	-

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 19 Request	-	Year First Appropriation	FY16
Appropriation FY 20 Request	-	Last FY's Cost Estimate	5,050
Cumulative Appropriation	2,950		
Expenditure / Encumbrances	-		
Unencumbered Balance	2,950		

Project Description

This flood mitigation project, located along Glenhaven Drive and Dennis Avenue in Wheaton, will excavate and expand the stream channel upstream of the Wheaton Regional Pond and modify the pond's riser structure. This project will be constructed in parallel with the Department of Transportation's (DOT) Dennis Avenue bridge replacement. The two projects will modify the current 100-year floodplain boundary just upstream of the pond. The post-project 100-year floodplain will not include the residential properties located in the current 100-year floodplain.

Estimated Schedule

The riser modification and channel design will begin in FY18 with the riser repair construction starting in FY21. The excavation of the channel will occur in coordination with DOT's culvert replacement in FY22 and FY23.

Project Justification

An engineering analysis by the Department of Environmental Protection (DEP) indicates that the effect of the riser structure associated with the Wheaton Regional Pond, the Dennis Avenue Culvert, and an undersized stream channel along Glenhaven Drive, cumulatively, will cause flooding of roads and private property during a 100-year storm event. Flooding of adjacent roads and private property has already occurred in 2006 and 2010. The County is seeking a map revision (LOMR) to the Federal Emergency Management Agency (FEMA) panel for this area to have the 100-year floodplain updated to reflect existing conditions.

Fiscal Note

This project will be done in conjunction with the DOT Dennis Avenue bridge replacement project. The County will also partner with the Maryland Emergency Management Agency (MEMA) to seek FEMA Pre-Disaster Mitigation (PDM) Grant Program funding for the channel modifications.

Coordination

Department of Transportation, Federal Emergency Management Agency, Maryland Emergency Management Agency, Dennis Ave Bridge M-0194 Replacement (No. 501701)