T&E COMMITTEE #1
March 3, 2016

Worksession

MEMORANDUM

March 1, 2016

TO: County Council

FROM: Keith Levchenko, Senior Legislative Analyst

SUBJECT: **Worksession: FY17-22 Capital Improvements Program (CIP) Conservation of Natural Resources:**
- **Stormwater Management**
- **Storm Drains**

Council Staff Recommendations:

- **Stormwater Management: Approve as Recommended by the County Executive. Highlights:**
  - *Slight decrease in overall six-year funding (but with WQPF bonds up slightly and State aid assumptions down).*
  - *Assumes completion of 2010-2015 MS4 permit-related retrofit work by 2020.*
  - *Assumes additional retrofit work for next permit to begin in FY19.*
  - *New project recommended to purchase properties to mitigate flooding issues related to the Wheaton Regional Dam.*

  NOTE: the Stormwater Management CIP is funded entirely from Water Quality Protection Fund dollars (current revenue and bonds) and State aid. Therefore, changes in expenditures in this program DO NOT affect overall CIP Spending Affordability limits.

- **Storm Drains: Approve as Recommended by the County Executive**
  Highlights:
  - *No new "stand alone" projects.*
  - *Wapakoneta Road Improvements project on schedule (ongoing project included in Roads CIP).*

NOTE: Council Staff has asked DEP and DOT to provide summary presentations of their programs, including some specific "before and after" examples of recently completed work funded out of these various CIP projects.

The following officials and staff will be attending this meeting:

Stormwater Management CIP Discussion
Lisa Feldt, Director, Department of Environmental Protection (DEP)
Patty Bubar, Deputy Director, DEP
Steve Shofar, Director, Watershed Management Division, DEP
Jim Stiles, Chief, Construction Management Section, Watershed Management Division, DEP
Veronica Jaua, Management and Budget Specialist, DEP
Mary Beck, CIP Coordinator, Office of Management and Budget (OMB)
Matthew Schaeffer, OMB

Storm Drains CIP Discussion
Bruce Johnston, Chief, Division of Transportation Engineering, Department of Transportation (DOT)
Dan Sheridan, Project Manager, Division of Transportation Engineering, DOT
Brady Goldsmith, OMB

FY17-22 STORMWATER MANAGEMENT CIP

Summary

Stormwater management is a shared responsibility among several County departments and agencies. DEP plans and implements the stormwater management CIP program. The Department of Permitting Services reviews, approves, inspects, and enforces requirements for construction of privately-owned stormwater management facilities. DEP works with the County's Department of Transportation (DOT) to address storm drain outfall repair issues, as well as with the Washington Suburban Sanitary Commission (WSSC) when WSSC infrastructure work is needed. DEP also inspects and provides structural maintenance for most Montgomery County Public Schools (MCPS) and the Montgomery County facilities on Maryland-National Capital Park and Planning Commission (M-NCPPC) land.

An excerpt from the Executive's Recommended FY17-22 CIP is attached on ©1-18. The Executive is recommending a slight decrease in the six-year program (from $362.9 million to $347.2 million, or -4.3 percent). This follows very large increases in the program approved in the previous three CIP cycles (FY11-16, FY13-18, and FY15-20).

These prior increases were reflective of the County's efforts to implement its work associated with the County's National Pollution Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit (discussed in more detail later in this memorandum). For the FY17-22 CIP, DEP is assuming to complete the acreage requirement for retrofit work associated with the 2010-2015 permit by 2020. While the next permit is in flux, DEP is assuming this next permit will include a requirement for another 10 percent of acreage to be addressed, and the FY17-22 Recommended CIP assumes construction work related to this effort will begin in FY19.

The following table shows the Executive's FY17-22 Recommended CIP compared to the latest Approved FY15-20 CIP.

Stormwater Management CIP (in $000s)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**362,934**	**53,345**	**56,724**	**70,268**	**60,412**	**60,456**	**61,729**		
FY17-22 CE Recommended	**347,208**	**55,446**	**44,295**	**57,487**	**55,629**	**65,854**	**67,972**	**54,030**	**46,236**
change from Approved	(15,726)			(12,781)	(4,783)	5,398	6,243		
percent change from Approved	-4.3%			-18.2%	-7.9%	8.9%	10.1%		

Overall, there are eight ongoing projects and one new project.

The minor reduction in six-year spending is actually made up of some significant changes in various project costs (both up and down) as reflected in the chart below. Most notably, the SM Retrofit – Countywide project is declining in cost, while the Misc Stream Valley Improvements, SM Retrofit – Roads, and Watershed Restoration – Interagency projects are increasing. One new project, Wheaton Regional Dam Flooding Mitigation, is also included.[1]

Stormwater Management Projects: Six-Year Spending Changes

	Six-Year Costs		Change	
Project	App	CE	$$	%
Facility Planning: SM	7,679	6,671	(1,008)	-13.1%
Misc Stream Valley Improvements	42,573	61,273	18,700	43.9%
SM Facility Major Structural Repair	23,070	21,710	(1,360)	-5.9%
SM Retrofit - Government Facilities	17,732	12,678	(5,054)	-28.5%
SM Retrofit - Roads	98,420	116,843	18,423	18.7%
SM Retrofit - Schools	24,930	13,253	(11,677)	-46.8%
SM Retrofit - Countywide	146,470	97,780	(48,690)	-33.2%
Watershed Restoration - Interagency	2,060	11,950	9,890	480.1%
Wheaton Regional Dam Flooding Mitigation	-	5,050	5,050	n/a
Total Expenditure Changes	**362,934**	**347,208**	**(15,726)**	**-4.3%**

The sources of funds for the Approved FY15-20 CIP and the FY17-22 Recommended CIP are shown in the following chart.

Stormwater Management CIP Funding (in $000s)

	FY15-20 Total	FY17-22 Total	% of Total	Change from FY15-20 $$	Change from FY15-20 %
Six-Year Total	**362,934**	**347,208**		**(15,726)**	**-4.3%**
State Aid	58,526	30,000	8.6%	(28,526)	-48.7%
SWM Waiver Fees	-	1,200	0.3%	1,200	n/a
Federal Aid	(263)	2,000	0.6%		n/a
Water Quality Protection Charge - Bonds	283,742	302,487	87.1%	18,745	6.6%
Water Quality Protection Charge	20,929	11,521	3.3%	(9,408)	-45.0%

[1] The increases and decreases in the various projects reflect DEP's interest in keeping six-year expenditures within a manageable level for fiscal planning. DEP has indicated that in its next fiscal plan for the Water Quality Protection Fund, it will seek to have rates increase no more than 10 percent each year over the six-year period. Rate-related revenue makes up the vast majority of resources for the WQPF to cover both operating and capital expenses.

Five years ago, the Council approved the Executive's recommendation to use bonds paid for with Water Quality Protection Charge (WQPC) revenue to cover the majority of spending in this program (an estimated 87.1 percent of total recommended FY17-22 expenditures). These bonds are separate from the County's General Obligation Bond Spending Affordability limits. For FY17-22, WQPC bonds are recommended to increase, while WQPC current revenue and state aid are assumed to decline. State aid assumptions are discussed later.

National Pollution Discharge Elimination System
Municipal Separate Storm Sewer System Discharge
(NPDES-MS4) Permit

The T&E Committee received a briefing from DEP this past January on the status of the most recent MS4 permit (which expired in February 2015). Below is some summary information presented at that meeting.

NPDES-MS4 Permit Status

DEP is the lead department coordinating a multi-department/agency effort to meet the requirements of the five-year MS4 permit[2] issued to the County by MDE on February 16, 2010. This permit expired in February 2015. However, expired permits are assumed to remain in effect pending issuance of a succeeding permit by MDE.

However, clouding this issue somewhat is the fact that this now expired permit has been under legal challenge. In April 2015, the Court of Special Appeals affirmed a Circuit Court decision to remand the permit back to the Maryland Department of the Environment (MDE).[3] The Court of Special Appeals agreed with the Circuit Court that the permit did not "afford an appropriate opportunity for public notice and comment and because it lacks crucial details that would explain the County's stormwater management obligations." MDE is appealing the case to the Court of Appeals and has not moved forward with a next generation permit for Montgomery County, pending the outcome of this case.

Some background information on the now expired MS4 Permit and its funding are provided below.

NPDES-MS4 Permit Requirements

The County's Coordinated Implementation Strategy (CCIS)[4] (dated January 2012) provides the planning basis for the County to meet the following goals, as required in the County's (now expired) NPDES-MS4 Permit:

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[2] The County's MS4 permit is available on the DEP website at:
https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/water-reports/npdes/MOCO_MS4_Permit.pdf
[3] Maryland Department of the Environment, et al. v. Anacostia Riverkeeper, et al., 222 Md. App. 153 (2015).
[4] The County's Coordinated Implementation Strategy (January 2012) is available on the DEP website at:
https://www.montgomerycountymd.gov/DEP/Resources/Files/ReportsandPublications/Water/Countywide%20Implementation%20Strategy/Countywide-coordinated-implemented-strategy-12.pdf

1. Meet Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) approved by EPA.

2. Provide additional stormwater runoff management on impervious acres equal to 20 percent of the impervious area for which runoff is not currently managed, to the maximum extent practicable (MEP). ***This requirement continues to be the primary driver of DEP's CIP expenditures, and progress in meeting this goal is discussed in more detail below.***

3. Meet commitments in the Trash Free Potomac Watershed Initiative 2006 Action Agreement, which include support for regional strategies and collaborations aimed at reducing trash, increasing recycling, and increasing education and awareness of trash issues throughout the Potomac Watershed.

4. Educate and involve residents, businesses, and stakeholder groups in achieving measurable water quality improvements.

5. Establish a reporting framework that will be used for annual reporting, as required in the County's NPDES-MS4 Permit.

6. Identify necessary organizational infrastructure changes needed to implement the Strategy.

While DEP has made substantial progress over the past five years, DEP has not achieved the 20 percent impervious area control goal (#2 above).

Watershed Restoration Requirements

The largest costs in the stormwater management CIP are for stormwater retrofit work.

The most recent permit's 20% requirement for stormwater management noted above translates to an additional 3,777 acres of impervious area restoration to be completed by the County. As noted in the County's August 2015 Watershed Restoration Achievements report:

> *at the end of the third generation MS4 permit term (February 16, 2015), the County had completed restoration treating 1,726 acres of impervious area or its equivalent, with restoration work treating another 197 acres under construction (acres or projects referred to as "in construction"). Restoration projects to treat an additional 2,431 acres were under contract for design (acres or projects referred to as "in-design").*

While the County had not completed work on the entire 3,777 acre goal in the permit, it had 4,354 acres at some stage of work (in design, in construction, or completed). About 70 percent (3,085 acres) is being addressed through capital projects (such as stream restoration projects and stormwater management retrofits). The next biggest categories are: agency partnerships (642 acres), new development/redevelopment (305 acres), and management programs (such as street sweeping and catch basin cleaning (249 acres)).

This effort represents a major ramp-up in work (and costs) over the past five years. While the work with MDE on the next generation permit is stalled (pending the outcome of the legal case noted above), DEP will be proceeding with this ongoing work.

What will be interesting to see in the coming years is whether (and by how much) water quality improvements occur in the project areas (and whether the associated TMDLs are met). These results, in turn, can inform future permit priorities to ensure the County's large investment in funding is allocated where it can have the biggest impact on water quality.

Cost Implications

As previously discussed by the Committee, the cost implications for implementation of the MS4 permit are substantial. Two years ago, DEP estimated the permit costs to be about $305 million through 2015 and nearly $1.9 billion through 2030.

Over the past decade, the DEP budget (not counting the Division of Solid Waste Services) has become dominated by water quality-related efforts. In FY16, the Water Quality Protection Fund budget is $23.3 million compared to $2.2 million in the General Fund, or 91 percent.

Water Quality Protection Fund and Charge

DEP's MS4 work (both operating and capital) is budgeted within the County's Water Quality Protection Fund. This self-supporting fund draws its revenue primarily from the WQPC (an estimated $32.6 million in FY16) as well as from the County's bag tax (an estimated $2.4 million in FY16).

The Fund and charge were created in 2001, when the Council approved Bill 28-00.

Three years ago, the Council enacted Bill 34-12 and approved Executive Regulations 17-12AM and 10-13. The bill and regulations included a number of changes to the charge, such as: broadening the charge to include all non-residential properties, establishing a 7 tier rate structure for residential properties, establishing credits for on-site stormwater management practices, and establishing a hardship exemption for residential properties and non-profit organizations. A three-year phase-in period for those properties that experienced an increase in assessments as a result of the legislation was also included.

This past November, at the County Executive's request, the Council enacted legislation (Bill 45-15, Stormwater Management - Water Quality Protection Charge - Curative Legislation) to designate the Water Quality Protection Charge as an excise tax (rather than a fee) to address concerns raised in a Circuit Court opinion.[5]

DEP is also considering additional substantive changes to the Water Quality Protection Charge credits. Legislation is expected to be transmitted to the Council shortly.

[5] Paul N. Chod v. Board of Appeals for Montgomery County (Civil No.35398704-V, entered July 23, 2015).

State Aid Assumptions

Council Staff asked Executive staff to elaborate on the state aid assumptions for FY17-22 (which reflects about half of what was reflected in the FY15-20 CIP. Below is DEP's response:

a. How were the state aid amounts for each project determined?

State aid was projected for this budget submission taking into account that the State of Maryland had indicated a desire to provide funding. However, state grant funding is in greater demand and funds potentially less accessible given multiple other jurisdictions applying.

In 2012, we received a grant from the Department of Natural Resources for $19.8M.

For planning purposes in this budget submission, DEP assumed State Aid in the CIP of $5 million per year. This $5 million amount was then distributed among the three referenced CIP projects based on past experience, not specific State Aid requests. In 2016, DEP has requested specific State Aid (see next response); actual amounts of State Aid will need to be incorporated into the CIP budget by amendment.

b. What are the chances the numbers could be higher or lower?

It is unknown how much funding will actually be received. Based on interest from other jurisdictions, it is possible that the numbers could be lower than what is requested.

In FY16, the DEP is pursuing the following State aid funding:

- *MDE Water Quality Financing Administration FY18 Capital Project Financing Assistance for $10M to support the construction of stormwater management retrofit and green infrastructure (LID/ESD) projects.*
- *DNR Chesapeake and Atlantic Coastal Bays Trust Fund for approximately $12M to support the construction of stream restoration, stormwater management retrofits and green infrastructure (LID/ESD) projects.*

We are pursuing the two funding sources to leverage our resources in FY17 and FY18. If the County is successful in being awarded the full request, an amendment to the budget would be required.

c. What is the impact on County resources if the state aid is higher or lower than assumed (i.e., will the County cost change or will the scope of work to be done change)?

The State Aid amounts in the expenditure schedule are included in the total scope of work for the project but the actual implementation rate for these expenditures will depend on total collections of State Aid. The department will not always adjust County contributions to keep up with the same implementation schedule if State collections are lower. If collections of State Aid are lower, the implementation of projects budgeted for State Aid will have to be reevaluated based on total available resources. In some cases, if a project is identified as being eligible for State Aid may be preferable to implement and other available County

resources could be used rather than State Aid. However, the nature and timing of project implementation will always need to be revaluated based on collections of State Aid and total available resources.

Project Review

NOTE: Project schedules for completed work and work ongoing through FY18 are attached on ©28-33.

Wheaton Regional Dam Flooding Mitigation (PDF on ©18)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	-	-	-	-	-	-	-		
FY17-22 CE Recommended	**5,050**			**2,950**	**200**	**850**	**1,050**		
change from approved	5,050			2,950	200	850	1,050		
percent change from approved	#DIV/0!			#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		

This new project provides for the acquisition of properties located in Wheaton along Glenhaven Drive and Dennis Avenue, which are prone to flooding during a 100 year storm event as a result of the Wheaton Regional Dam downstream, the Dennis Avenue Culvert, and an undersized stream channel along Glenhaven Drive. The properties acquired will be turned into non-structural recreational open space for the community.

DEP has begun the process with the Federal Emergency Management Agency (FEMA) to update the boundaries of the 100 year floodplain in this area. The County plans to seek hazard mitigation assistance grants for property acquisition.

According to DEP, there are no feasible options for upgrading the dam, the culvert, and/or the stream channel to avoid future potential flooding.

DEP is seeking to voluntarily acquire the properties and has met with the community and the affected property owners to discuss the issue. DEP can provide an update on these efforts at the Committee meeting.

Facility Planning: SM (PDF on ©14-15)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**7,679**	**1,150**	**1,250**	**1,250**	**1,250**	**1,340**	**1,439**		
FY17-22 CE Recommended	**6,671**			**2,126**	**1,323**	**997**	**773**	**799**	**653**
change from approved	(1,008)			876	73	(343)	(666)		
percent change from approved	-13.1%			70.1%	5.8%	-25.6%	-46.3%		

This project funds evaluations of watershed needs and identifies alternatives to address these needs, including possible CIP projects. It provides approximately 30 percent design completion to projects generated from this program. The project is funded with Water Quality Protection Fund current revenue dollars.

As noted in DEP's response below, there is a bump in expenditures shown in FY17 because of prior year work slipping into FY17. The planning work is projected to tail off over time as more work moves into construction.

The bump in expenditures in FY17 is primarily due to a deferral of Facility Planning expenditures from FY16. This deferral is due to: 1) a hold on planning expenditures for several months in 2015 as a result of bond funding uncertainty related to the Chod litigation; and 2) some uncertainty over the next MS4 Permit requirements. There is a gradual decrease in funding expenditures after FY18 since DEP plans to get most of the Facility Planning completed for the next permit in FY17 and FY18.

SM Retrofit: Countywide (PDF on ©12-13)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**146,470**	**18,726**	**22,968**	**23,408**	**23,732**	**27,696**	**29,940**		
FY17-22 CE Recommended	**97,780**			**21,939**	**19,225**	**19,425**	**18,000**	**9,654**	**9,537**
change from approved	(48,690)			(1,469)	(4,507)	(8,271)	(11,940)		
percent change from approved	-33.2%			-6.3%	-19.0%	-29.9%	-39.9%		

This project provides for the design and construction of stormwater management retrofit projects Countywide. The list of projects to be done is summarized on the PDF, with more detail and cost information provided on ©31-32. The project is funded with WQPF bonds and current revenue as well as some state aid ($2.0 million per year assumed).

The Executive is recommending a total of $97.8 million over the six-year period (a decrease of 33 percent from the FY15-20 CIP.

Council Staff asked DEP about the large decrease in this project. DEP noted that:

The SM Retrofit Countywide CIP project is typically (but not exclusively) used for stormwater pond retrofits. The expenditure decrease in this project in the outer years of the 6-year budget mirrors a corresponding expenditure increase in the SM Retrofit – Road CIP project. This is due to DEP's planned use of a Public/Private Partnership to do more of the IA retrofitting using "green infrastructure", specifically green infrastructure along County roads. This planned increase in green infrastructure results in lower expenditures for the Countywide CIP project.

Misc. Stream Valley Improvements (PDF on ©10-11)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**42,573**	**6,393**	**5,440**	**9,640**	**8,900**	**6,100**	**6,100**		
FY17-22 CE Recommended	**61,273**			**8,880**	**10,952**	**12,571**	**13,716**	**8,548**	**6,606**
change from approved	18,700			(760)	2,052	6,471	7,616		
percent change from approved	43.9%			-7.9%	23.1%	106.1%	124.9%		

This project funds the design and construction of restoration and corrective measures to stream reaches having severe channel erosion, sedimentation, habitat degradation, and flooding problems. Priorities are based on watershed studies done out of the Facility Planning: SM project.

The Executive is recommending a total of $61.3 million over the six-year period (an increase of nearly 44 percent from the approved six-year FY15-20 total of $42.6 million). This increase is on top of an even larger increase two years ago within the FY15-20 CIP.

According to DEP, the large increase is a result of new projects and higher level of effort, i.e., more and larger stream subprojects were added to the FY17-22 CIP budget as compared to the FY15-20 CIP budget. Additionally, more projects are expected to move into the construction phase.

During its stream evaluations, DEP also identifies storm drain outfall repair needs and coordinates with DOT's Outfall Repairs project. Sewer issues are also identified and forwarded to WSSC.

The project is funded mostly with Water Quality Protection Bonds and with some state aid, WQPC current revenue, and stormwater management waiver fees. For the FY17-22 CIP, the Executive is recommending the same annual level of state aid assumed in the FY15-20 CIP for years FY17 and beyond ($1.0 million per year).

SM Retrofit: Schools (PDF on ©8-9)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**24,930**	**3,470**	**6,280**	**3,480**	**3,900**	**3,900**	**3,900**		
FY17-22 CE Recommended	**13,253**			**2,486**	**1,948**	**2,505**	**2,287**	**2,141**	**1,886**
change from approved	(11,677)			(994)	(1,952)	(1,395)	(1,613)		
percent change from approved	-46.8%			-28.6%	-50.1%	-35.8%	-41.4%		

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) facilities, parking lots, and other impervious areas.

The Executive is recommending a six-year total of $13.3 million, funded mostly with WQPF bonds and the balance from WQPF current revenue. The project is recommended to increase by 24 percent over the six-year period, primarily because of prior project delays.

DEP has noted that the fluctuations are primarily based on the use of actual cost estimates (and schedules) for individual subprojects.

SM Retrofit: Roads (PDF on ©6-7)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**98,420**	**12,740**	**14,080**	**26,320**	**16,010**	**15,170**	**14,100**		
FY17-22 CE Recommended	**116,843**			**9,426**	**11,182**	**25,038**	**26,115**	**23,838**	**21,244**
change from approved	18,423			(16,894)	(4,828)	9,868	12,015		
percent change from approved	18.7%			-64.2%	-30.2%	65.0%	85.2%		

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 controls.

The Executive is recommending a six-year total of $116.8 million, funded with WQPF bonds, current revenue, and state aid. The six-year total is recommended to increase by 18.7 percent above the FY15-20 CIP.

DEP is expecting to move forward with a Public/Private Partnership (P3) effort for its roads retrofits (all assumed to be "green" infrastructure) that is assumed to be in place by FY19. This approach is similar to what is being done in Prince George's County (which the T&E Committee discussed in January 2015). DEP expects the P3 model to save the County approximately 40 percent in costs by hiring private firms to plan, design, and construct various stormwater management devices along roads throughout the County. DEP expects to achieve up to half of its required retrofit acreage for the next MS4 permit through this P3 approach.

At the CIP Public Hearing on February 11, the Audubon Naturalist Society (ANS) testified (see ©34-49) with suggested text changes to 17 specific DOT CIP projects to add "green-street" principals and to work with DEP on these efforts. The ANS testimony also said that DEP's stormwater retrofit programs should be "100 percent green." Council Staff asked DEP to respond to these points.

The Department is supportive of the use of "green stormwater practices". We are making assumptions and doing preparatory work for increased effort related to green infrastructure in the future permit.

In the interim, the Department has worked with the Stormwater Partners to agree on a consistent definition for green infrastructure. The definition is:

"Green infrastructure is a cost-effective, resilient approach to managing wet weather impacts that provides many community benefits. While single-purpose gray stormwater infrastructure—conventional piped drainage and water treatment systems—is designed to move urban stormwater away from the built environment, green infrastructure reduces and treats stormwater at its source while delivering environmental, social, and economic benefits.

When rain falls in natural, undeveloped areas, the water is absorbed and filtered by soil and plants. Stormwater runoff is cleaner and less of a problem. Green infrastructure uses vegetation, soils, and other elements and practices to restore some of the natural processes required to manage water and create healthier urban environments. At the city or county scale, green infrastructure is a patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the neighborhood or site scale, these stormwater management systems mimic nature, soak up and infiltrate water".

Additionally, we are developing a policy statement to bring focus to the use of green infrastructure in our project designs and programmatic decisions. Further, we will be defining pilot projects to assist us with gathering information on the unit cost for green infrastructure with an eye towards bringing the unit costs down. That being said, green street principles or green infrastructure may not be practical for all storm drain projects and currently the unit cost is more expensive than traditional stormwater management practices. However, Environmental Site Design is favorably considered in the design of the stormwater restoration projects. Additionally, through the Rainscapes program, the Department supports and encourages the increased use of green infrastructure.

In the next permit, the County is planning for the P3 to design, permit, construct, maintain and potentially finance work that will be used for half the impervious acre requirements. All the work expected to be done by the P3 will be green infrastructure.

SM Retrofit: Government Facilities (PDF on ©4-5)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**17,732**	**3,026**	**2,816**	**2,820**	**3,270**	**2,900**	**2,900**		
FY17-22 CE Recommended	**12,678**			**3,452**	**2,314**	**2,239**	**1,718**	**1,524**	**1,431**
change from approved	(5,054)			632	(956)	(661)	(1,182)		
percent change from approved	-28.5%			22.4%	-29.2%	-22.8%	-40.8%		

This project provides for the design and construction of Environmentally Sensitive Design (ESD) and Low Impact Development (LID) stormwater management devices at County facilities. The Executive is recommending a six-year total of $12.7 million, funded mostly with WQPC bonds along with some WQPF current revenue. The project is recommended to decrease by 28.5 percent over the six-year period based on the use of actual cost estimates (and schedules) for individual subprojects.

Stormwater Management Facility Major Structural Repair (PDF on ©3)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**23,070**	**7,530**	**3,540**	**3,000**	**3,000**	**3,000**	**3,000**		
FY17-22 CE Recommended	**21,710**			**4,629**	**3,404**	**2,169**	**3,585**	**4,852**	**3,071**
change from approved	(1,360)			1,629	404	(831)	585		
percent change from approved	-5.9%			54.3%	13.5%	-27.7%	19.5%		

This project provides for the design and construction of major structural repairs to County maintained stormwater management facilities. Smaller, less complex projects are funded out of the Operating Budget.

The Executive is recommending a six-year total of about $21.7 million (a decrease of $1.4 million). The change in six-year costs is the result of the implementation schedule and the addition of FY21 and FY22 to the program. There was a large bump in expenditures in FY15 as a result of including the hydraulic dredging of two large lakes: Lake Whetstone in Montgomery Village and Gunners Lake in Germantown (each costing about $3.0 million).

The project is funded mostly with WQPF Bonds and with some WQPF current revenue.

Watershed Restoration – Interagency (PDF on ©16-17)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**2,060**	**310**	**350**	**350**	**350**	**350**	**350**		
FY17-22 CE Recommended	**11,950**			**1,599**	**5,081**	**60**	**728**	**2,674**	**1,808**
change from approved	9,890			1,249	4,731	(290)	378		
percent change from approved	480.1%			356.9%	1351.7%	-82.9%	108.0%		

This project is an ongoing series of subprojects that are being constructed in cooperation with the US Army Corps of Engineers. Expenditures by the Corps of Engineers do not show up in the PDF. The Corps pays 65 to 75 percent of the total costs.

For FY17-22, the Executive is recommending $11.95 million in expenditures, which represents a very large increase ($9.9 million) from the FY15-20 Approved CIP.

Council Staff asked DEP the reason for the big increases showing in FY17 and FY18. DEP noted that it is dependent on the Corps of Engineers' work schedule and that the fluctuations in the expenditures relate to this schedule.

Council Staff Recommendation

Council Staff recommends approval of the Stormwater Management CIP as recommended by the County Executive.

FY17-22 STORM DRAINS CIP

NOTE: For the Approved FY15-20 CIP, the County Executive recommended, and the Council approved, having the Storm Drains CIP funded from Water Quality Protection Charge (WQPC) bonds and WQPC current revenue, consistent with the transition made over several years to move Storm Drain operating costs from the County's General Fund to the WQPC. Given this change, any potential expenditure changes in these projects do not affect the County's affordability calculations with regard to G.O. bonds or general current revenue.

Summary

The Department of Transportation (DOT) Division of Transportation Engineering manages the County storm drains program. Properly functioning storm drains remove excess water from the roads, ensuring safer road conditions while also protecting roads from water damage. Properly functioning storm drains also protect adjacent properties from water runoff damage. Work is identified through requests for assistance that come from property owners as well as from government agencies. DOT works in partnership with the state and other municipalities when state roads and/or municipal properties are involved. DOT staff will be available to provide a brief overview of the storm drains program.

An excerpt from the Executive's Recommended FY17-22 CIP for storm drains is attached on ©19-27. The Executive is recommending $16.8 million for FY17-22 for four Storm Drain projects. The following table shows the recommendation by fiscal year compared to the latest Approved FY15-20 CIP.

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY13-18 Latest Approved	**18,176**	**2,676**	**4,276**	**2,806**	**2,806**	**2,806**	**2,806**		
FY15-20 CE Recommended	**16,836**			**2,806**	**2,806**	**2,806**	**2,806**	**2,806**	**2,806**
change from amended	(1,340)			-	-	-	-		
percent change from approved	-7.4%			0.0%	0.0%	0.0%	0.0%		

For the FY17-22 CIP, the County Executive is recommending a decrease of $1.3 million (or -7.4 percent) over the latest Approved CIP. The six-year decrease in expenditures is primarily the result of the completion of two major projects: a culvert replacement on Connecticut Avenue and a culvert repair on Sunflower Drive. Both items were included in the Storm Drain Culvert Replacement project in FY16. No new projects are recommended.

The sources of funds for the Storm Drains CIP are shown in the following chart.

Storm Drains CIP (in $000s)

	FY15-20 Total	FY17-22 Total	$$$ Change	% Change
Total	**18,176**	**16,836**	**(1,340)**	**-7.4%**
Water Quality Protection Charge	8,112	1,740	(6,372)	-78.6%
Water Quality Protection Bonds	10,064	15,096	5,032	n/a

The chart shows that Water Quality Protection Charge funding is being reduced as Water Quality Protection Bonds are increased. Some storm drain projects can involve State or other outside participation, although none of these sources are assumed in the Approved or Recommended CIP at this time.

Project Review

NOTE: Project schedules for completed work and ongoing work are attached on ©50-58.

Facility Planning: Storm Drains (PDF on ©20-21)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**1,660**	**250**	**250**	**290**	**290**	**290**	**290**		
FY17-22 CE Recommended	**1,740**			**290**	**290**	**290**	**290**	**290**	**290**
change from approved	80			-	-	-	-		
percent change from approved	4.8%			0.0%	0.0%	0.0%	0.0%		

This project provides for the investigation and analysis of various storm drainage assistance requests initiated by private citizens and public agencies. Depending on the complexity of the project, in-house staff or consultants design projects to a 35 percent design level. At that point, projects that cost over $500,000 become stand-alone projects if approved. Projects costing less than $500,000 are constructed in the Storm drain: General project.

The County Executive is recommending $290,000 annually in FY17 and beyond (consistent with the approved project), all assuming Water Quality Protection Charge current revenue funding.

A large portion of funds from this project covers the costs of responding to Drainage Assistance Requests (DARs), background research, data collection, survey, and concept alternative evaluation. Requests continue to be received on a regular basis.

In terms of DOT's response time for DAR requests, DOT has noted:

> *Typical response to an initial DAR request is a phone call or email within 48 hours. If a site visit is required, then the site visit is conducted within two weeks. Every DAR is logged into a database and the status is tracked. Response to residents and field inspections are performed quickly. What is your time goal for determining whether to move forward with planning work on a drainage assistance request? Once a DAR is evaluated and the scope and potential cost is estimated, a decision with a plan of action is typically made within one to two weeks of the field inspection.*

Outfall Repairs (PDF on ©22-23)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**2,700**	**426**	**426**	**462**	**462**	**462**	**462**		
FY17-22 CE Recommended	**2,772**			**462**	**462**	**462**	**462**	**462**	**462**
change from approved	72			-	-	-	-		
percent change from approved	2.7%			0.0%	0.0%	0.0%	0.0%		

This project provides for the repair of existing storm drain outfalls into stream valleys. The priorities for this project are developed in coordination with DEP. In addition to planned projects (see below), DOT also receives and coordinates efforts for one or two requests per month from various sources, including DOT, DHS, DEP, WSSC, and M-NCPPC.

For FY17-22, the County Executive recommends an annual expenditure level of $462,000, which is the same annual level as in the approved CIP (for FYs17-20).

Storm Drain Culvert Replacement (PDF on ©24)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**8,800**	**1,200**	**2,800**	**1,200**	**1,200**	**1,200**	**1,200**		
FY17-22 CE Recommended	**7,200**			**1,200**	**1,200**	**1,200**	**1,200**	**1,200**	**1,200**
change from approved	(1,600)			-	-	-	-		
percent change from approved	-18.2%			0.0%	0.0%	0.0%	0.0%		

This project provides for the replacement of failed storm drain pipes and culverts that are less than 6 feet in roadway longitudinal length.[6] The project does not make major changes to the location or size of the existing storm drain facilities.

In FY16, there was a bump in expenditures to address two urgent needs, including a culvert replacement on Connecticut Avenue and a culvert repair on Sunflower Drive. Both items were included in the Storm Drain Culvert Replacement project in FY16.

For FY17-22, the County Executive recommends returning to the typical annual funding level of $1.2 million, which is the same as was previously approved for FY17 through FY20.

In the FY15-20 CIP, funding was included in this project for an asset inventory and condition assessment. DOT (Highway Services) has acquired several GIS tablets and the necessary software to capture location and other important data to build a complete storm drain inventory. Work on this project is expected to begin as early as this spring.

According to DOT, there is a backlog of failed storm drains and culverts in the County. The listing on ©55 notes about $4.5 million of currently unfunded work identified for FY17 and FY18 (The Connecticut Avenue and Sunflower work totaling $1.7 million was funded in FY16). Emergency work is also commonly added when identified However, the Recommended CIP includes only $2.4 million ($1.2 million per year) during those same two years. According to DOT staff, the Executive may seek additional funding in FY18 or FY19 after additional data is collected through the asset inventory noted earlier. **Given CIP spending affordability concerns, Council**

[6] Structures longer than 6 feet in longitudinal length would continue to be addressed in the Bridge Renovation Program project (No. 509753).

Staff concurs. However, if urgent projects are later identified, additional funding may be needed through a supplemental/CIP amendment.

Storm Drain General (PDF on ©25-26)

	Six-Year	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY15-20 Latest Approved	**5,016**	**800**	**800**	**854**	**854**	**854**	**854**		
FY17-22 CE Recommended	**5,124**			**854**	**854**	**854**	**854**	**854**	**854**
change from approved	108			-	-	-	-		
percent change from approved	2.2%			0.0%	0.0%	0.0%	0.0%		

This project includes any storm drain projects costing less than $500,000, as well as funding to address "spot" projects that can be addressed relatively quickly throughout the year. Projects are prioritized based on their public safety impact (if any), cost, readiness (i.e., facility planning must be completed), potential community benefits, and order the issue was first identified (if projects are of equal merit).

For FY17-22, the County Executive recommends an annual funding level of $854,000 which is the same as approved for FY17 through FY20 (which is $54,000 per year higher than FY15 and FY16). A two-year appropriation has been approved for this project through several CIP cycles to provide flexibility to DOT to plan and complete projects through its work order contractor without having to have artificial delays waiting for the next fiscal year to begin. However, in practice, DOT has noted that it has exhausted its past two-year appropriations ($1.6 million) after 14 months. Given this, a full two-year amount of work would require about $2.7 million (or $1.35 million per year). **Given CIP spending affordability concerns, Council Staff concurs with the Executive's recommended annual level of expenditures. However, the Committee may wish to consider a higher annual level of expenditures in the project in the next CIP (FY19-24).**

Wapakoneta Road Improvements (PDF on ©66)

	Total	Thru FY14	Six-Year	FY15	FY16	FY17
FY15-20 Latest Approved	**1,563**	**249**	**1,314**	**96**	**968**	**250**
FY17-22 CE Recommended	**1,314**	**249**	**250**	**165**	**899**	**250**
change from approved			(1,064)			-
percent change from approved			-81.0%			0.0%

Note: This project was approved in May 2010 in the FY11-16 CIP. However, because land acquisition was involved, the project was approved as a road project in order to avail the County of the "quick take" process and expedite the project implementation and minimize costs. Therefore, project costs are not reflected in the overall Storm Drains CIP cost totals noted earlier.

This project provides for reconstruction of pavement and storm drain improvements along Wapakoneta Road between Namakagan Road and Walhonding Road in Glen Echo Heights.[7]

[7] Glen Echo Heights was the subject of a comprehensive study that was completed in August 2007. The study identified a number of roadway and safety issues, as well as stormwater conveyance deficiencies. According to DOT staff, the Glen Echo Heights study area has some of the worst drainage problems in the County. However, the potential scale and cost of the recommended improvements was substantial, and there was disagreement within the Glen Echo Heights Community as to which improvements should be pursued. In addition to roadway and storm drain improvements, the

Design is scheduled to start this summer. The project scope and cost are unchanged from the Approved CIP, with completion scheduled for the summer of 2016. G.O. bonds are the primary funding source, with some intergovernmental revenue from WSSC also assumed.

Council Staff Recommendation

Council Staff recommends approval of the Storm Drains CIP as recommended by the County Executive.

Attachments

- County Executive's Recommended FY17-22 CIP (Excerpt for Stormwater Management)(©1-18)
- County Executive's Recommended FY17-22 CIP (Excerpt for Storm Drains)(©19-27)
- Stormwater Management CIP Project Schedules (©28-33)
- Audubon Naturalist Society/Stormwater Partners Network Public Hearing Testimony, February 11, 2016 (©34-49)
- Storm Drain CIP Project Schedules and other information (©50-59)
- Storm Drain CIP Project Before and After Photos (©60-65)
- Wapakoneta Road Improvements Project Description Form (©66)

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report recommended a number of Low Impact Development (LID) efforts that DEP has included for study and implementation.

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 habitat, 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 habitat and reduce pollution in the Bay and its tributaries.

The objectives of the Stormwater Management program are: protection of natural waterway environments; restoration of streams previously damaged by excessive erosion, sedimentation, and impaired water quality; and prevention or remediation of property damage caused by localized erosion. 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 including new and retrofitted facilities, and maintenance of existing facilities. The WQPC and bonds secured by the WQPC are the main funding mechanisms for the Capital Improvement Program (CIP) projects.

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 National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer system (MS4) permit.

The County's stormwater control requirements are established in the MS4 Permit, issued by the Maryland Department of the Environment. The second generation permit, issued in 2001 required the County to restore 10% of the impervious area 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 3,777 acres of impervious area restoration to be completed by the County. The County has completed restoration of close to 2,000 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. Much of the progress is being made through restoration projects funded through the CIP.

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 will improve the long-term operational effectiveness of these facilities and increase 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 MS-4 permit, continues to act as a model for jurisdictions throughout Maryland who were required to develop and implement a Stormwater Management program. Montgomery County has worked with the State and other counties to assist in the first strategies of many Stormwater Management Implementations throughout Maryland.

The CIP budget represents the resources necessary to complete the requirements of the current permit. It also includes limited resources to begin planning work on future requirements that will be negotiated with the Maryland Department of the Environment and other stakeholders. Additionally, the Department of Environmental Protection (DEP) continues to identify program efficiencies to allow for better informed decision making and better restoration outcomes at reduced costs. These include the increased use of green infrastructure, where appropriate. The Department (DEP) is also exploring an alternative business model using a Public Private Partnership (P3) for future work.

The FY17-22 CIP program for Stormwater Management continues Montgomery County's commitment to treat impervious surfaces within the County to the maximum extent practicable. In FY17-22, the overall level of effort has been adjusted in the active projects to what the Department of Environmental Protection (DEP) concluded was the maximum extent practicable after analyzing the overall program implementation rate to date. As a result of this analysis, total six-year program expenditures have decreased $15.7 million (4.3 percent) below the amended approved FY15-20 six-year program of $362.9 million.

The Department of Transportation (DOT) is also assisting DEP in implementing the MS-4 Permit by: (1) providing opportunities for curb bump-outs and road narrowing where feasible to permit implementation of low-impact development (LID) SWM provisions within the right-of-way; (2) seeking DEP guidance on prioritization of storm drain outfall repairs; (3) 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 MS-4 permit; and (4) holding regular meetings with DEP staff looking for additional areas of cooperation in meeting the MS-4 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.
- Expand the design and construction of environmentally friendly stormwater management techniques known as environmental site design (ESD/green infrastructure) or low impact development (LID) throughout the County, including County facilities.
- Construct new stormwater management facilities and retrofit old stormwater controls to prevent property damage, improve water quality, and protect habitat.
- Perform major structural repairs on public and private stormwater facilities accepted into the County's maintenance program.
- Continue to repair damaged stream channels and tributaries in stream valley parks and priority watersheds.
- Introduce new project, Wheaton Regional Dam Flooding Mitigation, to address flooding issues upstream of Wheaton Dam.

PROGRAM CONTACTS

Contact Jim Stiles of the Department of Environmental Protection at 240.777.7789 or Matt Schaeffer of the Office of Management and Budget at 240.777.2766 for more information regarding this department's capital budget.

CAPITAL PROGRAM REVIEW

A total of eight ongoing projects and one new project are recommended for FY17-22 and described in detail in the Project Description Forms. The Recommended FY17-22 Stormwater Management Program totals $347.2 million, a decrease of $15.7 million or 4.3 percent from the amended approved FY15-20 program of $362.9 million. This reduction assumes progress in the use of a Public Private Partnership (P3) for future work. The stormwater management capital program will be funded primarily by long-term debt financing through the issuance of Water Quality Protection Charge Revenue Bonds (WQPC Bonds) secured by the Water Quality Protection Charge (WQPC). The bonds will cover expenditures incurred for the design and construction of additional stormwater facilities needed to comply with the requirements of the County's MS-4 permit. Also included in the funding of the stormwater management projects is a assumption of $30 million in State Aid based on the State's expressed interest in supporting stormwater management efforts throughout the state.

SM Facility Major Structural Repair (P800700)

Category	Conservation of Natural Resources	Date Last Modified	11/17/14
Sub Category	Stormwater Management	Required Adequate Public Facility	No
Administering Agency	Environmental Protection (AAGE07)	Relocation Impact	None
Planning Area	Countywide	Status	Ongoing

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	11,225	2,592	1,494	7,139	1,408	1,304	1,169	885	1,102	1,271	0
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	25,954	4,513	6,870	14,571	3,221	2,100	1,000	2,700	3,750	1,800	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	37,179	7,105	8,364	21,710	4,629	3,404	2,169	3,585	4,852	3,071	0
FUNDING SCHEDULE ($000s)											
State Aid	905	399	506	0	0	0	0	0	0	0	0
Water Quality Protection Bonds	32,417	3,706	7,307	21,404	4,323	3,404	2,169	3,585	4,852	3,071	0
Water Quality Protection Charge	3,857	3,000	551	306	306	0	0	0	0	0	0
Total	37,179	7,105	8,364	21,710	4,629	3,404	2,169	3,585	4,852	3,071	0

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	0
Appropriation Request Est.	FY 18	3,643
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		21,488
Expenditure / Encumbrances		12,857
Unencumbered Balance		8,631

Date First Appropriation	FY 07	
First Cost Estimate		
Current Scope	FY 17	37,179
Last FY's Cost Estimate		31,735
Partial Closeout Thru		0
New Partial Closeout		0
Total Partial Closeout		0

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 4,200 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

Cost increases reflect anticipated implementation schedule including the addition of FY21 and FY22.

Justification

This project provides for major structural repairs in order to comply with the County's 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: Quince Orchard Manor (Quince Orchard Valley Neighborhood Park), Lake Whetstone, Chadswood, B'nai Israel, Gunners Lake, Colony Pond, Persimmon Tree, Wheaton Branch, Oaks Pond, Peachwood, Hallowell, Railroad Branch, Tamarak, Oakhurst, Home Depot (Aspen Hill) and Garfield Retrofit.

Fiscal Note

No State Aid is assumed for this project in FY17-22. In FY17, funding from the Water Quality Protection Charge was increased reducing the need for Water Quality Protection Bonds.

Disclosures

Expenditures will continue indefinitely.

The Executive asserts that this project conforms to the requirements 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 Retrofit - Government Facilities (P800900)

Category	Conservation of Natural Resources	Date Last Modified	11/17/14
Category	Stormwater Management	Required Adequate Public Facility	No
Administering Agency	Environmental Protection (AAGE07)	Relocation Impact	None
Planning Area	Countywide	Status	Ongoing

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	13,146	7,193	1,426	4,527	1,162	822	708	695	606	534	0
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	3	3	0	0	0	0	0	0	0	0	0
Construction	11,730	2,802	777	8,151	2,290	1,492	1,531	1,023	918	897	0
Other	19	19	0	0	0	0	0	0	0	0	0
Total	**24,898**	**10,017**	**2,203**	**12,678**	**3,452**	**2,314**	**2,239**	**1,718**	**1,524**	**1,431**	**0**
FUNDING SCHEDULE ($000s)											
State Aid	192	192	0	0	0	0	0	0	0	0	0
Water Quality Protection Bonds	22,552	8,643	1,632	12,277	3,051	2,314	2,239	1,718	1,524	1,431	0
Water Quality Protection Charge	2,154	1,182	571	401	401	0	0	0	0	0	0
Total	**24,898**	**10,017**	**2,203**	**12,678**	**3,452**	**2,314**	**2,239**	**1,718**	**1,524**	**1,431**	**0**
OPERATING BUDGET IMPACT ($000s)											
Maintenance				199	67	61	0	29	19	24	
Net Impact				**199**	**67**	**61**	**0**	**29**	**19**	**24**	

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	0
Appropriation Request Est.	FY 18	57
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		19,648
Expenditure / Encumbrances		11,417
Unencumbered Balance		8,231

Date First Appropriation	FY 09	
First Cost Estimate		
Current Scope	FY 17	24,898
Last FY's Cost Estimate		27,819
Partial Closeout Thru		0
New Partial Closeout		0
Total Partial Closeout		0

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

Cost decreases reflect anticipated implementation schedule including the addition of FY21 and FY22.

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

No State Aid is assumed for this project in FY17-22. Funding schedule may need to be revised based on actual State Aid commitments. In FY17, funding from the Water Quality Protection Charge 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 Environment. Expenditures also include activities associated with an increased emphasis on Green Infrastructure methods in MS4 projects.

Disclosures

Expenditures will continue indefinitely.

The Executive asserts that this project conforms to the requirements 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	11/17/14
Category	Stormwater Management	Required Adequate Public Facility	No
Administering Agency	Environmental Protection (AAGE07)	Relocation Impact	None
Planning Area	Countywide	Status	Ongoing

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	20,963	3,689	2,930	14,344	2,995	3,332	3,709	1,786	1,278	1,244	0
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	111,880	7,122	2,259	102,499	6,431	7,850	21,329	24,329	22,560	20,000	0
Other	1	1	0	0	0	0	0	0	0	0	0
Total	**132,844**	**10,812**	**5,189**	**116,843**	**9,426**	**11,182**	**25,038**	**26,115**	**23,838**	**21,244**	**0**
FUNDING SCHEDULE ($000s)											
State Aid	15,285	3,185	100	12,000	2,000	2,000	2,000	2,000	2,000	2,000	0
Water Quality Protection Bonds	114,503	7,627	3,291	103,585	6,168	9,182	23,038	24,115	21,838	19,244	0
Water Quality Protection Charge	3,056	0	1,798	1,258	1,258	0	0	0	0	0	0
Total	**132,844**	**10,812**	**5,189**	**116,843**	**9,426**	**11,182**	**25,038**	**26,115**	**23,838**	**21,244**	**0**
OPERATING BUDGET IMPACT ($000s)											
Maintenance				6,815	515	1,018	471	1,049	1,996	1,766	
Net Impact				**6,815**	**515**	**1,018**	**471**	**1,049**	**1,996**	**1,766**	

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	-9,876
Appropriation Request Est.	FY 18	0
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		53,830
Expenditure / Encumbrances		16,580
Unencumbered Balance		37,250

Date First Appropriation	FY 13	
First Cost Estimate		
Current Scope	FY 17	132,844
Last FY's Cost Estimate		111,815
Partial Closeout Thru		0
New Partial Closeout		0
Total Partial Closeout		0

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. The construction amounts include costs for a public private partnership scheduled to start in FY19.

Cost Change
Cost increases reflect anticipated implementation schedule including the addition of FY21 and FY22.

Justification
This project supports the requirements of the county's 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 new stand alone project includes all the 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 Franklin Knolls, Springbrook, Cannon Road, Derrydown, Glenmont Forest, Wheaton Woods, and Manor Woods green streets.

Fiscal Note
While the State of Maryland has indicated a desire to provide funding, all indicated State Aid is preliminary and unappropriated in FY17-22. Funding may need to be revised based on actual State Aid commitments. In FY17, the Water Quality Protection Charge 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 Environment. Expenditures also include activities associated with an increased emphasis on Green Infrastructure methods in MS4 projects and preparation for a Public Private Partnership procurement in FY19.

Disclosures

Expenditures will continue indefinitely.

The Executive asserts that this project conforms to the requirements 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	11/17/14
Category	Stormwater Management	Required Adequate Public Facility	No
Administering Agency	Environmental Protection (AAGE07)	Relocation Impact	None
Planning Area	Countywide	Status	Ongoing

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	7,023	972	865	5,186	1,050	918	968	956	751	543	0
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	8,651	0	584	8,067	1,436	1,030	1,537	1,331	1,390	1,343	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	**15,674**	**972**	**1,449**	**13,253**	**2,486**	**1,948**	**2,505**	**2,287**	**2,141**	**1,886**	**0**
FUNDING SCHEDULE ($000s)											
Water Quality Protection Bonds	14,591	972	654	12,965	2,198	1,948	2,505	2,287	2,141	1,886	0
Water Quality Protection Charge	1,083	0	795	288	288	0	0	0	0	0	0
Total	**15,674**	**972**	**1,449**	**13,253**	**2,486**	**1,948**	**2,505**	**2,287**	**2,141**	**1,886**	**0**
OPERATING BUDGET IMPACT ($000s)											
Maintenance				147	33	15	28	20	30	22	
Net Impact				147	33	15	28	20	30	22	

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	-5,104
Appropriation Request Est.	FY 18	0
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		13,390
Expenditure / Encumbrances		2,124
Unencumbered Balance		11,266

Date First Appropriation	FY 13	
First Cost Estimate		
Current Scope	FY 17	15,674
Last FY's Cost Estimate		26,455
Partial Closeout Thru		0
New Partial Closeout		0
Total Partial Closeout		0

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

Cost decreases reflect anticipated implementation schedule including the addition of FY21 and FY22.

Justification

This project supports the requirements of the County's 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

In FY17, some funding was reduced from Water Quality Protection Bonds and was replaced with the Water Quality Protection Charge. 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. Expenditures also include activities associated with an increased emphasis on Green Infrastructure methods in MS4 projects.

Disclosures

Expenditures will continue indefinitely.

The Executive asserts that this project conforms to the requirements 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.

Misc Stream Valley Improvements (P807359)

tegory	Conservation of Natural Resources	Date Last Modified	11/17/14
Category	Stormwater Management	Required Adequate Public Facility	No
uministering Agency	Environmental Protection (AAGE07)	Relocation Impact	None
Planning Area	Countywide	Status	Ongoing

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	17,683	1,444	2,252	13,987	2,459	2,732	2,892	2,859	1,814	1,231	0
Land	40	2	38	0	0	0	0	0	0	0	0
Site Improvements and Utilities	7	1	6	0	0	0	0	0	0	0	0
Construction	52,494	2,653	2,555	47,286	6,421	8,220	9,679	10,857	6,734	5,375	0
Other	35	35	0	0	0	0	0	0	0	0	0
Total	**70,259**	**4,135**	**4,851**	**61,273**	**8,880**	**10,952**	**12,571**	**13,716**	**8,548**	**6,606**	**0**
FUNDING SCHEDULE ($000s)											
State Aid	9,560	2,799	761	6,000	1,000	1,000	1,000	1,000	1,000	1,000	0
Stormwater Management Waiver Fees	1,200	0	0	1,200	200	200	200	200	200	200	0
Water Quality Protection Bonds	57,891	1,336	3,181	53,374	6,981	9,752	11,371	12,516	7,348	5,406	0
Water Quality Protection Charge	1,608	0	909	699	699	0	0	0	0	0	0
Total	**70,259**	**4,135**	**4,851**	**61,273**	**8,880**	**10,952**	**12,571**	**13,716**	**8,548**	**6,606**	**0**
OPERATING BUDGET IMPACT ($000s)											
Maintenance				95	15	20	25	15	10	10	
Net Impact				**95**	**15**	**20**	**25**	**15**	**10**	**10**	

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	13,951
Appropriation Request Est.	FY 18	8,620
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		15,376
Expenditure / Encumbrances		7,406
Unencumbered Balance		7,970

Date First Appropriation	FY 73	
First Cost Estimate		
Current Scope	FY 17	70,259
Last FY's Cost Estimate		47,373
Partial Closeout Thru		23,252
New Partial Closeout		4,135
Total Partial Closeout		27,387

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

Cost increases reflect anticipated implementation schedule including the addition of FY21 and FY22 partially offset by capitalization of prior expenditures.

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 Bel Pre Creek I, edfordshire and Fallsreach, Muddy Branch I, Great Seneca (GSGN 205), Grosvenor Tributary, Stonybrook Tributary, Cinnamon Woods tream, Lower Snowden & Falling Creek, Plum Gar stream, Old Farm 6 (Neilwood Drive), Stoneridge & Clearspring, and Derby Ridge & Glenallen.

Fiscal Note
While the State of Maryland has indicated a desire to provide funding, all indicated State Aid is preliminary and not committed. Funding may need to be revised based on actual State Aid commitments. In FY17, funding from the Water Quality Protection Charge 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 Environment. Expenditures also include activities associated with increased emphasis on Green Infastructure methods in MS4 projects.

Disclosures
Expenditures will continue indefinitely.
The Executive asserts that this project conforms to the requirements 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 Retrofit: Countywide (P808726)

'egory	Conservation of Natural Resources	Date Last Modified	11/17/14
Category	Stormwater Management	Required Adequate Public Facility	No
..uministering Agency	Environmental Protection (AAGE07)	Relocation Impact	None
Planning Area	Countywide	Status	Ongoing

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	56,703	5,381	9,668	41,654	7,841	8,686	6,781	6,669	5,842	5,835	0
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	69,846	1,740	11,980	56,126	14,098	10,539	12,644	11,331	3,812	3,702	0
Other	29	29	0	0	0	0	0	0	0	0	0
Total	**126,578**	**7,150**	**21,648**	**97,780**	**21,939**	**19,225**	**19,425**	**18,000**	**9,654**	**9,537**	**0**
FUNDING SCHEDULE ($000s)											
State Aid	13,937	38	1,899	12,000	2,000	2,000	2,000	2,000	2,000	2,000	0
Water Quality Protection Bonds	107,147	7,112	16,142	83,893	18,052	17,225	17,425	16,000	7,654	7,537	0
Water Quality Protection Charge	5,494	0	3,607	1,887	1,887	0	0	0	0	0	0
Total	**126,578**	**7,150**	**21,648**	**97,780**	**21,939**	**19,225**	**19,425**	**18,000**	**9,654**	**9,537**	**0**
OPERATING BUDGET IMPACT ($000s)											
Maintenance				56	14	11	13	11	4	4	
Net Impact				**56**	**14**	**11**	**13**	**11**	**4**	**4**	

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	8,918
Appropriation Request Est.	FY 18	17,471
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		65,197
Expenditure / Encumbrances		17,496
Unencumbered Balance		47,701

Date First Appropriation	FY 87	
First Cost Estimate		
Current Scope	FY 17	126,578
Last FY's Cost Estimate		162,644
Partial Closeout Thru		35,925
New Partial Closeout		7,150
Total Partial Closeout		43,075

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 3,777 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

Cost decreases reflect anticipated implementation schedule including the addition of FY21 and FY22 partially offset by capitalization of prior expenditures.

Justification

This project is needed to comply with the County's MS4 permitting requirements outlined in the County Coordinated Implementation Strategy (CCIS) 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

While the State of Maryland has indicated a desire to provide funding, all indicated State Aid is preliminary and not committed. Funding may need to be revised based on actual State Aid commitments. In FY17, funding from the Water Quality Protection Charge replaced ome funding previously allocated to Water Quality Protection Bonds. Expenditures in the outyears include expected costs to meet the equirements of the County's next MS4 permit. The scope of the next permit is subject to negotiation with the Maryland Department of Environment. Expenditures also include activities associated with increased emphasis on Green Infrastructure methods in MS4 projects.

Disclosures
Expenditures will continue indefinitely.
The Executive asserts that this project conforms to the requirements 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.

Facility Planning: SM (P809319)

Category	Conservation of Natural Resources	Date Last Modified	11/17/14
Sub Category	Stormwater Management	Required Adequate Public Facility	No
Administering Agency	Environmental Protection (AAGE07)	Relocation Impact	None
Planning Area	Countywide	Status	Ongoing

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	17,599	10,387	541	6,671	2,126	1,323	997	773	799	653	0
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0	0
Other	91	91	0	0	0	0	0	0	0	0	0
Total	17,690	10,478	541	6,671	2,126	1,323	997	773	799	653	0
FUNDING SCHEDULE ($000s)											
Current Revenue: General	5,000	5,000	0	0	0	0	0	0	0	0	0
State Aid	140	140	0	0	0	0	0	0	0	0	0
Stormwater Management Waiver Fees	797	797	0	0	0	0	0	0	0	0	0
Water Quality Protection Charge	11,753	4,541	541	6,671	2,126	1,323	997	773	799	653	0
Total	17,690	10,478	541	6,671	2,126	1,323	997	773	799	653	0

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	0
Appropriation Request Est.	FY 18	1,312
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		13,141
Expenditure / Encumbrances		10,606
Unencumbered Balance		2,535

Date First Appropriation	FY 93	
First Cost Estimate		
Current Scope	FY 17	17,690
Last FY's Cost Estimate		17,497
Partial Closeout Thru		0
New Partial Closeout		0
Total Partial Closeout		0

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

Cost increases reflect anticipated implementation schedule including the addition of FY21 and FY22.

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 each reflect reduced planning and design costs.

Fiscal Note

FY17-22 funding has been adjusted to better reflect anticipated annual spending. 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. Expenditures also include activities associated with increased emphasis on Green Infrastructure methods in MS4 projects.

Disclosures

Expenditures will continue indefinitely.

The Executive asserts that this project conforms to the requirements 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).

Watershed Restoration - Interagency (P809342)

·egory	Conservation of Natural Resources	Date Last Modified	11/17/14
Category	Stormwater Management	Required Adequate Public Facility	No
..ministering Agency	Environmental Protection (AAGE07)	Relocation Impact	None
Planning Area	Colesville-White Oak	Status	Ongoing

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	6,269	2,898	50	3,321	1,599	56	60	728	511	367	0
Land	4	4	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	10,502	1,873	0	8,629	0	5,025	0	0	2,163	1,441	0
Other	2	2	0	0	0	0	0	0	0	0	0
Total	16,777	4,777	50	11,950	1,599	5,081	60	728	2,674	1,808	0
FUNDING SCHEDULE ($000s)											
G.O. Bonds	527	527	0	0	0	0	0	0	0	0	0
State Aid	505	505	0	0	0	0	0	0	0	0	0
Stormwater Management Waiver Fees	3,226	3,226	0	0	0	0	0	0	0	0	0
Water Quality Protection Bonds	12,445	489	17	11,939	1,588	5,081	60	728	2,674	1,808	0
Water Quality Protection Charge	74	30	33	11	11	0	0	0	0	0	0
Total	16,777	4,777	50	11,950	1,599	5,081	60	728	2,674	1,808	0
OPERATING BUDGET IMPACT ($000s)											
Maintenance				20	0	0	15	0	0	5	
Net Impact				20	0	0	15	0	0	5	

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	36
Appropriation Request Est.	FY 18	5,081
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		6,391
Expenditure / Encumbrances		4,777
Unencumbered Balance		1,614

Date First Appropriation	FY 93	
First Cost Estimate		
Current Scope	FY 17	16,777
Last FY's Cost Estimate		6,972

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

Cost increases reflect anticipated implementation schedule including the addition of FY21 and FY22.

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. 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. Expenditures also include activities associated with increased emphasis on Green Infrastructure methods in MS4 projects.

The Executive asserts that this project conforms to the requirements of relevant local plans, as required by the Maryland Economic Growth, esource 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)

'egory	Conservation of Natural Resources	Date Last Modified	11/17/14
Category	Stormwater Management	Required Adequate Public Facility	No
..ministering Agency	Environmental Protection (AAGE07)	Relocation Impact	Yes
Planning Area	Kensington-Wheaton	Status	Planning Stage

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	350	0	0	350	50	200	50	50	0	0	0
Land	2,900	0	0	2,900	2,900	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	1,800	0	0	1,800	0	0	800	1,000	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	**5,050**	**0**	**0**	**5,050**	**2,950**	**200**	**850**	**1,050**	**0**	**0**	**0**
FUNDING SCHEDULE ($000s)											
Federal Aid	2,000	0	0	2,000	2,000	0	0	0	0	0	0
Water Quality Protection Bonds	3,050	0	0	3,050	950	200	850	1,050	0	0	0
Total	**5,050**	**0**	**0**	**5,050**	**2,950**	**200**	**850**	**1,050**	**0**	**0**	**0**

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	2,950
Appropriation Request Est.	FY 18	200
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		0
Expenditure / Encumbrances		0
Unencumbered Balance		0

Date First Appropriation		
First Cost Estimate		
Current Scope	FY 17	5,050
Last FY's Cost Estimate		0

Description

This flood mitigation project will seek to voluntarily acquire properties, located in Wheaton along Glenhaven Drive and Dennis Avenue, that are affected by the updating of the 100-year floodplain. The project will remove the buildings, restore the area with water quality improvement technologies and provide non-structural recreational open space for the community.

Justification

An engineering analysis by the Department of Environmental Protection (DEP) indicates that the effect of the Wheaton Regional Dam, Dennis Avenue Culvert, and 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 amendment to the Federal Emergency Management Agency (FEMA) panel for this area to have the 100-year floodplain updated to reflect existing conditions.

Fiscal Note

The County will partner with the Maryland Emergency Management Agency (MEMA) to seek FEMA Hazard Mitigation Assistance grants for the property acquisition. FEMA Hazard Mitigation Assistance grants will provide up to 75% cost of the voluntary acquisition buyout. These FEMA grants are administered by MEMA and are estimated to be $2 million.

Storm Drains

PROGRAM DESCRIPTION AND OBJECTIVES

The Department of Transportation (DOT) involvement in the County Conservation of Natural Resources program is mandated by Section 2-58A (c) of the County Code which requires DOT to be responsible for control, supervision, design, construction, and maintenance of all culverts and storm drainage systems under the jurisdiction of the County.

The DOT Storm Drains Capital Program consists of the construction of storm drainage structures such as curbs, gutters, drainage inlets, pipes, and paved channels. Such networks are constructed to provide for the conveyance of stormwater from impervious surfaces into natural drainage swales and stream channels. This program is focused on storm drainage projects outside the scope of the larger DOT Roads program, which also installs storm drainage systems at the time of new road construction or existing road reconstruction or enhancement.

A second component of the storm drainage program involves County-developer and homeowner participation in the construction of storm drainage facilities. Construction of storm drainage facilities provides a public benefit by reducing drainage problems, flooding, property damage, and contributing to the orderly development of the County. In participation projects, the County and the developer or the homeowner agree to share the costs of storm drainage facilities in which the benefit of storm drainage extends beyond the developer's or homeowner's own property. The County pays only for that portion of the project which benefits properties other than the developer's or homeowner's, not to exceed 50 percent of the total cost. Homeowners can satisfy their portion of the cost-share through in-kind contributions.

STORMWATER MANAGEMENT COORDINATION

In February 2010, the Maryland Department of the Environment issued the County a five year National Pollutant Discharge Elimination System (NPDES) Permit. This permit requires that the County develop and implement a storm water management program to prevent harmful pollutants from being washed or dumped into the Municipal Separate Storm Sewer Systems (MS4). The DOT is partnering with the Department of Environmental Protection (DEP) in implementing the MS4 Permit by 1) constructing Storm Water Management (SWM) retrofit programs which have been developed through DEP's MS4 planning studies, 2) providing opportunities for curb bump-outs and road narrowing where feasible to permit implementation of Low-Impact Development (LID) SWM provisions within the right-of-way, 3) seeking DEP guidance on prioritization of storm drain outfall repairs, 4) 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 5) establishing quarterly meetings with DEP and DOT staff looking for additional areas of cooperation in meeting the MS4 permit requirements.

In recognition of the Stormwater Management value of the Storm Drains projects, the Storm Drains are funded through Water Quality Protection Bonds or the Water Quality Protection Charge.

PROGRAM CONTACTS

Contact Sogand Seirafi of the Department of Transportation at 240.777.7260 or Brady Goldsmith of the Office of Management and Budget at 240.777.2793 for more information regarding this department's capital budget.

CAPITAL PROGRAM REVIEW

The Storm Drainage program for FY17-22 includes four ongoing projects. The overall cost of the recommended six-year program is $16.8 million, representing a $1.4 million or 7.7 percent decrease from the FY15-20 Amended Program of $18.2 million. The decrease is due to the completion of a culvert replacement on Connecticut Avenue and a culvert repair on Sunflower Drive.

Facility Planning: Storm Drains (P508180)

Category	Conservation of Natural Resources	Date Last Modified	11/17/14
Category	Storm Drains	Required Adequate Public Facility	No
nistering Agency	Transportation (AAGE30)	Relocation Impact	None
Planning Area	Countywide	Status	Ongoing

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	6,760	4,694	326	1,740	290	290	290	290	290	290	0
Land	142	142	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	37	37	0	0	0	0	0	0	0	0	0
Other	5	5	0	0	0	0	0	0	0	0	0
Total	**6,944**	**4,878**	**326**	**1,740**	**290**	**290**	**290**	**290**	**290**	**290**	**0**
FUNDING SCHEDULE ($000s)											
Current Revenue: General	4,103	4,103	0	0	0	0	0	0	0	0	0
G.O. Bonds	101	101	0	0	0	0	0	0	0	0	0
Water Quality Protection Charge	2,740	674	326	1,740	290	290	290	290	290	290	0
Total	**6,944**	**4,878**	**326**	**1,740**	**290**	**290**	**290**	**290**	**290**	**290**	**0**

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	290
Appropriation Request Est.	FY 18	290
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		5,204
Expenditure / Encumbrances		4,888
Unencumbered Balance		316

Date First Appropriation	FY 81	
First Cost Estimate		
Current Scope	FY 17	6,944
Last FY's Cost Estimate		6,364
Partial Closeout Thru		0
New Partial Closeout		0
Total Partial Closeout		0

Description

This project provides for the investigation and analysis of various storm drainage assistance requests initiated by private citizens and public agencies. These requests are related to the design, construction, and operation of public drainage facilities where flooding and erosion occur. This project includes expenditures for the preliminary and final design and land acquisition for storm drain projects prior to inclusion in the Storm Drain General project, or as a stand-alone project in the CIP. Prior to its inclusion in the CIP, the Department of Transportation (DOT) will conduct a feasibility study to determine the general and specific features required for the project. Candidate projects currently are evaluated from the Drainage Assistance Request list. As part of the facility planning process, DOT considers citizen and public agency requests and undertakes a comprehensive analysis of storm drainage issues and problems being experienced in the County. This analysis is used to select areas where a comprehensive long-term plan for the remediation of a problem may be required. No construction activities are performed in this project. When a design is 35 percent complete, an evaluation is performed to determine if right-of-way is needed. Based on the need for right-of-way, the project may proceed to final design and the preparation of right-of-way plats under this project. The cost of right-of-way acquisition will be charged to the Advanced Land Acquisition Revolving Fund (ALARF). When designs are complete, projects with a construction cost under $500,000 will be constructed in the Storm Drain General project. Projects with a construction cost over $500,000 will be constructed in stand-alone projects.

Capacity

Projects will be designed to accommodate the ten year storm frequency interval.

Cost Change

Increase due to the addition of FY21 and FY22 to this on-going level of effort project

Justification

Evaluation, justification, and cost-benefit analysis are completed by DOT as necessary. In the case of participation projects, drainage studies and preliminary plans will be prepared by the requestor's engineer and reviewed by DOT. A review of impacts to pedestrians, bicyclists, and ADA (Americans with Disabilities Act of 1991) is being performed and addressed for each subproject in this project. Traffic signals, streetlights, crosswalks, bus stops, ADA ramps, bikeways and other pertinent issues are being considered in the design of the project to ensure pedestrian safety.

Other

Before being added as a sub-project, concept studies are evaluated based on the following factors: public safety, damage to private property, frequency of event, damage to public right-of-way, environmental factors such as erosion, general public benefit, availability of right-of-way and 5:1 cost benefit ratio. In the case of public safety or severe damage to private property, the 5:1 cost benefit damage prevented ratio can be waived. Drainage assistance requests are evaluated on a continuing basis in response to public requests. DOT maintains a database of complaints. Construction projects completed: Linton St-Patton Dr, Hollywood Ave, Jamieson Dr, Langley Dr at Kimes St, Dorset Ave, Sangamore Rd at Madawaska Rd, Northfield Rd, Hampton Ln, Tomlinson Ave at 77th St, 78th St at Macarthur Blvd, Nebel St at Old Georgetown Rd, Piney Meetinghouse Rd, Devon Rd, Falmouth Rd at Blakeford Ct, Garnett Dr, Chapel Hill Rd, Elkhart St, Ridgefield Rd, Iroquois Rd, Edson Ln at Edson park Pl, Armat Dr, Langdrum Ln, Westlake Dr, Barkwater Ct, Falls Rd, Graybill Dr, Old Bonifant Rd, Hornbeam Dr, Rosemere Ave, Decatur Ave, Diamondback Dr, Berryville Rd, Marlow Rd, Ellsworth Dr, Verne St to Wynkoop Blvd, East Melbourne Ave, Greenwood Ave and Division St. Candidate Projects for FY17 and FY18: 80th Street, Norvale Road, Sherwood Forest, 83rd Street, Forest Road

Disclosures

A pedestrian impact analysis has been completed for this project.

Expenditures will continue indefinitely.

Coordination

Montgomery County Department of Environmental Protection, Maryland-National Capital Park and Planning Commission, Maryland Department of the Environment, United States Army Corps of Engineers, Montgomery County Department of Permitting Services, Utility Companies, Annual Sidewalk Program (CIP No. 506747)

(2)

Outfall Repairs (P509948)

Category	Conservation of Natural Resources	Date Last Modified	11/17/14
Category	Storm Drains	Required Adequate Public Facility	No
nistering Agency	Transportation (AAGE30)	Relocation Impact	None
anning Area	Countywide	Status	Ongoing

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	3,679	1,231	828	1,620	270	270	270	270	270	270	0
Land	12	12	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	5,287	3,902	233	1,152	192	192	192	192	192	192	0
Other	3	3	0	0	0	0	0	0	0	0	0
Total	**8,981**	**5,148**	**1,061**	**2,772**	**462**	**462**	**462**	**462**	**462**	**462**	**0**
FUNDING SCHEDULE ($000s)											
G.O. Bonds	5,357	5,148	209	0	0	0	0	0	0	0	0
Water Quality Protection Bonds	2,772	0	0	2,772	462	462	462	462	462	462	0
Water Quality Protection Charge	852	0	852	0	0	0	0	0	0	0	0
Total	**8,981**	**5,148**	**1,061**	**2,772**	**462**	**462**	**462**	**462**	**462**	**462**	**0**

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	462
Appropriation Request Est.	FY 18	462
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		6,209
Expenditure / Encumbrances		5,392
Unencumbered Balance		817

Date First Appropriation	FY 99	
First Cost Estimate		
Current Scope	FY 17	8,981
Last FY's Cost Estimate		8,057
Partial Closeout Thru		0
New Partial Closeout		0
Total Partial Closeout		0

Description
This project provides for the repair of existing storm drain outfalls into stream valleys. Design of corrective measures is included when in-kind replacement of original outfall structures is not feasible. Candidate outfall repairs are selected from citizen and public agency requests. The Department of Environmental Protection's (DEP) Miscellaneous Stream Valley Improvements project generates and assists in rating the outfalls, which are identified as that project expands into additional watersheds.

Cost Change
Increase due to the addition of FY21-22 to this on-going level of effort project

Justification
Collapsed storm drain pipe sections, undermined endwalls, and eroded outfall channels create hazardous conditions throughout the County. The course of drainage could be altered endangering private property or public roads and speeding the erosion of stream channels. Erosion from damaged outfalls results in heavy sediment load being carried downstream that can severely impact aquatic ecosystems and exacerbate existing downstream channel erosion. As part of its watershed restoration inventories, DEP identifies storm drain outfalls that are in need of repair in County stream valleys and respective watersheds. As this program expands to include additional watersheds, each outfall is categorized and, where damaged, rated. A functional rating and evaluation process is used to prioritize each outfall.

Other
The number of outfall locations being repaired per year varies based on the severity of the erosion and damage, the complexity of the design, and the complexity of the needed restorative construction work. Completed outfalls in FY14-15: 11101 Schuylkill Road, 10688 Maple Leaf Drive, 20232 Maple Leaf Court, 9112 Falls Bridge Lane, Holman Avenue, 14700 Lake Terrace Court, 8500 Freyman Drive, and Culvert Outfall Repair At Locksley Lane. Scheduled for repairs (FY16 - beyond): Dartmouth Avenue, Havard Street, 7600 Rossdhu Court, and 9124 Hollyoak Drive.

Fiscal Note
Funding source changed from General Obligation Bonds to Water Quality Protection Charge (FY15 and FY16) and Water Quality Protection Bonds (FY17-22).

Disclosures
A pedestrian impact analysis has been completed for this project.

penditures will continue indefinitely.

Coordination

Department of Environmental Protection, Maryland-National Capital Park and Planning Commission, Maryland Department of the Environment, United States Army Corps of Engineers, Montgomery County Department of Permitting Services, Utility Companies, Miscellaneous Stream Valley Improvements

Storm Drain Culvert Replacement (P501470)

Category	Conservation of Natural Resources	Date Last Modified	11/17/14
Category	Storm Drains	Required Adequate Public Facility	No
inistering Agency	Transportation (AAGE30)	Relocation Impact	None
Planning Area	Countywide	Status	Ongoing

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	1,905	236	589	1,080	180	180	180	180	180	180	0
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	10,793	2,071	2,602	6,120	1,020	1,020	1,020	1,020	1,020	1,020	0
Other	2	2	0	0	0	0	0	0	0	0	0
Total	**12,700**	**2,309**	**3,191**	**7,200**	**1,200**	**1,200**	**1,200**	**1,200**	**1,200**	**1,200**	**0**
FUNDING SCHEDULE ($000s)											
G.O. Bonds	1,500	1,500	0	0	0	0	0	0	0	0	0
Water Quality Protection Bonds	7,200	0	0	7,200	1,200	1,200	1,200	1,200	1,200	1,200	0
Water Quality Protection Charge	4,000	809	3,191	0	0	0	0	0	0	0	0
Total	**12,700**	**2,309**	**3,191**	**7,200**	**1,200**	**1,200**	**1,200**	**1,200**	**1,200**	**1,200**	**0**

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	1,200
Appropriation Request Est.	FY 18	1,200
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		5,500
Expenditure / Encumbrances		2,479
Unencumbered Balance		3,021

Date First Appropriation	FY 14	
First Cost Estimate		
Current Scope	FY 17	12,700
Last FY's Cost Estimate		8,700
Partial Closeout Thru		0
New Partial Closeout		0
Total Partial Closeout		0

Description

This program will provide for the replacement of failed storm drain pipes and culverts. The County's storm drain infrastructure is aging and many of the metal pipe culverts installed from 1960 through the 1990's have reached the end of their service life. Currently no asset inventory with condition assessment exists; therefore no funding is programmed for systematic replacement of these pipes and culverts. This program will provide for emergency culvert replacement and provide for funding to assist in the development of an asset inventory program to better forecast future replacement needs. This program includes: storm water pipe and culvert replacement of both metal and concrete less than six (6) feet in roadway longitudinal length (structures greater than six feet roadway longitudinal length are repaired under the Bridge Renovation Program, CIP#509753), headwalls, end sections, replacement, or extension of culverts to assure positive flow of storm water and channeling of storm water into existing ditch lines or structures. Repairs also include roadside pipe and culvert end treatment safety improvements to eliminate safety hazards. This project will not make major changes to the location or size of existing storm drainage structures.

Cost Change

Addition of FY21 and FY22 to this ongoing project

Justification

This program will address emergency pipe replacements of aging metal and concrete pipes that have reached the end of their service life. The result of these pipe failures has been deep depressions, sinkholes, sediment build up, open pipe joints and metal pipe inverts to an unacceptable levels. Existing storm drain conditions are extremely poor. Repairs are needed to improve safety and reduce the potential for hazards and associated public inconvenience. Failure of a storm drain pipe will precipitate emergency repairs at much higher prices. Further, this program will provide some funding towards the development of an asset inventory of the storm drain system including pipe and culvert conditions for future funding forecasting.

Disclosures

Expenditures will continue indefinitely.

Coordination

Washington Suburban Sanitary Commission, Washington Gas Company, Department of Permitting Services, Pepco, Cable TV, Verizon, Montgomery County Public Schools, Regional Service Centers, Community Associations, Commission on People With Disabilities, 'aryland Department of Environment, Montgomery County Department of Environmental Protection, Army Corps of Engineers

(24)

Storm Drain General (P500320)

Category	Conservation of Natural Resources	Date Last Modified	11/17/14
Sub Category	Storm Drains	Required Adequate Public Facility	No
Administering Agency	Transportation (AAGE30)	Relocation Impact	None
Planning Area	Countywide	Status	Ongoing

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	3,824	1,400	0	2,424	404	404	404	404	404	404	0
Land	58	58	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	12,400	9,483	217	2,700	450	450	450	450	450	450	0
Other	1	1	0	0	0	0	0	0	0	0	0
Total	**16,283**	**10,942**	**217**	**5,124**	**854**	**854**	**854**	**854**	**854**	**854**	**0**
FUNDING SCHEDULE ($000s)											
G.O. Bonds	9,169	9,169	0	0	0	0	0	0	0	0	0
Intergovernmental	228	223	5	0	0	0	0	0	0	0	0
State Aid	162	162	0	0	0	0	0	0	0	0	0
Water Quality Protection Bonds	5,124	0	0	5,124	854	854	854	854	854	854	0
Water Quality Protection Charge	1,600	1,388	212	0	0	0	0	0	0	0	0
Total	**16,283**	**10,942**	**217**	**5,124**	**854**	**854**	**854**	**854**	**854**	**854**	**0**

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	1,708
Appropriation Request Est.	FY 18	0
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		11,159
Expenditure / Encumbrances		10,945
Unencumbered Balance		214

Date First Appropriation	FY 03	
First Cost Estimate		
Current Scope	FY 17	16,283
Last FY's Cost Estimate		14,575
Partial Closeout Thru		0
New Partial Closeout		0
Total Partial Closeout		0

Description

This project provides the flexibility to construct various sub-projects that might otherwise be delayed for lack of funds or difficulty in acquiring right-of-way. This project provides for right-of-way acquisition and construction for storm drain projects resulting from the Drainage Assistance Request program. Individual projects range from retrofitting existing storm drainage systems to developing new drainage systems required to upgrade the existing systems in older subdivisions. Projects formerly handled through the Neighborhood Storm Drain Improvements project are usually small, unanticipated projects initiated by requests from citizens whose homes and properties are subject to severe flooding or erosion and where there is a demonstrated need for early relief. Potential new storm drain projects are studied under the Facility Planning: Storm Drain project. Concept studies are evaluated based on the following factors: public safety, damage to private property and frequency of event, damage to public right-of-way, environmental factors such as erosion, general public benefit, availability of right-of-way and 5:1 cost benefit damage prevented ratio. After the completion of facility planning, projects with construction estimated to cost less than $500,000 are included in this project. Prompt relief is frequently achieved by the use of Department of Transportation (DOT) personnel to construct and provide construction management. The project also facilitates financial participation with developers up to 50 percent share of construction cost for storm drainage projects where such construction would yield a public benefit to properties other than that of homeowner or developers. Right-of-way is acquired under the Advanced Land Acquisition Revolving Fund (ALARF).

Capacity

Projects will be designed to accommodate the ten year storm frequency interval.

Cost Change

Increase due to the addition of FY21-22 to this on-going level of effort project

Other

On Participation projects cost sharing between the County and either homeowners or developers varies and is based upon a signed Letter of Understanding. Some funds from this project will go to support the Renew Montgomery program. Completed Projects in FY14 And FY15: Linton St-Patton Dr, Hollywood Ave, Jamieson Dr, Langley Dr At Kimes St, Dorset Ave, Sangamore Rd At Madawaska Rd, Northfield Rd, Hampton Ln, Tomlinson Ave At 77th St, 78th St At Macarthur Blvd, Nebel St At Old Georgetown Rd, Piney Meetinghouse Rd, Devon Rd, Falmouth Rd At Blakeford Ct, Garnett Dr, Chapel Hill Rd, Elkhart St, Ridgefield Rd, Iroquois Rd, Edson Ln At Edson Park Pl, Armat Dr, Langdrum Ln, Westlake Dr, Barkwater Ct, Falls Rd, Graybill Dr, Old Bonifant Rd, Hornbeam Dr, Rosemere Ave, Decatur Ave, Diamondbac Dr, Berryville Rd, Marlow Rd, Ellsworth Dr, Verne St To Wynkoop Blvd, East Melbourne Ave, Greenwood Ave And Division St. Potential Future projects: 80th Street, Norvale Road, Sherwood Forest, 83rd Street, Forest Road

Disclosures

A pedestrian impact analysis will be performed during design or is in progress.

Expenditures will continue indefinitely.

The Executive asserts that this project conforms to the requirements of relevant local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

Coordination

Montgomery County Department of Environmental Protection , Maryland-National Capital Park & Planning Commission , Maryland Department of the Environment , United States Army Corps of Engineers , Montgomery County Department of Permitting Services , Utility Companies , Annual Sidewalk Program

Expenditure Detail by Category, Sub-Category, and Project ($000s)

Run Date: 01/12/2016 9:34 AM

		Total	Thru FY15	Est FY16	6 Year Total	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs	Approp.
Conservation of Natural Resources													
Storm Drains													
Storm Drain General (P500320)		16,283	10,942	217	5,124	854	854	854	854	854	854	0	1,708
Sonoma / Ayrlawn Storm Drain Improvements (P500509)	*	3,401	3,399	2	0	0	0	0	0	0	0	0	0
Town of Chevy Chase Storm Drain Improvements (P500808)	*	3,262	3,260	2	0	0	0	0	0	0	0	0	0
Maple Avenue Storm Drain & Roadway Improvements (P501100)	*	1,620	1,564	56	0	0	0	0	0	0	0	0	0
Henderson Avenue Storm Drain & Roadway Improvement (P501108)	*	2,270	2,247	23	0	0	0	0	0	0	0	0	0
Facility Planning: Storm Drains (P508180)		6,944	4,878	326	1,740	290	290	290	290	290	290	0	290
Glen Echo Storm Drain (P509637)	*	830	830	0	0	0	0	0	0	0	0	0	0
Outfall Repairs (P509948)		8,981	5,148	1,061	2,772	462	462	462	462	462	462	0	462
Storm Drain Culvert Replacement (P501470)		12,700	2,309	3,191	7,200	1,200	1,200	1,200	1,200	1,200	1,200	0	1,200
Storm Drains		56,091	34,377	4,878	16,836	2,806	2,806	2,806	2,806	2,806	2,806	0	3,660
Stormwater Management													
SM Facility Major Structural Repair (P800700)		37,179	7,105	8,364	21,710	4,629	3,404	2,169	3,585	4,852	3,071	0	0
SM Retrofit - Government Facilities (P800900)		24,898	10,017	2,203	12,678	3,452	2,314	2,239	1,718	1,524	1,431	0	0
SM Retrofit - Roads (P801300)		132,844	10,812	5,189	116,843	9,426	11,182	25,038	26,115	23,838	21,244	0	-9,876
SM Retrofit - Schools (P801301)		15,674	972	1,449	13,253	2,486	1,948	2,505	2,287	2,141	1,886	0	-5,104
Misc Stream Valley Improvements (P807359)		70,259	4,135	4,851	61,273	8,880	10,952	12,571	13,716	8,548	8,606	0	13,951
SM Retrofit: Countywide (P808726)		126,578	7,160	21,648	97,780	21,939	19,225	19,425	18,000	9,654	9,537	0	8,918
Facility Planning: SM (P809319)		17,690	10,478	541	6,671	2,126	1,323	997	773	799	653	0	0
Watershed Restoration - Interagency (P809342)		16,777	4,777	50	11,950	1,599	5,081	60	726	2,674	1,808	0	36
Wheaton Regional Dam Flooding Mitigation (P801710)	New	5,050	0	0	5,050	2,950	200	850	1,050	0	0	0	2,950
Stormwater Management		446,949	55,446	44,295	347,208	57,487	55,629	65,854	67,972	54,030	46,236	0	10,875
Ag Land Preservation													
Ag Land Pres Easements (P788911)		8,935	4,551	900	3,484	984	494	494	494	504	514	0	121
Ag Land Preservation		8,935	4,551	900	3,484	984	494	494	494	504	514	0	121
Conservation of Natural Resources		511,975	94,374	50,073	367,528	61,277	58,929	69,154	71,272	57,340	49,556	0	14,656

* = Closeout or Pending Closeout

FY17-22 Stormwater Management CIP Project Schedules

For each project, please provide a list of actual work completed the past two years and the work assumed to be done over the next two years (more detail than what is shown on the PDFs) with estimated costs per item by fiscal year.

Each DEP CIP project has multiple subprojects. These subprojects take 3-5 years to design, permit and construct. Therefore, subproject costs are only partially expended in the year of its completion. Also, some CIP Project costs (such as personnel) are not tracked by subproject. Therefore, total costs by subproject are not readily available. The following tables indicate total CIP project costs (actual or estimated) and indicate each subproject construction cost (to provide a reference as to the subproject magnitude).

COMPLETED PROJECTS IN FY14 AND FY15:

SM Retrofit – Roads (801300)
Actual Total Costs (FY14 & FY15) = $10,230,000[1]

Subproject	Construction Cost
Dennis Avenue I	$531,000
Dennis Avenue II (East)	$780,923
Dennis Avenue III - Roswell & Lanark	$1,371,004
Sligo Park Hills I	$1,900,000
Sligo Park Hills II	$740,000
Tenbrook – Breewood LID	$307,772
Franklin Knolls LID, Phases 1 & 2	$648,632
Breewood/Arcola/Amherst LID	$227,786
Donnybrook LID	$648,549

SM Retrofit: Countywide (808726)
Actual Total Costs (FY14 & FY15) = $13,533,000[2]

Subproject	Construction Cost
Georgian Colonies	$245,484
Oxford Crossing	$252,879
Naples Manor Dry Pond	$201,769
Fallsberry SWM Pond	$264,855
Meadowvale B Pond	$413,619

SM Major Struct. Repair (800700)

[1] This Project was established in FY13. Therefore, some of the design costs were costed in other Projects.
[2] Includes some design costs for Projects established in FY13.

Actual Total Costs (FY14 & FY15) = $2,296,000

Subproject	Construction Cost
Brookville Depot	$363,717
Montgomery Auto Sales Pond	$1,200,000

Misc Stream Valley (807359)
Actual Total Costs (FY14 & FY15) = $6,307,000

Subproject	Construction Cost
Breewood Stream Restoration	$798,182
Donnybrook Stream	$1,327,650

SM Retrofit – Govt Facilities (800900)
Actual Total Costs (FY14 & FY15) = $2,543,000

Subproject	Construction Cost
Upper County Center	$382,452
Brookville Depot	$611,463

SM Retrofit – Schools (801301)
Actual Total Costs (FY14 & FY15) = $805,000

Subproject	Construction Cost
No subprojects completed during this time period	

Watershed Rest. - Interagency (809342)
Actual Total Costs (FY14 & FY15) = $4,000

Subproject	Construction Cost
No subprojects completed during this time period	

ESTIMATED PROJECT COMPLETION - FY16:

SM Retrofit – Roads (801300)
Estimated Total Costs (FY16) = $1,500,000

Subproject	Construction Cost
Franklin Knolls LID, Phase 3	$611,000

SM Retrofit: Countywide (808726)
Estimated Total Costs (FY16) = $5,100,000

Subproject	Construction Cost
Glynshire Way Pond	$295,000
Ridge Mist Terrace	$273,000
Chadswood	$670,000
Greenfield Station Pond	$264,000
Germantown Park 11161	$625,000

SM Major Struct. Repair (800700)
Estimated Total Costs (FY16) = $4,600,000

Subproject	Construction Cost
Chadswood	$457,000
Lake Whetstone Dredging	$3,000,000

Misc Stream Valley (807359)
Estimated Total Costs (FY16) = $1,600,000

Subproject	Construction Cost
Hollywood Branch Restoration	$2,100,000

SM Retrofit – Govt Facilities (800900)
Estimated Total Costs (FY16) = $600,000

Subproject	Construction Cost
No subprojects to be completed during this time period	

SM Retrofit – Schools (801301)
Estimated Total Costs (FY16) = $1,100,000

Subproject	Construction Cost
No subprojects to be completed during this time period	

Watershed Rest. - Interagency (809342)
Estimated Total Costs (FY16) = $0

Subproject	Construction Cost
No subprojects to be completed during this time period	

ESTIMATED PROJECT COMPLETION - FY17 & FY18:

SM Retrofit – Roads (801300)
Estimated Total Costs = $12,000,000 to $20,600,000

Subproject	Est. Construction Cost
Franklin Knolls LID, Phase 4	$697,000
Breewood Off-road Bioretention	$369,000
Glenmont Forest, Phase 1	$970,000
Wheaton Woods, Phase 1	$1,930,000
Manor Woods, Phase 1	$930,000

SM Retrofit: Countywide (808726)
Estimated Total Costs = $25,000,000 to $41,000,000

Subproject	Est. Construction Cost
Metro Park	$670,000
Montgomery Manor	$306,000
Montgomery Village	$535,000
Bedfordshire	$1,980,000
Quail Valley 2	$275,000
Fox Hills	$223,000
Potomac Ridge	$2,660,000
Greencastle Lakes	$619,000
Northlake Apartments	$546,000
Bel Pre Manor	$260,000
Longmeade Crossing	$568,000
Kemp Mill (Ravenswood HOA)	$358,000
Valley Park	$1,321,000
Fallsreach	$1,000,000
Watkins Meadow	$617,000

Breewood – University Towers	$948,000
Pine Knolls (Normandy Falls)	$241,000
Woodrock (Rockwood)	$276,000
Hunters Woods III	$390,000
Quail Valley 1	$319,000
Strawberry Knoll	$1,076,000
The Plantations	$435,000
County Airpark	$934,000
Cinnamon Woods	$1,188,000
Germantown Park	$275,000
Seneca Park (Whetstone)	$459,000
Flints Grove	$253,000
Triple Crown Road	$688,000
Washington Science Center	$273,000
Plumgar II (Seneca Valley)	$410,000
Old Georgetown Village	$290,000
Tuckerman Lane Regional	$230,000
Thomas Choice	$402,000
Dumont Oaks	$200,000

SM Major Struct. Repair (800700)
Estimated Total Costs = $6,000,000 to $8,000,000

Subproject	Est. Construction Cost
Gunners Lake Dredging	$3,000,000
Riser Repairs – Lake Whetstone	$500,000
Pueblo Road	$1,100,000

Misc Stream Valley (807359)
Estimated Total Costs = $12,000,000 to $19,800,000

Subproject	Est. Construction Cost
Muddy Branch (Flints Grove) Stream	$521,000
Cinnamon Woods Stream	$464,000
Falling Creek	$1,380,000
Lower Snowdens Mill	$572,000
Stonybrook Tributary, Phase 1	$1,150,000
Gunners Branch, Phase 1	$1,900,000

SM Retrofit – Govt Facilities (800900)
Estimated Total Costs = $3,500,000 to $5,700,000

Subproject	Est. Construction Cost
Colesville Park and Ride	$270,000
Greencastle Park and Ride	$486,000
Little Falls Library	$142,000
Longwood Community Center	$780,000
Germantown MARC	$1,115,000
Potomac Community Center	$980,000

SM Retrofit – Schools (801301)
Estimated Total Costs = $2,600,000 to $4,400,000

Subproject	Est. Construction Cost
Oak View ES	$193,000
White Oak MS	$329,000
Rosa Parks MS	$412,000
Strathmore ES	$159,000
Argyle MS	$802,000
Sherwood ES	$356,000
Newport Mill MS	$372,000
Sligo MS	$233,000
Olney ES	$250,000

Watershed Rest. - Interagency (809342)
Estimated Total Costs = $2,000,000 to $6,000,000

Subproject	Est. Construction Cost
Quaint Acres Tributary	$460,000
Sligo Creek / Colt Terrace	$259,000

Testimony of Diane Cameron

Conservation Director, Audubon Naturalist Society

Thursday, February 11, 2016

Montgomery County Council hearing on the FY17 Capital Budget and FY17-22 CIP.

On behalf of ANS and the following 12 member organizations of the Stormwater Partners Network: Anacostia Watershed Society; Audubon Naturalist Society; Citizens to Save South Valley Park and Whetstone Run; Clean Water Action; Conservation Montgomery; Eyes of Paint Branch; Friends of Sligo Creek; Friends of Ten Mile Creek; Little Falls Watershed Alliance; Maryland Native Plant Society; Montgomery Countryside Alliance; Neighbors of Northwest Branch; Watts Branch Watershed Alliance. Individual members of the Stormwater Partners: Joseph Dias; Jenny Reed; Anne Vorce.

RE: Parks; DOT; and DEP CIP Requests for watershed and stream restoration projects under MS4 Phase I and II permits, and stormwater and watershed impacts of transportation projects.

I. Summary

Our testimony contains three points: (1) We request the full restoration of all of the Parks Department's CIP $1.6 million per year budget request pertaining to the Parks' fulfillment of its own stormwater permit (MS4 Phase II) – including imperviousness removal; green infrastructure stormwater retrofits; and streambank restorations; (2) We request that Montgomery County Department of Transportation (DOT) work closely with the Department of Environmental Protection (DEP) to apply imperviousness reduction and removal; infiltration-based stormwater conveyance methods; and other "green-street" type methods, to 17 specific DOT CIP project requests (PDFs); and (3) we support DEP's CIP requests pertaining to implementation of the County's MS4 Phase I permit, while renewing our request of March 30, 2015, for DEP to make green infrastructure the default approach for this investment in restoration.

Montgomery County has made great strides in implementing one of the toughest stormwater permits in the nation, while maintaining a world-class Parks system that contributes mightily to the quality of life our residents enjoy. A core mission of the Parks system and of DEP's watershed management, is protection of our network of streams located in ten major watersheds. While we have made major strides in watershed protection and restoration, much more remains to be done. The vast majority of streams in the County's urban core remain in Fair or Poor biological quality, a reflection of the high levels of pavement and erosion existing throughout Sligo Creek, Little Falls, Cabin John, Rock Creek, Northwest Branch, Paint Branch, Watts Branch, and other watersheds.

The best, most effective, and most beneficial approach to watershed restoration and protection is use of "green stormwater practices" that use infiltration via soils and plants, and water capture and reuse, to reduce runoff and to recharge streams in dry weather. Yet at present, these green practices including tree plantings, compost amendment to soil, and infiltration conveyances, form a minor part of the County's stormwater project inventory. The Parks Department's CIP retrofit projects that we request be restored to the full CIP level of $1.6 million per year, rely upon green stormwater methods. We request that DOT and DEP continue and accelerate

their own use of green stormwater practices, and make them the default approach to fulfillment of the County's MS4 mandates, in part through bringing the unit costs down through innovation and R&D, and application of known methods of lower-cost runoff reduction.

Watershed restoration plans for our degraded streams are underway, and their full funding through this CIP cycle, for all partnering and MS4 permit agencies (focusing here on Parks, DEP, and DOT), is essential. We are asking that Montgomery's infrastructure agencies – particularly DOT - go much farther to align their projects with water resource stewardship. To fail to support the full funding of these projects, and to delay making a full "green stormwater shift" for all County land management agencies, amounts to increasing the risk of incurring future damage repair costs for properties and infrastructure subject to flood and erosion damages.

In order to fulfill the federal Clean Water Act mandate in the Parks MS4 Phase II permit, we request that every dollar of the $1.6 million CIP budget requested by Parks for FY2017-18 be restored by the Council. In order to realize the full benefits and achieve the intended design life of stream restoration projects, and to minimize the County's exposure to future damage mitigation costs, we request that DOT work with DEP to institute green stormwater methods for roadway repair and drainage projects. While we are pleased with the forward direction of DOT-DEP cooperation expressed in the CIP document, we need to see more rapid and specific commitments from DOT. So, we have identified 17 DOT projects (see the PDF list appended here) for which we request specific language changes to the PDF to codify this green shift. And, we support DEP's budget request-- and repeat our request that DEP shift to a "green default" approach for its own MS4 permit CIP projects.

II. Montgomery County Stream health trends

According to the 2012 Countywide Coordinated Implementation Strategy, seven out of eight of the County's major watersheds have restoration implementation plans. The majority of these plans are aimed at restoring blown-out streams and reducing runoff pollution. While most of our streams in the Agricultural Reserve are in Good biological health, most streams in the urban core are rated either Fair or Poor, due to runoff from paved surfaces.

Contribution from impervious surfaces – with a focus on roads

According to DEP's data, roughly 36,000 acres of pavement and roofs cover 11 % of Montgomery County. (Montgomery County Coordinated Implementation Strategy, 2012 – see excerpt below.) <u>The largest category of this 'asphalt blanket' are roads – comprising 13,600 acres, or 38% of the total impervious acres.</u>

DEP calculates that 18,884 paved acres are considered 'uncontrolled' or 'undercontrolled,' meaning that the stormwater runoff discharged from these paved areas is not treated at all, or is not adequately treated. MDE requires that the County address 20% of its inventory of uncontrolled/ poorly controlled impervious areas during each 5-year permit cycle. DEP calculates that the current permit cycle that began in 2010, must retrofit 3777 paved acres. A strategy that fully addresses the roadway element of this program will target 1435 paved acres of roads for stormwater retrofits.[1]

The take-home message: Our County's streams, while subject to major restoration efforts and mandates, remain in bad shape - and the culprit is the blanket of pavement we've laid over their drainages – the largest

[1] Montgomery County DEP Restoring Our Watersheds: Montgomery County's 2010-2015 MS4 Watershed Restoration Achievements. August, 2015. Executive Summary page 5.

portion of which is comprised of roads. Our world-class system of Parks, including our important system of Stream Valley Parks, is jeopardized by uncontrolled and poorly-controlled runoff from these roadways and other impervious surfaces.

Table 2.1 Impervious Surface Summary

Description	Area in Acres	% of Total Area
Total County Area	324,552	100%
Total Area of Impervious Surface	35,965	11%
County Area Subject to Stormwater Permit (1)	138,649	43%
Impervious Cover Subject to Stormwater Permit (2)	25,119	18%
Areas of Impervious Surface (3)		
Road	13,607	38%
Building	13,073	36%
Parking	7,870	22%
Sidewalk	1,069	3%
Recreation (4)	347	1%

1. **Exclusions include: Certain zoning codes, parklands, forests, municipalities with own stormwater management programs, state and federal properties, and state and federal maintained roads**

Source: ***Montgomery County Coordinated Implementation Strategy,*** *January 2012, page 12.*

III. Solution

In order to tackle this problem successfully, we must a) fully restore the Parks' CIP request of $1.6 million annually for FY2017 and FY18, which will enable it to fulfill its MS4 Phase II permit mandates; b) bring a green stormwater approach to the roadway repair, transportation planning, and drainage repair projects at DOT in cooperation with DEP; and c) support DEP's CIP request - and its own shift into green methods as the default for stormwater retrofit projects, with the latter two steps enabling major fulfillment of the County's MS4 Phase I permit.

A. DOT is a contributor to the problem and needs to step up to be a full partner in the solution. DOT has made some strides in recent years, including: Green Street mandates for new and redeveloped roadways; Green street neighborhood retrofit projects with DEP; storm drainage area delineations and mapping; and incorporating existing roadside swales, all in coordination with DEP. In addition, DEP's Watershed Restoration report attributes to DOT partnership, 50 impervious acre credits that were garnered for Montgomery's MS4 permit compliance. "In addition to the CIP-funded green streets, DEP collaborated with and supported funding for DOT-led green streets projects and worked with DOT to prioritize outfall stabilizations throughout the County." (DEP 2015, Restoring our Watersheds report, Executive Summary, pages 7 and 10.)

The County Executive's CIP Budget proposal for FY17-22 details plans for further cooperation between DOT and DEP:

> **The Department of Transportation (DOT) is also assisting DEP in implementing the MS-4 Permit by: (1) providing opportunities for curb bump-outs and road narrowing where feasible to permit implementation of low-impact development (LID) SWM provisions within the right-of-way; (2) seeking DEP guidance on prioritization of storm drain outfall repairs; (3) 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 MS-4 permit; and (4) holding regular meetings with DEP staff looking for additional areas of cooperation in meeting the MS-4 permit requirements.**

FY17 Recommended Capital Budget and FY17-22 Capital Improvements Program; Montgomery County Executive Isiah Leggett, January 2016. Page 31-2.

B. We support this plan to increase cooperation between DEP and DOT, and, we request that DOT go further, to make specific changes to each of 17 specific Project Description Forms (PDFs) in order to better use green techniques and principles for transportation drainage, repair, and other projects. Through the specific PDF language changes that we are requesting for these DOT projects, we request that DOT, in cooperation with DEP, identify and revise the current storm drainage systems that continue to cause or contribute to erosion, stream scour, and runoff pollution.

C. And, DOT can make even more strides in contributing to stream health improvements and the MS4 mandates (for both Phase I and II Permits with the latter issued to Parks), through collaborating with DEP, Parks and other agencies to reform its transportation facilities planning and repair projects and roadway drainage projects (DOT CIP PDFs with specific language change requests are appended to this testimony.)

We repeat our Parks CIP request from our letter to the Planning Board dated April 23, 2015, and our green infrastructure requests for DEP's stormwater program, dated March 30, 2015 (letters appended to this testimony). **In particular, we support the Parks Dept. and Parks Foundation requests to restore the full Parks watershed project request for $1.6 million per year (stormwater and stream restoration projects) in this current CIP.**

The CE's CIP Recommendation includes cuts of $550K for FY17/18 in the Streambank Protection PDF (P818571) and $1,050K for FY17-22 in the Pollution Prevention PDF (P078701) from Parks' initial request. These cuts will hamper Parks' efforts to protect the county's stream valley Parks from the effects of decades of urbanization - and delay implementation of the Parks' MS4 stormwater retrofit program.

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Attached to this testimony is a list of 12 examples of Parks' stormwater and watershed restoration projects that would be affected by these proposed cuts.

The Stormwater Partners can wholeheartedly support stream restoration projects when they are coupled with stormwater retrofits "uphill and upstream." This is so that our public investments in stream channel and floodplain restoration aren't blown out by uncontrolled runoff surges - and so that we are doing all that we can in a whole-watershed strategy, to prevent and reduce pollution at the source - at each impervious source area: rooftop; parking lot; driveway; and roadway outfall.

Our Parks Department, to succeed fully in clean water stewardship, needs the tandem watershed restoration commitments of sister agencies, DEP and DOT, along with other County land managers, who control "the uplands and ridgetops" of our watersheds.

County DOT drainage projects, including retrofit and replacement of culverts outfalls are overlooked opportunities for reducing runoff closer to the source -- thus contributing to the long-term success of the Parks' and DEP's stream restoration projects.

So, we request that Montgomery County DOT work in partnership with DEP to improve the designs of its roadway rehabilitation, drainage improvements, and related projects, in order to maximize runoff capture and infiltration and eliminate stream scour and sedimentation. Roadway projects of this type are referred to as "Green Street-type projects." Green Street techniques prevent and reduce runoff pollution, by capturing and slowing stormwater from roads, and infiltrating it into the ground or filtering it.

Montgomery County adopted Green Street requirements for new and redeveloped streets in 2009, supported by broad consensus that included the Stormwater Partners Network representatives. Now, we are seeking to expand the green streets DOT program to include roadway and outfall repair, resurfacing, and retrofit projects. It's past time that ALL County agencies fully incorporate green techniques into all land management and infrastructure projects - including transportation facility repairs and retrofits. We call on the Agencies and Council to break down the siloes that have prevented effective coordination and practice and design changes from happening. Cross-agency collaboration is essential. If that requires some different budgeting and CIP development and management, we ask that the land management agencies work with OMB to restructure the CIP and O&M budgets as needed. This is so that we're not continuing to build facilities that will soon need stormwater retrofits and erosion repair. The lack of green infrastructure design principles for retrofit projects, and the lack of full interagency coordination, has undermined Parks' and DEP's watershed restoration proejcts.

In conclusion: We request that Montgomery County restore the Parks' CIP request for stormwater and stream projects;that the listed 17 DOT CIP projects be expressly directed to adopt infiltration and vegetation-based stormwater conveyance and discharge designs; and that DEP make green infrastructure the default approach for stormwater retrofits in fulfilling the MS4 permit. Let's make the changes we need in order to have all agencies pulling together for our water resources – and to align our infrastructure investments for the most effective protection and restoration of our streams and watersheds.

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Examples of Parks CIP Projects that would be eliminated unless the Parks' CIP budget request is restored:

Pollution Prevention (P078701) projects:

1. **Wheaton-Claridge Park** – SWM retrofit, pavement/fill removal from stream valley, and riparian enhancements to improve the ecology of a Park developed prior to modern day environmental standards.
2. **Cabin John Indoor Tennis and Locust Grove Nature Center Parking Lot** – SWM retrofit and pavement removal to improve water quality and watershed health in a Park developed prior to modern day Environmental standards. This site will provide a highly visible demonstration area and excellent environmental education opportunity as part of the Nature Center programming.
3. **Storm Drain Mapping** – Using ArcGIS to map existing storm drain systems. The data is used to track illicit discharges, identify eroding and clogged outfalls, and prioritize SWM retrofit projects in support of our MS4 Permit.
4. **SWM Retrofits of Parkway Culverts and Outfalls**– Provide SWM retrofits and wetland enhancements in conjunction with DOT culvert improvements along existing Park roads (i.e. Sligo Creek Parkway, Little Falls Parkway, Beach Drive, etc.) to protect infrastructure, improve water quality, and enhance riparian ecology.
5. **Seneca Poole's Store** - SWM retrofit and pavement removal to treat Park developed prior to modern day environmental standards.
6. **Wheaton Stables Parking Lot** - SWM retrofit and pavement removal to treat Park developed prior to modern day environmental standards.
7. **Pinecrest Park** - SWM retrofit and pavement removal to treat Park developed prior to modern day environmental standards.
8. **Northwest Branch Wetland Restoration at Layhill Park** – Removal of deteriorated diamond athletic field infrastructure and legacy fill within riparian area to restore previous wetlands.
9. **Meadowside Nature Center Parking Lot** - SWM retrofit and pavement removal to treat prior to modern day environmental standards. Restoration of eroding storm drain outfall into stream valley. This site will provide a highly visible demonstration area and excellent environmental education opportunity as part of the Nature Center programming.

Streambank Protection (P818571) projects:

1. **Waverly-Schuylkill Phase 2** – Restoration of a highly eroded stream channel that is threatening an existing storm drain outfall and road embankment along Garett Park Drive. This project is being pursued in partnership with DOT.
2. **Sligo Creek Below University Blvd** – Stream restoration project to restore fish passage through the existing University Blvd. culvert, while stabilizing banks, enhancing riparian areas and protecting adjacent infrastructure.
3. **Sligo Creek Above Brunett Ave** – Stream restoration project to provide fish passage via the installation of grade control structures and remove failing log drops that are currently fish blockages.

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List of DOT CIP Projects for which we request specific language additions to the PDFs instituting the green stormwater shift in cooperation with MC DEP:

Transportation CIP Program Document File (PDF)			
PDF ID	PDF Name	Program Description	Watershed restoration element requested
P509132	Bridge Design	Plans for major bridge replacements	Add language to the PDF to require that "Projects shall provide stream channel stabilization using modern in-stream revetments to ensure long-term stability, aquatic resource protection, and fish passage to the extent possible."
P509753	Bridge Renovation	Repair and replacement of County bridges	Add language to the PDF to require that "Projects shall provide stream channel stabilization using modern in-stream revetments to ensure long-term stability, aquatic resource protection, and fish passage to the extent possible."
P500914	Residential and Rural Road Rehabilitation	Major repairs of County Roads	Add language to the PDF to require that "DOT shall coordinate projects with DEP to identify and implement opportunities to remove imperviousness and stormwater retrofits that use green-street principles including infiltration."
P500720	Resurfacing Park Roads and Bridge Improvements	Repairs existing Parks Roads.	Add language to the PDF to require that "Projects shall provide environmentally sensitive culvert replacements/ modifications, and shall include stream channel restoration, and stormwater retrofits that use green-street principles including infiltration, in coordination with Montgomery Parks."
P508527	Resurfacing: Primary/Arterial	Repairs existing County roads.	Add language to the PDF to require that "DOT shall coordinate individual projects with DEP to identify and implement opportunities to incorporate imperviousness reductions and stormwater retrofits that use green-street principles including infiltration."
P500511	Resurfacing: Residential/Rural Roads	Repairs existing County roads.	Add language to the PDF to require that "DOT shall coordinate individual projects with DEP to identify and implement opportunities to incorporate imperviousness reductions and stormwater retrofits that use green-street principles including infiltration."

P508182	Sidewalk & Curb Replacement	Replaces aging curbs and sidewalks.	Add language to the PDF to require that "DOT shall coordinate individual projects with DEP to identify and implement opportunities to incorporate imperviousness reductions and stormwater retrofits that use green-street principles including infiltration."
P500534	Transit park and ride lot renovations.	Repairs parking lots related to transit.	Add language to the PDF to require that "DOT shall coordinate individual projects with DEP to identify and implement opportunities to incorporate imperviousness reductions and stormwater retrofits that use green-street principles including infiltration."
P501532	Bicycle-Pedestrian Priority Area Improvements	Provides small trail projects.	Add language to the PDF to require that "DOT shall coordinate individual projects with DEP to identify and implement opportunities to incorporate imperviousness reductions and stormwater retrofits that use green-street principles including infiltration." Project designs that cross Stream Valley Parks should use environmentally sensitive stream crossings and maximize stormwater reduction before discharge into Park lands and streams.
P507596	Bikeway Program Minor Projects	Provides small trail projects.	Add language to the PDF to require that "DOT shall coordinate individual projects with DEP to identify and implement opportunities to incorporate imperviousness reductions and stormwater retrofits that use green-street principles including infiltration." Project designs that cross Stream Valley Parks should use environmentally sensitive stream crossings and maximize stormwater reduction before discharge into Park lands and streams.
P506747	Sidewalk Program Minor Projects	Provides small sidewalk projects.	Add language to the PDF to require that "DOT shall coordinate individual projects with DEP to identify and implement opportunities to incorporate imperviousness reductions and stormwater retrofits that use green-street principles including infiltration."

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P509337	Facility Planning-Transportation	Plans for major highway, pedestrian, bike, and mass transit projects.	Add language to the PDF to require that environmental protection and specifically, whole-watershed and stream protection and restoration shall be major elements of the planning efforts and resultant plans. PDF language shall also require that these plans identify opportunities to construct infiltrating stormwater conveyance systems (similar to Regenerative Stormwater Conveyances) as projects in tandem with new construction.
P507017	Intersection and Spot Improvements	Plans for minor road intersection improvements.	Add language to the PDF to require that "DOT shall coordinate individual projects with DEP to identify and implement opportunities to incorporate imperviousness reductions and stormwater retrofits that use green-street principles including infiltration."
P508180	Facility Planning: Storm Drains	Analyzes drainage improvements requested by residents. Funded by the WQPC.	Add language to the PDF to require that "DOT shall coordinate individual projects with DEP to identify and implement opportunities to incorporate imperviousness reductions and stormwater retrofits that use green-street principles including infiltration."
P509948	Outfall Repairs	Repairs damaged storm drain outfalls.	Add language to the PDF to require that "DOT shall coordinate with DEP to replace and repair damaged outfalls with infiltrating stormwater conveyance systems (similar to Regenerative Stormwater Conveyances)."
P501470	Storm Drain Culvert Replacement	Replaces existing culverts that often cross streams.	Add language to the PDF to require that "Projects shall provide stream channel stabilization using modern in-stream revetments to ensure long-term stability, aquatic resource protection, and fish passage to the extent possible."
P500320	Storm Drain General	Constructs drainage improvements requested by residents	Add language to the PDF to require that "DOT shall coordinate with DEP to construct drainage improvements using infiltrating stormwater conveyance systems (similar to Regenerative Stormwater Conveyances)."

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THE MONTGOMERY COUNTY STORMWATER PARTNERS NETWORK

The Honorable George Leventhal, President
Montgomery County Council
100 Maryland Ave.
Rockville, MD

March 30, 2015

Dear Council President Leventhal and Councilmembers,

The upcoming renewal of Montgomery County's stormwater permit is an opportunity for the County to once more lead the way in Maryland clean water policy. To demonstrate this leadership, we propose that the County government, led by the Department of Environmental Protection, commit to go beyond permit compliance in three specific areas. The Montgomery County Stormwater Partners Network has worked with DEP and the Council over the past ten years, on initiatives that have improved our stormwater program. We are now seeking to help bring this program to the next level of effectiveness and accountability. We are updating the Council on this issue, but not seeking legislation at this time.

DEP is the lead agency implementing Montgomery's stormwater program. Through the Water Quality Protection Charge (WQPC) established in 2002, the current 6-year CIP budget for this program (FY15-20) is $~360 million. The County Council's role regarding the stormwater program is threefold: enactment and revision of stormwater and water quality laws and codes; review and approval of County agency and program budgets; and oversight of program implementation. While the Stormwater Partners explore opportunities for collaboration with DEP, we seek the Council's concurrence with, and support for, this initiative.

Montgomery's stormwater program is driven by the mandates in the Municipal Separate Storm Sewer System (MS4) permit issued by MDE. The County's current permit expired last month, and MDE will soon issue Montgomery a next-generation permit containing new requirements. However, the standard terms that MDE includes in these permits are insufficient to ensure that the County will remain accountable for achieving water quality goals and for including the public in program decisions. The permit's overly-lax requirements allow the County to invest in less-effective stormwater practices that are not the best use of government funds. Committing to higher implementation standards than those contained in the permit will boost investment in the most effective and beneficial controls, keep the County on track for achieving clean water mandates, and enhance public participation and buy-in.

Therefore, we request that DEP commit to adopting three policies that will improve upon the baseline requirements of its forthcoming permit renewal: (1) make green stormwater infrastructure the basis of the County's stormwater retrofit program; (2) establish more specific milestones in the County's pollution reduction plans; and (3) provide for greater public participation in these programs.

(1) Make Green Stormwater Infrastructure the Basis for the MS4 Retrofits Program.

The new MS4 permit will require the County to capture and treat the runoff from at least 20% of the

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County's impervious surfaces, or over 4000 paved acres. (This is in addition to the 30% that the County was required to retrofit during the previous two permit terms.) To date, DEP has implemented this requirement mainly by increasing the treatment capacity of existing stormwater ponds. Yet pond retrofits are less effective at reducing pollution and flooding than green stormwater infrastructure. Green infrastructure practices (also known in Maryland as Environmental Site Design or ESD), which reduce runoff through infiltration, evapotranspiration, and reuse, are proven techniques that achieve better environmental results than ponds and offer a wide range of benefits to the community, including higher property values, green maintenance jobs, energy savings, wildlife habitat, and reductions in air pollution.

Thus far, the County's use of green infrastructure has been limited to a relatively small role in the watershed restoration program under the stormwater permit. We believe the County is now poised to adopt an all-green stormwater retrofit program under its forthcoming next-generation permit.

Over the past decade, DEP has introduced successful green infrastructure programs, including RainScapes and Green Streets – the latter with MC-DOT. Using the lessons learned from these programs, the County is now ready to create a much bigger role for green infrastructure in restoring its watersheds. Our neighbors, Prince George's County and the District of Columbia, have stormwater retrofit programs that are 100% green; the same is possible for Montgomery County. An important component of this effort will be for DEP to expand its green toolbox, including through use of available technologies such as: soil amendment with compost; Regenerative Stormwater Conveyances; and certain tree-based practices that have not yet been widely implemented here.

In order to accelerate Montgomery County's use of green stormwater infrastructure, we propose action on the following recommendations:

a) Green infrastructure (ESD) should be the default approach to meeting the MS4 permit's impervious acre restoration requirement. DEP and other agencies should use green infrastructure when implementing the restoration requirement unless technically infeasible;
b) DEP should prepare a report examining the feasibility, costs and benefits (e.g. economic and health benefits), of a wide range of green (ESD) practices not currently in widespread use as default MS4 program retrofit methods: tree planting practices, including those used in the County's 100,000 Trees Initiative; compost-amended soils; use of green retrofit practices for all of DOT's drainage assistance projects; green roofs; and non-erosive conveyances; and
c) All County agencies, including the Departments of Transportation, Permitting Services, and Planning, should coordinate to achieve maximum ESD implementation and maintenance for public and private projects, including retrofits, new development and redevelopment projects. The agencies should provide the necessary staff training to support ongoing green stormwater infrastructure adoption and evolution, and full collaboration with citizen, environmental, and watershed groups.

(2) Establish Greater Accountability in the County's Watershed Restoration Plans.

The County's new MS4 permit will require it to develop a "restoration" plan for meeting stream-specific pollution reduction targets, also known as wasteload allocations ("WLAs"). However, MDE's permit terms are deficient in that they lack requirements for establishing interim milestones, which are necessary to ensure that the County is making progress toward achieving its ultimate reduction targets.

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We ask that the County's restoration plans include:

a) Final deadlines for WLA attainment that are consistent with the deadlines of the Chesapeake Bay TMDL and that will achieve compliance as soon as possible, along with a demonstration that these deadlines represent the soonest possible attainment date; and
b) Interim pollution reduction milestones spaced no more than one year apart.

(For County water bodies for which there already exists a WLA plan, that plan should be revised so that it includes these required elements.)

(3) Enhance Public Participation in Watershed Restoration Plans and Related Programs.

Given past experience, it is unlikely that the renewed MS4 permit will have adequate requirements for public participation in the County's stormwater programs. Therefore, we ask that DEP provide more frequent, inclusive, and responsive opportunities for public engagement. These should include:

a) The establishment of a stakeholder group, (possibly through the auspices of the Water Quality Advisory Group), including representatives from nonprofit advocacy organizations, the private sector, and interested members of the general public, with which DEP will meet on a regular (e.g., bimonthly) basis to discuss the development of restoration plans and the implementation of other MS4 permit requirements. The group will submit a written annual report that includes any recommendations for program, policy and code improvements;
b) The development of standard procedures on the part of DEP, DOT, and other agencies, for engaging and collaborating with the public, including local watershed and civic groups in affected neighborhoods, in planning and implementing all RainScapes, Green Streets, and other retrofit and restoration projects;
c) The opportunity for the public to request a hearing on the County's draft restoration plans;
d) The annual publication of a detailed response to formal and informal public input on the County's stormwater plans and programs, either in the MS4 annual report or as a standalone publication.

We look forward to working with the Council, DEP, and others in the Administration in bringing this program to the next level of local stream protection and restoration.

Yours for clean water,

Diane Cameron
Coordinator, Stormwater Partners Network
Conservation Director, Audubon Naturalist Society

cc: Lisa Feldt, Director of DEP
Steve Shofar, Chief, Watershed Management Division, DEP

Co-Signatories:

Dan Smith
Director of Policy, Anacostia Watershed Society

Molly Hauck and Charlotte Brewer
Environmental Task Force, Cedar Lane Unitarian Universalist Congregation

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Gail Dalferes
Committee to Save Kensington

David Dunmire
President, Eyes of Paint Branch

Kit Gage
President, Friends of Sligo Creek

Dan Dozier, President
Little Falls Watershed Alliance

Marney Bruce
President, Maryland Native Plant Society

Caroline Taylor
Executive Director, Montgomery Countryside Alliance

Jean Cavanaugh
Co-chair, Environment Committee,
Montgomery County Civic Federation

Jennie Howland
President, Muddy Branch Alliance

Rebecca Hammer
Staff Attorney, Natural Resources Defense Council

James Graham
President, Neighbors of Northwest Branch

Hedrick Belin
Executive Director, Potomac Conservancy

Matthew Fleischer
Executive Director, Rock Creek Conservancy

Diana Conway
Safe Healthy Playing Fields Coalition

Susan Eisendrath
Executive Committee Member
Montgomery County Group of the Sierra Club

Ann Smith
President, Seneca Creek Watershed Partners

Lydia Sullivan
We Are MoCo

Clean Water Action, Maryland

Sierra Club, Maryland Chapter

Maryland Conservation Council

National Parks Conservation Association

Interfaith Partners for the Chesapeake

Trash Free Maryland

Clean Bread & Cheese Creek

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AUDUBON NATURALIST SOCIETY FRIENDS OF SLIGO CREEK

FRIENDS OF TEN MILE CREEK AND LITTLE SENECA RESERVOIR

MONTGOMERY COUNTRYSIDE ALLIANCE

MUDDY BRANCH ALLIANCE NEIGHBORS OF NORTHWEST BRANCH

ROCK CREEK CONSERVANCY SENECA CREEK WATERSHED PARTNERS

WATER WATCHDOG PROGRAM

WATTS BRANCH WATERSHED ALLIANCE

Montgomery County Planning Board
Casey Anderson, Chair
8787 Georgia Avenue
Silver Spring, MD 20901

April 23, 2015

Dear Chair Anderson and Commissioners,

We are representatives of ten organizations working to protect and restore streams in Montgomery County. One of the greatest threats to our streams is runoff from developed areas. Examples of degraded waterways exist throughout the County. State and county regulations requiring Environmental Site Design (ESD) practices are helping to stem the flow of runoff, but far too many streams remain degraded. We write today in support of robust funding for three Montgomery Parks programs: Stream Protection; Pollution Prevention; and Legacy Open Space.

As rainfall falls on urban lands, it picks up many pollutants as it flows into the County's streams which are located in stream valley parks managed by our Parks Department. We support increased funding for Montgomery Parks' capital budget to implement stormwater retrofits as part of its compliance with its Phase II MS-4 (stormwater) permit, issued in 2009 by the Maryland Department of the Environment.

We understand that the Commission is considering the Parks Department's 2016 annual Capital Improvements Program (CIP) budget at its April 23, 2015 hearing. Buried deep in the Montgomery Parks Department CIP budget are two programs that fund Stream Protection and Pollution Prevention efforts,

which received a combined allocation of approximately $1.1 million in FY15, which we believe is insufficient to meet the protection/restoration needs of the Parks' water resources. Montgomery Parks staff has done an outstanding job using available funds for pavement removal, and ESD retrofit projects that reduce or prevent stormwater runoff, and thereby protect our streams that flow into the Anacostia, Potomac and Patuxent Rivers and the Chesapeake Bay. Projects like these exemplify Montgomery County's leadership in meeting state objectives to restore the Chesapeake.

On behalf of the Montgomery County Stormwater Partners, **we urge the Commission to increase the Montgomery Parks Department allocation for its Stream Protection and Pollution Prevention programs to at least $1.6 million for FY16 and beyond**. The Parks Department has a long list of stormwater retrofit and restoration projects on County park lands.

We also strongly support robust funding for Legacy Open Space, which protects our streams and watersheds by protecting the woodlands and other natural areas that sponge up and filter the runoff that otherwise would contribute to stream degradation. While we are pleased that there are no proposed cuts to Legacy Open Space at this time, we urge all of Montgomery County's decisionmakers to support a consistent, adequate funding stream for Legacy Open Space.

Representatives of the Stormwater Partners would be happy to meet with you to discuss this urgent budget request and the critical role that Montgomery Parks plays in protecting our County's waters. I can be reached at (301) 652-9188 x22.

Diane M Cameron

Diane Cameron, Director
Conservation Program
Audubon Naturalist Society

Kit Gage, President
Friends of Sligo Creek

Tenley Wurglitz, President
Friends of Ten Mile Creek and
Little Seneca Reservoir

James Graham, President
Neighbors of Northwest Branch

Mathew Fleischer, Executive Director
Rock Creek Conservancy

Ann Smith, President
Seneca Creek Watershed Partners

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Caroline Taylor, Executive Director
Montgomery Countryside Alliance

Jennie Howland, President
Muddy Branch Alliance

Annita Seckinger, Board member
Watts Branch Watershed Alliance

Anne Vorce, Co-Founder
Water WatchDog Program.

Table 1: Summary of Storm Drain Projects

Address	Status	Estimated Price (with contigency)	Summary
12533 Montclair Dr.	Ready for construction	$19,000	Several sections of concrete pipe have separated at the seams and are causing subsidence in yards above the pipe. Due to large amount of property disturbance necessary to remove the overburden and replace the pipe a low-friction slipliner will be installed that will reduce pipe size but maintain current capacity.
2009 Norvale Rd.	Ready for construction	$18,500	Roadway runoff along an open section roadway is concentrating and eroding a particular property. This erosion also impacts an adjacent stream. Curbing will be installed to channel roadway runoff to a new inlet being installed and connected to an existing storm drain pipe
12628 Triple Crown Rd.	Ready for construction	$13,500	A groundwater seep within a DOT ROW is causing continuous ponding within a swale and causing mosquito issues. A French Drain will be installed to drain the seep and reduce ponding.
13712 Sherwood Forest Dr.	Ready for construction	$16,500	Concentrated roadway runoff from recent curb installation is flowing down a driveway into a property below road grade. The apron will be raised and curbing installed to convey the water to a nearby inlet that will be installed over an existing storm drain pipe.
6512 80th St.	Ready for construction	$14,100	Roadway narrows and causes runoff to flow down a driveway instead of continuing down the road. The apron will be raised and curbing installed to convey the water beyond the driveway.
9502 Forest Rd.	Survey, Utility Designation and Test Pits	$10,000	Roadway runoff is ponding in a depression in road and contributing to flooding in rear yards. An inlet will be installed and connected to an existing inlet across the street and tied into existing curbing at nearby intersection.
3709 Shepherd St.	CCTV, Survey, Utility Designation and Test Pits	$104,000	A terracotta pipe has collapsed and is causing flooding. The pipe will be upgraded and relocated into street with two new manhole structures.
8000 Greenwood Ave.	Survey, Utility Designation and Test Pits	$12,000	Roadway runoff is ponding in a depression in road and causing severe flooding and icing. A new inlet will be installed and connected to an existing inlet across the street.
Oakmont Ave.	Survey, Utility Designation and Test Pits	$21,000	Drainage structures are being upgraded to handle roadway repaving and curb installation along street.
Mateny Hill Rd.	Survey, Utility Designation and Test Pits	$51,500	Existing undersized pipe system is being upgraded to county standard in preparation for installation of DEP stormwater management.
Parker Ave.	Evaluation	Est $115,000	Curbing will be installed along open section to tie into existing curbing at both street ends and proposed curbing that will be installed during new Wheaton Library Construction
Gist Ave.	Evaluation	Est $30,000	Localized ponding occurring at site of proposed roundabout, evaluating LID treatment.

Inverness Dr.	Evaluation	Est $100,000	Undersized pipe and poorly functioning inlet causing flooding on property, evaluating possible mitigation.
Democracy Blvd.	Evaluation	Est $150,000	Ponding leading to icing in turn lane, evaluating possible inlet installation.

Table 2: Storm Drain Repair Projects FY15 – FY 16

Location	ADCmap	Note	Completed
19016 Jamieson Dr--Father Hurley Blvd	18-C4	storm drain system	9/23/2014
Linton at Patton St	37-F8	storm drain system	10/24/2014
Langley Drive at Kimes	37-F8	underdrain and 2 inlets	10/31/2014
Dorset #4705-- Town of Somerset	41-A1	one inlet	11/10/2014
Sangamore at Madawaska	40-G3	Small storm drain system	11/11/2014
Northfield Road + Hampden Lane	35-H10	storm drain system	12/12/2014
77th Street--Tomlinson Ave	35-A13	curbs and storm drain system	12/15/2014
78th Street--MacArthur Blvd	35-A13	curbs and storm drain system	12/23/2014
Nebel Street N. of Old Georgetwon Rd	29-J12	one inlet + underdrain	12/17/2014
Piney Meetinghouse S. of Cavanaugh	28-C7	groundwater discharge	12/23/2014
5528 Devon Road	35-H12	sump pump discharge--needs SD run	1/23/2015
Falmouth Rd at Blakeford Ct	40-J4	SD + groundwater discharge	1/19/2015
6215 Garnett Dr -- 6401 Garnett Dr	40-H1	sump pump	2/6/2015
Elkhart St at 16th Street	36-J8	one inlet	2/12/2015
Westlake Drive at Lakeview	35-C4	SD system	5/5/2015
5506 Ridgefield	40-H1	SD from Springfield to 5506	3/26/2015
Chapel Hill Road	30-J1	Enlarge inlet	2/6/2015
5815 Greenlawn Drive	35-G5	one inlet and SD run--Unfeasible due to utils	2/26/2015
Iroquoise Road	40-F3	slotted drain and two inlets	3/25/2016
Edson lane at Edson Park Place	35-G1	install one 10' COG inlet	3/30/2015
Armat Drive 7019 (7229 cul-de-sac ?)	35-D7	one inlet (grade around bulb+shoulders)	4/15/2015
Langdrum Lane #4836	41-A1	underdrain + SD extension	4/24/2015
Barkwater Court #7001	34-K12	lower grass shoulder around cul-de-sac	5/1/2015
Falls Road #9100	34-C6	cut a channel along shoulder	5/6/2015
Graybill Drive	32-E2	re-grade roadside channel	5/18/2015
1012 Hollywood Ave	31-F10	SD system	5/27/2015
56 Old Bonifant Road	31-E5	one grate inlet on s. side of road	5/20/2015
Hornbeam Drive #4612	29-K1	S-inlet at road sump	5/22/2015
606 Rosemere Ave	31-E10	SD system	6/10/2015
3005 Decatur Ave	36-F2	groundwater discharge	6/2/2015
Diamondback Drive at Decoverly Dr	28-E2	groundwater discharge	6/3/2015
Berryville Road	26-F5	groundwater discharge	6/9/2015
111 Ellsworth Drive	37-B7	one inlet, some C&G	6/15/2015
2912 Marlow Rd	32-B9	SD along n. side	6/24/2015
Verne Street	35-F13	one inlet, some C&G	6/23/2015
Melbourne Ave #303	37-E7	SD system for one block	7/10/2015
Greenwood Ave--Division Street	37-E11	Short SD system for one block	7/14/2015

Table 3: Outfall Repair Projects

Name	Status	Estimated Price	Summary
Dartmouth Dr. Silver Spring	Permitting	$94,000	Existing concrete chute conveyance has been eroded away. Will install a modified bio-swale to treat a portion of the run off, reducing the flowrate and a new stabilized riprap channel to convey stormwater down to floodplain channel.
9124 Hollyoak Dr. Bethesda	Permitting	$57,000	Concentrated overland flow has created a headcut with 3-5 feet high banks. The channel is eroding into an adjacent home owner properties and if left untreated will eventually threaten public infrastructure (roads and utilities). Due to site constraints, no surface flow options are viable, a pipe system to an end-wall and stabilized outfall is proposed. This will reduce flow, velocity and erosion rates.
9100 & 9104 Hollyoak Dr. Bethesda	Permitting	$28,000	Concrete apron failing at a 36" RCP. Whole channel is eroding, and the banks are in poor condition. Proposed a rock cascade will convey water from the culvert to a plunge pool with a rock sill. This will decrease the flow and erosion.
Havard St. Rockville	Permitting	$100,000	Poorly constructed channel with a gabion wall has collapsed. Debris (rocks, and trees) is also blocking the channel. Proposed step pool sequence with an imbricated wall to protect the adjacent property is proposed to step water level down to tie into existing exposed bedrock approximately 150 feet downstream of the outfall.
11208 Whisperwood Ln. Rockville	Design	Est $50,000	Eroded outfall through the woods. Stabilization includes use of rock step structures and stabilized banks.
Kentsdale & Purcel (Mercy Ct.)	Design	Est $100,000	Replacement of separated culvert sections and compromised endwall. Proposed design includes the recreation of a plungepool downstream of the culvert and stabilizing the banks in the immediate vicinity of the outfall.
Cardiff Ave.	Design	Est $30,000	The original end-section, several sections of pipe and the downstream concreate chute have broken off and are in the steam at the bottom of a very steep slope. Design is complicated by the existing 20" sewer line immediately downstream of the current outfall location, specimen trees, and the steep slope (greater that 2:1). The proposed design will encase the sewer line, back fill the void with compacted 57 stone, reconstruct a stable endwall, reconnect the pipe at a stabile joint and install a larger concrete chute with rebar grouted into the bedrock for greater long term stability.
10808 Margate Rd. Silver Spring	Planning	TBD	Severely eroded outfall downstream of DOT pipe. 6' to 7' deep gully. Park permit required. Parks department is aware of issues and met on site with DOT.

Evans Pkwy. Wheaton	Planning	TBD	Adjacent resident requested DEP assess outfall and stream erosion issue. The outfall concrete apron is compromised, most severely on left bank looking downstream. There is an erosional head cut forming around the side of the headwall towards Etna Pl. This erosion could eventually cause damage to the road and poses a danger to pedestrians. The erosion just downstream of the culvert is also scouring into adjacent resident's property.
22211 Shiloh Church Rd.	Planning	TBD	Pipe and headwall in good condition, severe erosion of channel embankment due to collapsed concrete pad. Suggested to place Class 1 or Class 2 riprap at outfall to prevent downstream erosion.
8012 Lily Stone	Planning	TBD	Outfall onto park property, pipe and headwall in satisfactory condition. Endwall has wingwall on one side with toe wall that is undermined ~1' for about a 4' length.

STORM DRAIN AND CULVERT LOCATIONS FY17-18		
Location	**Description/Culver Size**	**Estimated Construction Cost**
Wildcat Road	Six 48"RCP Culvert Pipe Replacement	$916,569.88
Long Corner Road	Two 48" RCP Culvert Pipe Replacement	$117,945.44
Kingstead Road	Two 48 " RCP Culvert Pipe Replacement	$252,187.00
9501 Brunette Road @ Lycoming St.	42" RCP Culvert Pipe Replacement	$66,670.00
Connecticut Avenue	Multi-Plate CMP Culvert Replacement	$1,000,000.00
Sunflower	7' Storm Drain Pipe Replacement / Lining	$700,000.00
Middlebrook Road @ Great Seneca Hwy.	54" and 60" Culvert Replacement	$1,500,000.00
Gainsborough Road	Culvert Replacement /Pavement	$44,000.00
16140 Deer Lake Drive	Storm Drain Replacment	$70,603.00
16132 Deer Lake Drive	Storm Drain Replacment	$55,100.00
9231 Harrington Drive	18" RCP Culvert Pipe Replacement	$40,390.00
1111 Stillwater Ave.	15" RCP Drainage Replacement	$18,592.00
15109 Columbine Way	Drainage Improvement Between Houses	$95,930.80
8213 Kentbury Drive	18" RCP Drainage Replacement	$153,753.00
Briars Road	Sump Pump	$92,681.49
12701 Gould Road	Underdrain Installation	$42,549.00
B C C High School	Storm Drain Repairs	$54,036.50
Aspen Street	Storm Drain Replacement / Lining	$1,000,000.00
	Estimates Total:	***$6,221,008.11***

Storm Drain Replacement CIP

- FY14 Allocation: $1,500,000

Description

This work includes; storm water culvert repair, headwalls, end sections, replacement, or extension of culverts to assure positive flow of storm water and channeling of storm water into existing ditch lines or structures. Proper drainage is instrumental in extending the life of roadways and reducing accident potential. Drainage structures are routinely inspected throughout the county. Based on inspection inventories, maintenance work is scheduled then addressed by functioning adequacy and consideration of future development. Repairs also cover shoulder areas and design problems to reduce safety hazards.

Progress

- This CIP is fully implemented for FY14.
- A constructability review checklist has been created to help develop review comments and report of finding for project drawings.
- Several projects are in the design phase on Kingstead Road, Kings Valley Road, Log House Road, Wildcat Road, Brooke Road, and Brunett Avenue.
  - Five emergency projects will start soon on Homecrest Rd, Kings Valley Dr, Whites Ferry Rd, and Wildcat Rd.

Before ***After***
Gaither Drive Pipe Replacement

Project List -

Depot	Name of Project	Agency	Project Type / Description	Pipe	Curb & Gutter (LF)	S/W (SY)	Asphalt (TONS)	Stone (Tons)	Date Complete	Dollars Expended
Coles	Randolph Road	In-house	Inlet Replacement	0	0.00	0.00	0.00	0.00	10/25/13	$107,075.21
Damas	Annapolis Rock Road	In-house	Detour Set-up & Implem	0	0.00	0.00	0.00	0.00	10/01/13	$38,335.08
GE	Log House Road	In-house	Culvert Pipe	20	0.00	0.00	8.98	0.00	07/24/13	$43,178.17
Coles	Industrial Pkwy @ Prosperity	In-house	Culvert Pipe	30	0.00	0.00	3.00	0.00	09/30/13	$23,844.02
1st Quarter Sub-Totals				**50**	**0.00**	**0.00**	**11.98**	**0.00**		**$212,432.48**
GE	Foggy Lane	In-house	Storm Drainage	740	0.00	0.00	0.00	560.60	12/24/2013	$206,352.24
2nd Quarter Sub-Totals				**740**	**0.00**	**0.00**	**0.00**	**560.60**		**$206,352.24**
SS	Parker Ave	In house	Culvert pipe	120	149.00	311.00	208.94	266.12	04/01/2014	$114,220.39
3rd Quarter Sub-Totals				**120**	**149.00**	**311.00**	**208.94**	**266.12**		**$114,220.39**
GE	Annapolis Rock Road	In-house	Out Fall	0	0.00	0.00	0.00	156.13	07/08/2014	$28,847.70
4th Quarter Sub-Totals				**0**	**0.00**	**0.00**	**0.00**	**156.13**		**$28,847.70**

Replacement: Storm Drain CIP

John Birton – Construction Supervisor, Concrete

Hillandale Road Storm Culvert Replacement Project in Bethesda

Description

FY15 CIP Allocation: $1,200,000 (100% Implemented)

This work includes; storm water culvert repair, headwalls, end sections, replacement, or extension of culverts to assure positive flow of storm water and channeling of storm water into existing ditch lines or structures. Proper drainage is instrumental in extending the life of roadways and reducing accident potential. Drainage structures are routinely inspected throughout the county. Based on inspection inventories, maintenance work is scheduled then addressed by functioning adequacy and consideration of future development. Repairs also cover shoulder areas and design problems to reduce safety hazards.

Project List

Name of Project	Project Type / Description	Pipe	Asphalt (TONS)	No. 57 Stone (Tons)	Dollars Expended
Kingsvalley Road	Culvert Pipe Replacement	64	255.58	107.91	$171,297.41
Whites Ferry Road Phase 1	Culvert pipe	396	533.04	203.35	$452,612.15
Whites Ferry Road Phase 2	Culvert Replacement	96	240.35	217.82	$258,557.08
Log House Road	Culvert Replacement	96	201.10	1,124.89	$303,902.60
Log House Road Phase III	Culvert Replacement	40	110.86	132.35	$92,385.01
New Bridge Road	Water Line - Reconnection		151.35		$57,240.03
FY15 TOTAL		**692**	**1,492.28**	**1,786.32**	**$1,335,994.28**

Replacement: Storm Drain CIP

John Birton – Construction Supervisor, Concrete

Crews install rip rap along the streambed as part of the Sweepstakes Road Project

Description

FY16 CIP: $1,500,000 (46% Implemented)
This work includes; storm water culvert repair, headwalls, end sections, replacement, or extension of culverts to assure positive flow of storm water and channeling of storm water into existing ditch lines or structures. Proper drainage is instrumental in extending the life of roadways and reducing accident potential. Drainage structures are routinely inspected throughout the county. Based on inspection inventories, maintenance work is scheduled then addressed by functioning adequacy and consideration of future development. Repairs also cover shoulder areas and design problems to reduce safety hazards.

Project List – Storm Drains

Name	Project Type	Curb & Gutter (LF)	Sidewalk (SF)	Asphalt (TONS)	Dollars Expended
Izaak Walton Way	Culvert Pipe	0	0.00	2,047.02	$502,496.70
Sweepstakes Road	Culvert Boxes	186.00	1,290.50	416.63	$201,391.88
FY16 1/2 TOTAL		186.00	1,290.50	2463.65	$703,888.58

FID	Project
0	Hillandale Rd
1	Little falls
2	Greenacres Dr
3	Newbridge Rd
4	Harrington Dr
5	Sweepstakes Rd
6	5504 Scioto Rd
7	Kingstead Rd
8	Kingstead Rd
9	Wildcat Rd
10	Wildcat Rd
11	Wildcat Rd
12	Wildcat Rd
13	Wildcat Rd
14	Long Corner
15	Wildcat Rd
16	Long Corner
17	Sligo&Dennis
18	Sligo Creek
19	3002 Dawson Ave
20	406 Ellsworth
21	Piney Branch
22	7701 Hackamore
23	Garland Ave
24	brookside dr
25	Columbine way
26	3300 Beret La
27	CC Dr @ Offut
28	Bar Harbor
29	Sangamore Rd
30	Millwood Rd
31	Homewood Pkwy
32	Charline Manor
33	Izaak Walton
34	Izaak Walton
35	9001 Brunet
36	8303 Bryant dr
37	Stilwater ave
38	12701 Gould Rd
39	Mill Run Dr
40	Mill Run Dr
41	Mill Run Dr
42	Kentbury Dr
43	Randolph
44	Randolph
45	Randolph
46	Randolph
47	Randolph
48	Randolph
49	Randolph
50	Randolph
51	Briars Rd
52	Briars Rd
53	Bradley Blvd
54	Ramsey Ave
55	Connecticut Ave

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MCDOT
Montgomery County Department of Transportation

Hollywood Avenue
Install Storm Drain System

Cost: $181,000

DAR Program
FY15- FY16

MCDOT
Montgomery County Department of Transportation

Greenwood Avenue at Division Street
Install Storm Drain System

Cost: $122,000

DAR Program
FY15- FY16

Before

After

MCDOT
Montgomery County Department of Transportation

Westlake Drive at Lakeview Drive
Install Storm Drain System
Cost: $269,000

DAR Program
FY15- FY16

Before

After

MCDOT
Montgomery County Department of Transportation

77th Street at Tomlinson Avenue
Install Storm Drain System

Cost: $36,000

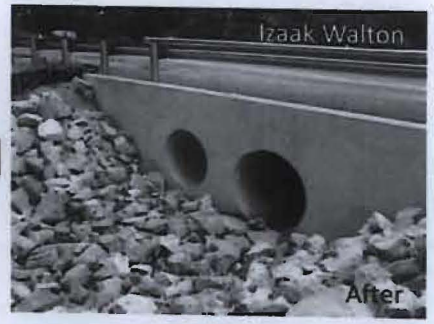
DAR Program
FY15- FY16

Before

After

During Construction

Storm Drain Culvert Replacement



- Izaak Walton Way
  - Two 36" Corrugated Metal Pipes failed and the road partially collapsed.
  - Replaced with 60" and 40" Reinforced Concrete Pipes.
  - Repaired the bridge portion of the roadway on Izaak Walton Way.
  - Total cost was $502,496.70

Storm Drain Culvert Replacement

- Sweepstakes Road
  - The road was constantly flooding
  - The road had been washed out due to flooding
  - The two 36" Corrugated Metal Pipes had collapsed
  - Repaired with two 5'x5' box culverts
  - Repaired bridge portion of roadway on Sweepstakes Road
  - Total cost $201,391.88 to date

Wapakoneta Road Improvements (P501101)

Category	Transportation	Date Last Modified	11/17/14
Sub Category	Roads	Required Adequate Public Facility	No
Administering Agency	Transportation (AAGE30)	Relocation Impact	None
Planning Area	Bethesda-Chevy Chase	Status	Under Construction

	Total	Thru FY15	Est FY16	Total 6 Years	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Beyond 6 Yrs
EXPENDITURE SCHEDULE ($000s)											
Planning, Design and Supervision	536	383	103	50	50	0	0	0	0	0	0
Land	209	31	178	0	0	0	0	0	0	0	0
Site Improvements and Utilities	10	0	10	0	0	0	0	0	0	0	0
Construction	808	0	608	200	200	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	**1,563**	**414**	**899**	**250**	**250**	**0**	**0**	**0**	**0**	**0**	**0**
FUNDING SCHEDULE ($000s)											
G.O. Bonds	1,533	414	869	250	250	0	0	0	0	0	0
Intergovernmental	30	0	30	0	0	0	0	0	0	0	0
Total	**1,563**	**414**	**899**	**250**	**250**	**0**	**0**	**0**	**0**	**0**	**0**
OPERATING BUDGET IMPACT ($000s)											
Maintenance				4	1	1	1	1	0	0	
Net Impact				**4**	**1**	**1**	**1**	**1**	**0**	**0**	

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 17	0
Appropriation Request Est.	FY 18	0
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		1,563
Expenditure / Encumbrances		427
Unencumbered Balance		1,136

Date First Appropriation	FY 13	
First Cost Estimate		
Current Scope	FY 13	1,563
Last FY's Cost Estimate		1,563

Description

This project provides for reconstruction of full-depth pavement and construction of storm drain improvements along Wapakoneta Road from Namakagan Road to Walhonding Road (approximate length of 900 linear feet). The specific improvements will include reconstruction and resurfacing of the roadway, curb and gutters within a 24-foot roadway section, storm drain system (inlets and drain pipes), and bio-retention facilities. Storm drain improvements will extend beyond properties along Wapakoneta Road. Wapakoneta Road south of Namakagan Road has curb and gutters, a storm drain system, and a reconstructed pavement.

Estimated Schedule

Design completed in Fall 2015. Property acquisition started in Spring 2013 and will conclude by Fall 2015. Construction is expected to start in Fall 2015 and will be completed by Summer 2016.

Justification

A number of the properties experience severe flooding of their dwellings during rain storms and the lack of a drainage system or roadside ditches also causes erosion of shoulders and inundation of the roadway in this older community. The residents of this segment of Wapakoneta Road have submitted a petition requesting installation of curb and gutters, storm drain improvements, and reconstruction of the road. This project is to alleviate erosion of road shoulders and inundation of the roadways and private properties along the west side of the street. The installation of the proposed storm drain improvements will be followed by the reconstruction/resurfacing of the pavement section. The project would benefit all residences in this part of Wapakoneta Road by reducing flooding. A review of impacts of pedestrians, bicycles and ADA (Americans with Disabilities Act of 1991) is being performed and addressed by this project. Traffic signals, streetlights, crosswalks, bus stops, ADA ramps, bikeways, and other pertinent issues are being considered in the design of the project to ensure pedestrian safety.

Other

Intergovemmental represents the Washington Suburban Sanitary Commission's share of utility relocation costs.

Disclosures

A pedestrian impact analysis has been completed for this project.

Coordination

Maryland-National Capital Park and Planning Commission, Department of Transportation, Department of Permitting Services, Washington Suburban Sanitary Commission, Washington Gas, Pepco, Verizon