T&E COMMITTEE #1
March 1, 2012

Worksession

MEMORANDUM

February 28, 2012

TO: Transportation, Infrastructure, Energy & Environment Committee

FROM: Keith Levchenko, Senior Legislative Analyst

SUBJECT: **Worksession: FY13-18 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:
  - *Major ramp-up in scope and costs for projects to address retrofit work per the NPDES-MS4 permit*
  - *Major increase in State Aid assumed in concert with bullet #1*

  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*
  - *Completion of Town of Chevy Chase Storm Drain Improvements in FY13 (same as approved)*
  - *One-year slippage in the Maple Avenue Storm Drain and Roadway Improvement project due to design issues.*
  - *Wapakoneta Road Improvements on schedule*

  NOTE: The Storm Drain CIP is funded primarily with current revenue and GO Bonds and thus any Council recommendations for funding in this program are tentative, pending CIP Reconciliation in early May.

The following officials and staff will be attending this meeting:

Stormwater Management CIP Discussion
Bob Hoyt, Director, Department of Environmental Protection (DEP)
Steve Shofar, Chief, Watershed Management Division, DEP
Gladys Balderrama, Manager, Director's Office, DEP
Craig Carson, Manager, Watershed Restoration Program, DEP
Mary Beck, CIP Coordinator, Office of Management and Budget (OMB)
Ed Piesen, OMB

Storm Drain CIP Discussion
Art Holmes, Director, Department of Transportation (DOT)
Al Roshdieh, Deputy Director, DOT
Bruce Johnston, Chief, Division of Transportation Engineering, DOT
Michael Mitchell, Senior Engineer, Division of Transportation Engineering, DOT
Adam Damin, OMB

FY13-18 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 FY13-18 CIP is attached on ©1-10. The Executive is recommending a large increase in the 6-year program (from $106.3 million to $295 million, or 178%). This follows a big increase two years ago (from $30.9 million to over $106 million in the latest FY11-16 Approved CIP).

This increase is 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).

The following table shows the Executive's recommendation compared to the Approved FY11-16 CIP.

Stormwater Management CIP (in $000s)

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	**106,275**	**8,880**	**11,445**	**20,695**	**21,305**	**23,955**	**19,995**		
FY13-18 CE Recommended	**295,000**			**35,000**	**45,000**	**50,000**	**50,000**	**55,000**	**60,000**
change from Approved	188,725			14,305	23,695	26,045	30,005		
percent change from Approved	177.6%			69.1%	111.2%	108.7%	150.1%		

The bulk of the increased dollars are in the SM Retrofit – Countywide project ($102 million increase) and two new projects: SM Retrofit – Roads ($64.4 million) and SM Retrofit – Schools ($20.1 million).

Overall, there are six ongoing projects and two new projects.

The sources of funds for the Approved FY11-16 CIP and the FY13-18 Recommended CIP are shown in the following chart.

Stormwater Management CIP Funding (in $000s)

	FY11-16 Total	FY13-18 Total	$$$ Change	% Change
Six-Year Total	**106,275**	**295,000**	**188,725**	**177.6%**
GO Bonds	-	-	-	
Current Revenue	-	-	-	
State Aid	4,980	60,000	55,020	1104.8%
SWM Waiver Fees	-	-	-	
Water Quality Protection Charge - Bonds	94,270	228,250	133,980	142.1%
Water Quality Protection Charge	7,025	6,750	(275)	-3.9%

Two 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. According to OMB staff, these bonds are being treated like revenue bonds and therefore do not factor into the County's General Obligation Bond Spending Affordability limits. For FY13-18, most of the recommended increase in spending would be covered with additional Water Quality Protection Charge bonds.

The rest of the increase is covered by increased State Aid ($10 million per year assumed).

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

Background

The T&E Committee has held several briefings on the NPDES-MS4 permit over the past few years (most recently in October 2011). Some general information presented at that meeting is reproduced below.

DEP is the lead agency for Montgomery County with regard to the NPDES Permit. The Maryland Department of the Environment (MDE) is the State agency responsible for approving NPDES permits, which are required as part of the Clean Water Act enforced by the Environmental Protection Agency. The first five-year permit was renewed in July 2001 and later modified in January 2004 to include six localities as "co-permittees." The County's permit covers all areas of the county with the exception of the cities of Gaithersburg, Rockville, and Takoma Park and lands under the control of State agencies (including the Maryland-National

Capital Park and Planning Commission and Washington Suburban Sanitary Commission) or Federal agencies.

The current 5-year permit was issued by MDE on February 16, 2010. DEP is the lead department coordinating a multi-department/agency response to meet the permit's requirements.

Permit Requirements

The major requirements of the County's NPDES-MS4 Permit are:

1. Complete restoration efforts for an additional 20 percent of the County's impervious, urban surfaces not currently restored to the maximum extent practicable. **This is the primary driver of FY13-18 CIP expenditure increases.**

2. Support regional strategies to reduce trash and increase recycling, as set forth in the Trash Free Potomac Watershed Initiative 2006 Action Agreement, to eliminate trash in the Anacostia and Potomac Rivers.

3. Implement TMDL limits to restore impaired waterways in the County by developing and implementing plans to reduce nonpoint source pollutant loads (e.g., from stormwater). Ensure anti-degradation measures for high quality waters (Tier II waters) within the County, including appropriate reviews prior to approval of capital projects, water/sewer plan amendments, and any development with the potential to affect water quality and downstream water quality.

4. Establish long-term schedules for identifying sources of pollution and water quality improvement opportunities for all watersheds in the County.

5. Use environmental-site design/low-impact development as a method to capture stormwater, by improving the County's stormwater management ordinances/regulations and modifying the County's planning and zoning codes as needed. Environmental Site Design (ESD), as outlined in Chapter 5 of the Maryland Stormwater Management Act, is required to be implemented to the maximum extent practicable.

6. All new construction in the County must follow the State stormwater controls as defined in the Stormwater Management Act of 2007. Chapter 5 of the Stormwater Management Act on Environmental Site Design requires developers to maintain after development, as nearly as possible, the predevelopment runoff characteristics to the maximum extent practicable.

7. Detect and eliminate illegal, non-stormwater discharges into the storm drain.

8. Involve and engage the public in the process of stormwater control.

The County submitted its draft County Coordination Implementation Strategy (CCIS) to the Maryland Department of the Environment (MDE) on February 16, 2011. Work with MDE is ongoing to finalize the CCIS; however, DEP does not expect major changes to the latest draft.

Cost Implications

The cost implications for implementation of these changes are substantial. Overall, last fall, DEP estimated the permit costs at about $305 million through 2015 and nearly $1.9 billion through 2030. Charts from the latest CCIS (attached on ©23-24) break out these estimated costs by watershed and type of work to be done.

Funding will be sought from Federal and State sources as well as local partners. However, as shown earlier, about 80 percent of CIP costs are expected to be funded with bonds supported by the County's Water Quality Protection Fund (WQPF).[1]

The increase in Water Quality Protection Fund bond funding in the Recommended FY13-18 CIP is about $134 million above what is programmed in the Approved FY11-16 CIP.

In FY13, the recommended increase in bonds is about $5.3 million, which translates roughly to about $381,000 in debt service (assuming a 14-1 ratio of bonds to debt service), which would in turn add about $1.66 in the FY13 ERU rate (assuming about $233,000 in revenue raised per dollar added to the ERU rate). Debt service costs will continue to grow as additional new debt is added to the Fund each year.

Note: without having the FY13 operating expense totals for the Water Quality Protection Fund, any potential FY13 ERU rate increase cannot be estimated at this time.

Water Quality Protection Fund

The Water Quality Protection Fund and charge were created in 2001 via Council legislation (Bill 28-00). For over 10 years, the Water Quality Protection Fund has covered the costs for the County's inspection, maintenance, and rehabilitation of thousands of stormwater management facilities. DEP is ramping up its implementation of the NPDES permit, and the Water Quality Protection Fund is the major source of funding (for both current revenue and bond financing) for this work as well.

The Executive is considering a number of changes to Chapter 19-35 of the County Code to modify the Water Quality Protection Charge. This is not surprising, given the major cost commitment of the NPDES-MS4 permit, the fact that the County now has the benefit of more

[1] The WQPF is funded via an annual charge on property tax bills to all residential properties and "associated non-residential properties" (properties that drain into facilities that also serve residential properties). The charge is based on the rate per equivalent residential unit (ERU) of imperviousness. The ERU was calculated to be an average of 2,406 square feet for detached residential properties. For FY12, the Council approved an ERU rate of $70.50. Detached homes pay 1 ERU. Townhouses pay 1/3 of an ERU. Multi-family and associated non-residential properties are billed as multiples of the ERU based on actual imperviousness.

than 10 years of experience with the Water Quality Protection Charge, and the availability of improved technologies to feasibly implement a more precise charge to properties. The intent of these changes will be to make the charge more equitable and more broad and ensure that there are sufficient resources to meet the NPDES-MS4 permit requirements.

Implementation

DEP already has engineering and construction contracts in place that are being utilized now for current work. Additional contracts will be needed in future years to handle the significantly greater construction load. DEP plans to utilize contractors as much as possible to minimize staff increases. DEP has already started to ramp up with the addition of new staff in the last several budgets.

Issues

State Aid Assumptions

As noted earlier, the CIP assumes far greater State aid levels than previously received in the stormwater management CIP. Council Staff asked Executive staff to elaborate on the $10 million per year State aid assumption for FY13-18. Below is DEP's response:

> *DEP discussed the County's State Aid projected support with MDE representatives. MDE has signaled that they are comfortable with the County's assumption the $60M, as other Counties are raising the issue of State support.*
>
> *DEP used the following criteria to program State Aid:*
> - *We targeted CIP projects that have historically received State Aid in the past (Stream restoration, Stormwater retrofit, Road LID).*
> - *The State Aid allocation for each CIP project on the amount of workload programmed, impervious area addressed by the project, and ability to implement the project as to take advantage of the State Aid.*
>
> *We agree in that the State Aid could be higher or lower than $10M. To minimize impact to the County, the FY13-18 CIP includes State Aid appropriation in projects for which we have written State Aid commitment For example, Stormwater retrofit and LID Road have State Aid appropriation ($1M combined for both projects) per commitment letter from the State. For all other projects State Aid will be appropriated as it becomes available. The projects programmed with State Aid were also prioritized accordingly.*

Council Staff confirmed that the State aid assumed is not contingent upon any State legislative changes. Receipt of the State aid will be a key factor in how much work DEP can implement in the CIP. From Montgomery County's perspective, Council Staff would argue that the local commitment of CIP dollars (already extremely high) should not have to increase further if the assumed State aid is not forthcoming.

Stormwater Management Retrofits

The biggest cost increase in the CIP is for stormwater retrofit work. The permit goal is to retrofit 4,300 acres to the maximum extent practicable (MEP). The following chart shows DEP's latest assumptions for acreage of impervious area retrofits within the FY13-18 CIP:

Estimated Acres of Retrofit by Project (FY13-18 CIP)

Project	Acres Treated*
Misc. Stream Valley Improvements	227
SM Retrofit - Government Facilities	23
SM Retrofit - Roads	147
SM Retrofit - Schools	14
SM Retrofit- Countywide	3,029
Watershed Restoration - Interagency	57
Total	**3,497**

*Note: Additional impervious area will be treated through rainscapes, ICC mitigation and stewardship, and redevelopment.

As shown on the chart, DEP estimates treatment of 3,497 acres (or over 81 percent of the permit goal) in FY13-18.

DEP staff provided the following information regarding its updated cost estimates for work:

> *LID practices are estimated based upon average $200,000/impervious area (unless we have updated cost estimates) for Roadway LID, School LID and Government Facilities LID. Stormwater pond retrofits (unless we have updated cost estimates) range between $100,000-$150,000 for design, which is typically 1/3 of the total project cost. Since we are retrofitting ponds with a small impervious area, the consultant still has to perform the same level of work for a facility with a larger contributing impervious area (within reason of complexity). Retrofitting the smaller facilities with lower impervious area is increasing the impervious cost. Stream Restoration projects are estimated based upon average $250/ft (unless we have more updated cost estimates or the project requires more extensive work). Please see the attached FY13-18 CIP Budget Spreadsheet for your reference.*
>
> *When the FY11-16 was prepared the CCIS and a portion of the projects had not yet been identified. The cost increase is due to several factors, including completion of CCIS, completion of studies, identifying additional potential projects, and more recent experience with actual implementation costs*

While below the permit goal, DEP's estimate of acres to be treated represents a massive ramp-up of work. DEP has received positive feedback from MDE regarding these plans and feels this estimate of work represents the most DEP can reasonably expect to implement over the next several years. It should also be noted that Montgomery County is the only jurisdiction in the State of Maryland that has received its latest NPDES-MS4 permit and that the work

identified in the CIP establishes the County as a statewide leader in its permit implementation efforts as well.

Project Review

Facility Planning: SM (PDF on ©2)

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	**7,025**	**925**	**1,200**	**1,350**	**1,350**	**1,100**	**1,100**		
FY13-18 CE Recommended	**6,750**			**1,150**	**1,150**	**1,150**	**1,100**	**1,100**	**1,100**
change from approved	(275)			(200)	(200)	50	-		
percent change from approved	-3.9%			-14.8%	-14.8%	4.5%	0.0%		

This project funds evaluations of watershed needs and identifies alternatives to address these needs, including possible CIP projects. This project provides approximately 30% design completion to projects generated from this program.

The project was increased substantially two years ago in order to provide for a feasibility study of the Anacostia River tributaries in partnership with the US Army Corps of Engineers, watershed assessments to meet the new NPDES permit requirements, and feasibility studies to identify Low Impact Development (LID) and other stormwater management retrofit opportunities at County schools.

Ongoing work is focusing on the development of implementation plans to meet the County's approved Total Maximum Daily Load (TMDL) goals. DEP is also identifying existing stormwater retrofit opportunities that do not require facility planning before pursuing final design.

The project is funded with Water Quality Protection Fund current revenue dollars.

Misc. Stream Valley Improvements (PDF on ©3-4)

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	**8,370**	**1,395**	**1,395**	**1,395**	**1,395**	**1,395**	**1,395**		
FY13-18 CE Recommended	**15,870**			**3,070**	**3,070**	**3,070**	**2,220**	**2,220**	**2,220**
change from approved	7,500			1,675	1,675	1,675	825		
percent change from approved	89.6%			120.1%	120.1%	120.1%	59.1%		

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 and data from the Countywide Stream Protection Strategy (see excerpt from 2003 update on ©12-13).

The Executive is recommending a total of $15.8 million over the six-year period (an increase of nearly 90% from the approved level of effort of approximately $1.4 million per year, $8.4 million over the six-year period). This cost increase is the result of scope changes and higher project costs. The projects to be done are noted on the PDF.

Work at Booze Creek is near completion. Donnybrook and Hollywood Branch are expected to be under construction this summer pending permit approval. Breewood Tributary is in design.

The project is funded with Water Quality Protection Bonds and State aid. For FY13, the Executive is recommending a substantial increase in State aid (from $255,000 per year to $1.0 million per year).

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. One project, Cold Spring Tributary, has been addressed by WSSC.

Council Staff recommends approval of the project as recommended by the County Executive. The T&E Committee concurs.

Stormwater Management Facility Major Structural Repair (PDF on ©5)

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	**9,250**	**1,300**	**1,350**	**1,600**	**1,650**	**1,650**	**1,700**		
FY13-18 CE Recommended	**14,800**			**2,350**	**2,450**	**2,500**	**2,500**	**2,500**	**2,500**
change from approved	5,550			750	800	850	800		
percent change from approved	60.0%			46.9%	48.5%	51.5%	47.1%		

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 $14.8 million (an increase of $5.6 million). This increase is needed to address an increased number of projects to meet MS4 permit requirements and the inclusion of larger and more complex projects and higher construction costs, and the utilization of new sliplining techniques.

The approved project is funded with WQPF Bonds and (new for FY13 and beyond) $1.0 million in State aid.

Projects to be done in FY13 are noted on the PDF. Beyond FY13, DEP expects to do: B'nai Israel, Brandermill, Hunters Woods, Chadswoods, and Persimmon Tree.

SM Retrofit: Countywide (©7-8)

SM Retrofit - Countywide

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	**52,010**	**1,785**	**2,425**	**11,000**	**11,500**	**14,400**	**10,900**		
FY13-18 CE Recommended	**154,010**			**16,210**	**24,200**	**25,100**	**24,500**	**29,500**	**34,500**
change from approved	102,000			5,210	12,700	10,700	13,600		
percent change from approved	196.1%			47.4%	110.4%	74.3%	124.8%		

This project provides for the design and construction of stormwater management retrofit projects countywide. The list of projects to be done is included on the PDF.

The Executive is recommending a total of $154 million over the six-year period (a huge increase compared to the approved six-year cost of $52 million, which was itself a big increase from two years ago). As with other projects, this project is recommended to utilize WQPC bonds along with State aid (which is recommended to increase from an approved level of $575,000 per year to a recommended $4.5 million per year.

SM Retrofit: Government Facilities (©6)

SM Retrofit - Government Facilities

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	**27,975**	**3,475**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**		
FY13-18 CE Recommended	**17,425**			**2,125**	**2,900**	**3,100**	**3,100**	**3,100**	**3,100**
change from approved	(10,550)			(2,775)	(2,000)	(1,800)	(1,800)		
percent change from approved	-37.7%			-56.6%	-40.8%	-36.7%	-36.7%		

This project provides for the design and construction of Low Impact Design (LID) stormwater management devices at County facilities. The Executive is recommending a six-year total of $17.4 million funded with WQPC bonds and (new for FY13 and beyond) $1.0 million per year in State aid. The project costs show a decrease because work related to roads and schools has been broken out into two new projects.

SM Retrofit: Roads (©6)

SM Retrofit - Roads

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	-	-	-	-	-	-	-		
FY13-18 CE Recommended	**64,425**			**8,515**	**9,910**	**11,500**	**11,500**	**11,500**	**11,500**
change from approved	64,425			8,515	9,910	11,500	11,500		
percent change from approved	#DIV/0!			#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		

This new project was split from the SM Retrofit: Government Facilities project. Projects planned for construction are listed on the PDF.

SM Retrofit: Schools (©6)

SM Retrofit - Schools

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	-	-	-	-	-	-	-		
FY13-18 CE Recommended	**20,100**			**1,270**	**1,010**	**3,270**	**4,850**	**4,850**	**4,850**
change from approved	20,100			1,270	1,010	3,270	4,850		
percent change from approved	#DIV/0!			#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		

This new project was also split from the SM Retrofit: Government Facilities project. Projects planned for construction are listed on the PDF. Unlike the other projects, no State aid is assumed for this project, because legislative action would be required.

Watershed Restoration – Interagency (©9-10)

Watershed Restoration - Interagency

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	**1,645**	-	**175**	**450**	**510**	**510**	-		
FY13-18 CE Recommended	**1,620**			**310**	**310**	**310**	**230**	**230**	**230**
change from approved	(25)			(140)	(200)	(200)	230		
percent change from approved	-1.5%			-31.1%	-39.2%	-39.2%	#DIV/0!		

This project is an ongoing series of subprojects that are being constructed in cooperation with the US Army Corps of Engineers.

For FY13-18 the Executive is recommending $1.6 million in expenditures, similar to FY11-16 Approved cost totals. Expenditures by the Corps of Engineers do not show up in the PDF. The Corps pays 65% to 75% of the total costs. A feasibility study for the Anacostia River Restoration Plan was completed in 2010 by the Corps of Engineers. The County share of these costs was included in the Facility Planning: SM project). Specific projects have been identified for FY13 and beyond.

FY13-18 STORM DRAINS CIP

NOTE: Council Staff is supportive of the FY13-18 Storm Drain CIP projects recommended by the County Executive. NOTE: The Storm Drain CIP is funded primarily with current revenue and G.O. Bonds and thus any Council recommendations for funding in this program are tentative, pending CIP Reconciliation in early May.

Summary

DOT manages the County storm drain 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 drain program. An informational brochure on the program is attached on ©22-23.

An excerpt from the Executive's Recommended FY13-18 CIP for storm drains is attached on ©12-22. The Executive is recommending $11.2 million for FY13-18. The following table shows the recommendation by fiscal year compared to the original Approved FY09-14 CIP and the Amended CIP.

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Amended	**14,136**	**2,746**	**3,796**	**3,166**	**1,476**	**1,476**	**1,476**		
FY13-18 CE Recommended	**11,228**			**3,043**	**2,021**	**1,476**	**1,476**	**1,606**	**1,606**
change from amended	(2,908)			(123)	545	-	-		
percent change from approved	-20.6%			-3.9%	36.9%	0.0%	0.0%		

The only amendment since the FY11-16 CIP was approved involved a $35,000 reduction of current revenue funding in the Facility Planning: Storm Drains project for FY12.

For the FY13-18 CIP, the County Executive is recommending a substantial decrease of $2.9 million (20.6%) over the amended CIP. The six-year decrease in expenditures is primarily the result of two ongoing projects moving closer to completion (Maple Avenue Storm Drain &

Roadway Improvement and the Town of Chevy Chase Storm Drain Improvements). No new projects are recommended.

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

Stormdrains CIP (in $000s)

	Six-Year Total	% of Total
FY13-18 Recommended Total	**11,228**	
GO Bonds	9,538	84.9%
Current Revenue	1,580	14.1%
State Aid	-	0.0%
Intergovernmental	110	1.0%

Most of the program continues to be funded with G.O. bonds with Facility Planning: Stormdrains funded with current revenue. Some storm drain projects can involve State or other outside participation. For example, the Maple Avenue Storm Drain project assumes some revenue from WSSC.

Project Review

Facility Planning: Stormdrains (PDF on ©12)

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	**1,440**	**225**	**215**	**250**	**250**	**250**	**250**		
FY13-18 CE Recommended	**1,580**			**250**	**250**	**250**	**250**	**290**	**290**
change from approved	140			-	-	-	-		
percent change from approved	9.7%			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% 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 $250,000 in FY13 through FY16 and $290,000 per year in FY17 and FY18, all with current revenue funding. The FY13 through FY16 amounts are the same as approved.

A large portion of funds from this project cover 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. The only project noted on the PDF is Meadowood Drive (see the Storm Drain: General project below for detail regarding this project). However, since the attached PDF was drafted, DOT has received requests for a number of other locations, including: Falstone Avenue, Oldchester at Landon, and Oldchester (from Maiden to Radnor).

Outfall Repairs (PDF on ©15)

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	**2,556**	**426**	**426**	**426**	**426**	**426**	**426**		
FY13-18 CE Recommended	**2,628**			**426**	**426**	**426**	**426**	**462**	**462**
change from approved	72			-	-	-	-		
percent change from approved	2.8%			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.

For FY13-18, the County Executive recommends a total of $2.6 million. The annual level of funding is the same as approved for FY13 through FY16 and slightly higher in FY17 and FY18.

A list of work to be done is noted on the PDF.

Storm Drain General (PDF on ©16)

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	**4,800**	**800**	**800**	**800**	**800**	**800**	**800**		
FY13-18 CE Recommended	**4,908**			**800**	**800**	**800**	**800**	**854**	**854**
change from approved	108			-	-	-	-		
percent change from approved	2.3%			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. The annual level of funding in the project has fluctuated over the past several years within a $600,000 to $900,000 range, depending on whether there are specific projects assumed to move forward and the availability of funds in general. 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 FY13-18, the County Executive recommends a total of $4.9 million ($800,000 per year through FY16 and 854,000 per year for FY17 and FY18). This annual level of effort is very close to current approved levels.

Two potential projects: Meadowood Drive and Chicago Avenue are noted on the PDF. Below is some additional description of these projects provided by DOT staff:

> *Meadowood Drive project: runoff from a sizeable area impacts some properties on Two Farm Drive and Meadowood Drive. There is no robust drainage system in current condition, especially on Two Farm Drive. Therefore, these properties have been impacted over the years especially during large storm events. A storm drain system will be installed starting on Two Farm Drive and continuing to Meadowood Drive for a distance of about 700 linear feet. The new system will adequately capture and convey the 10-year storm, thus minimizing the impact to the previously affected properties.*
>
> *Chicago Avenue and Gist Avenue: no closed storm drain system along this segment of Chicago Avenue, which is relatively flat. Runoff stagnates on some parts of the road and freezes in winter*

months. Project will install closed storm drain system starting on Chicago Avenue and continue to the existing system on Gist Avenue for a distance of about 900 linear feet.

Over the past three full CIP cycles, the Council has appropriated this project at a level sufficient to support the first two years of the program. This level of appropriation provides flexibility to DOT to bid and award contracts for work that may fall near the end of the first year of funding. The Recommended CIP continues this practice by assuming an FY13 appropriation of $1.6 million (to cover $800,000 in expenditures for each of the first two years of the CIP).

Town of Chevy Chase Storm Drain Improvements (PDF on ©17-18)

	Total Cost	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16
FY11-16 Latest Approved	**3,250**	**1,450**	**690**	**-**	**760**	**-**	**-**	**-**
FY13-18 CE Recommended	**3,262**	**772**			**772**	**-**	**-**	**-**
change from approved	12	(678)			12	-	-	-
percent change from approved	0.4%	-46.8%			1.6%	n/a	n/a	n/a

This project was first approved by the Council as an amendment to the FY07-12 CIP. It provided for the evaluation of conditions within 14 drainage areas within the Town of Chevy Chase. Design of improvements to four of the drainage areas was accomplished within the Facility Planning: Storm Drains project during FY07. Construction of improvements to these four drainage areas, as well as further evaluation of the other 10 drainage areas, was then included within the project and completed during FY09. It was noted at the time that additional resources would be considered for this project in the future as additional work is identified in the other drainage areas.

Phase 1 work (addressing the most severe issues) was completed in August 2008. Phase 2 was completed in FY11. Because of fiscal constraints, the final phase of work was approved to follow in FY13 instead of FY12. The scope and timing of the project is unchanged. A minor cost increase for overhead costs is noted. A letter from the Mayor of the Town of Chevy Chase requesting support for the final phase of work is attached on ©25.

As with all of the storm drain projects, this project could be adjusted at CIP reconciliation in early May. However, Council Staff notes that the Phase 3 work was previously moved to FY13 two years ago for affordability reasons, and Council Staff supports keeping this project on the current approved schedule.

Maple Avenue Storm Drain & Roadway Improvement (PDF on ©13-14)

	Total Cost	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16
FY11-16 Latest Approved	**1,620**	**1,620**	**280**	**410**	**930**	**-**	**-**	**-**
FY13-18 CE Recommended	**1,620**	**1,340**			**795**	**545**	**-**	**-**
change from approved	-	(280)			(135)	545	-	-
percent change from approved	0.0%	-17.3%			-14.5%	n/a	n/a	n/a

This project provides for approximately 1100 feet of storm drain improvements along Maple Avenue from Tilbury Street to Maryland Avenue (east of Wisconsin Avenue in the Bethesda Central Business District). The project will benefit 24 homes in the community by alleviating stagnating water on the sidewalk and inundation of five dwellings on Maple Avenue

and at least one dwelling on Rosedale Avenue as a result of sidewalks and front yards being lower than the roadway. The project schedule has slipped due to some design issues but the scope and cost remain unchanged. Construction is now scheduled to start in fall 2012.

Wapakoneta Road Improvements (PDF on ©21-22)

	Six-Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
FY11-16 Latest Approved	1,425		-	215	380	830	-		
FY13-18 CE Recommended	1,563			255	363	945	-	-	-
change from approved	138			40	(17)	115	-		
percent change from approved	9.7%			18.6%	-4.5%	13.9%	#DIV/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 Drain 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.[2] Design is scheduled to start this summer. The project schedule and scope are unchanged. Costs have increased due to inflation and overhead charges.

Attachments
KML:f:\levchenko\conservation of nat resources cip\fy13-18 cnr cip\t&e 3 1 12 sm and sd.doc

[2] 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 report recommended a number of Low Impact Development (LID) efforts that DEP has included for study and implementation that are being pursued with Water Quality Protection Fund resources.

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 destroys stream habitat, leading to dramatic 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 flooding. The County's Stormwater Management program is watershed-based and proactive in nature, focusing on mitigating problems caused by development that was constructed prior to implementation of stringent stormwater management controls, and on proactive planning in the developing portions of the County.

The Stormwater Management capital program addresses problems caused by prior development through facility planning studies and the development of Watershed Restoration Action Plans, and through the design and construction of stormwater retrofit projects (including low impact development) and stream restoration projects. These projects reduce pollution in streams and manage peak runoff flows to reduce stream channel habitat and sedimentation damage from watershed development and urbanized areas. This prevents flooding and reduces erosive velocities affecting stream channels. Project implementation helps fulfill requirements specified in the County's National Pollutant Discharge Elimination System (NPDES) municipal stormwater discharge permit. Stream restoration priorities are established through the Countywide Stream Protection Strategy (CSPS, February 2003).

Since FY04, the County has offered public maintenance services for qualified private stormwater facilities. All residential property and "associated non-residential" structures are eligible for County maintenance. Property owners pay a Water Quality Protection Charge (WQPC) to fund 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 County was issued a five year National Pollutant Discharge Elimination System (NPDES) permit in February 2010 to develop a storm water management program to prevent harmful pollutants from being washed or dumped into the Municipal Separate Storm Sewer System (MS-4). The Department of Transportation (DOT) is assisting the Department of Environmental Protection (DEP) in implementing the MS-4 Permit by (1) constructing Storm Water Management (SWM) retrofit projects which have been developed through DEP's MS-4 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 MS-4 permit, and (5) establishing quarterly meetings with DEP and DOT staff looking for additional areas of cooperation in meeting the MS-4 permit requirements.

HIGHLIGHTS

- Undertake 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) 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
- Expand the County's efforts to prevent trash from polluting our streams and rivers

PROGRAM CONTACTS

Contact Craig Carson of the Department of Environmental Protection at 240.777.7709 or Ed Piesen of the Office of Management and Budget at 240.777.2764 for more information regarding this department's capital budget.

CAPITAL PROGRAM REVIEW

Six ongoing projects and two new projects are recommended for FY13-18 and described in detail in the Project Description Forms. The Recommended FY13-18 Stormwater Management Program totals $295.0 million, an increase of $188.7 million or 177.6 percent from the amended approved FY11-16 program of $106.3 million. This increase will be funded primarily by long-term debt financing through the issuance of Water Quality Protection Bonds (WQPBs) secured by the Water Quality Protection Charge (WQPC). The bonds will cover expenditures incurred for the planning, 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 an assumption of $60 million in state aid based on the state's expressed interest in enacting legislation to support stormwater management efforts in the state.

Facility Planning: SM -- No. 809319

Category	**Conservation of Natural Resources**	Date Last Modified	**January 10, 2012**
Subcategory	**Stormwater Management**	Required Adequate Public Facility	**No**
Administering Agency	**Environmental Protection**	Relocation Impact	**None.**
Planning Area	**Countywide**	Status	**On-going**

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	15,270	6,688	1,832	6,750	1,150	1,150	1,150	1,100	1,100	1,100	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	42	42	0	0	0	0	0	0	0	0	0
Total	**15,312**	**6,730**	**1,832**	**6,750**	**1,150**	**1,150**	**1,150**	**1,100**	**1,100**	**1,100**	*

FUNDING SCHEDULE ($000)

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	9,375	793	1,832	6,750	1,150	1,150	1,150	1,100	1,100	1,100	0
Total	**15,312**	**6,730**	**1,832**	**6,750**	**1,150**	**1,150**	**1,150**	**1,100**	**1,100**	**1,100**	**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 products 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. Projects planned include: LID Facilities Phase II for Schools, Patuxent River, Dry Seneca and Little Seneca, Upper Potomac and Little Monocacy, and feasibility studies planned with the United States Army Corps of Engineers. This project also provides for operation of a automated fixed monitoring stations as required by the MS4 Permit.

COST CHANGE

Project cost increase is due to scope increases related to complying with requirements of the County's MS4 permit.

JUSTIFICATION

The Facility Planning products support the requirements outlined in the 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.

OTHER DISCLOSURES

- 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.
- * Expenditures will continue indefinitely.

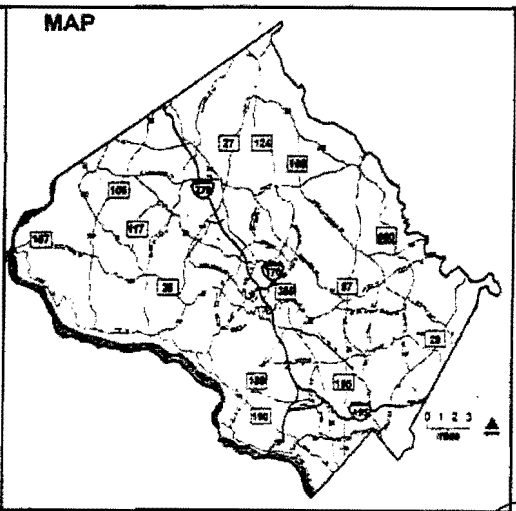
APPROPRIATION AND EXPENDITURE DATA

Date First Appropriation	FY93	($000)
First Cost Estimate Current Scope	FY13	15,312
Last FY's Cost Estimate		13,462
Appropriation Request	FY13	1,150
Appropriation Request Est.	FY14	1,150
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		8,562
Expenditures / Encumbrances		7,057
Unencumbered Balance		1,505
Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

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 (PDF No. 800900)
SM Retrofit Government Facilities (PDF No. 800900)
SM Retrofit Roads (PDF No. 801300)
SM Retrofit Schools (PDF No. 801301)
SM Retrofit Countywide (PDF No. 808726)
Misc. Stream Valley Improvements (PDF No. 807359)

MAP



Recommended

(3)

Misc Stream Valley Improvements -- No. 807359

Category	Conservation of Natural Resources	Date Last Modified	January 10, 2012
Subcategory	Stormwater Management	Required Adequate Public Facility	No
Administering Agency	Environmental Protection	Relocation Impact	None.
Planning Area	Countywide	Status	On-going

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	6,821	497	1,029	5,295	1,025	1,025	1,025	740	740	740	0
Land	42	2	40	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	14,260	293	3,392	10,575	2,045	2,045	2,045	1,480	1,480	1,480	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	**21,123**	**792**	**4,461**	**15,870**	**3,070**	**3,070**	**3,070**	**2,220**	**2,220**	**2,220**	*

FUNDING SCHEDULE ($000)

G.O. Bonds	288	288	0	0	0	0	0	0	0	0	0
State Aid	7,768	0	1,768	6,000	1,000	1,000	1,000	1,000	1,000	1,000	0
Stormwater Management Waiver Fees	233	0	233	0	0	0	0	0	0	0	0
Water Quality Protection Bonds	12,150	0	2,280	9,870	2,070	2,070	2,070	1,220	1,220	1,220	0
Water Quality Protection Charge	684	504	180	0	0	0	0	0	0	0	0
Total	**21,123**	**792**	**4,461**	**15,870**	**3,070**	**3,070**	**3,070**	**2,220**	**2,220**	**2,220**	**0**

OPERATING BUDGET IMPACT ($000)

Maintenance				350	0	5	25	60	105	155
Net Impact				**350**	**0**	**5**	**25**	**60**	**105**	**155**

DESCRIPTION

This project provides for design and construction of habitat restoration or stabilization measures for stream reaches having severe channel erosion, sedimentation, and habitat degradation. Developed areas constructed without modern stormwater controls contribute uncontrolled runoff which results in severely eroded streambanks, excessive sediment, tree loss, and degraded habitat for fish and aquatic life. Stormdrain outfalls damaged from severe erosion are identified and assessed in the project areas. Where possible, the outfalls are repaired as part of stream restoration projects and are funded from the Outfall Repairs project (No. 509948). When feasible, outfall discharges are redirected to create small constructed wetlands which provide new habitat and mitigate discharge impacts. Impacts to the stream also adversely affect sanitary sewer crossings by exposing sewer lines and manholes. These exposed and damaged sewer lines 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

Project cost change is due to scope changes to accommodate site conditions and higher project costs.

JUSTIFICATION

The project supports the requirements of the MS4 permit and addresses the goals of the Chesapeake Bay Tributary Strategy Initiatives, 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 Donnybrook Tributary, Hollywood Branch I, Breewood, Bedfordshire and Failsreach, Muddy Branch I, Great Seneca (GSGN 205), Stonybrook Tributary, Snakeden Branch II and Whetstone Run.

FISCAL NOTE

The partial State Aid appropriation is based on a letter of commitment the County received from the State of Maryland. While the State has indicated a desire to increase funding for stormwater management projects, this will require state legislative action. Until this legislation is enacted, only committed state funding has been appropriated.

OTHER DISCLOSURES

- 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.
- * Expenditures will continue indefinitely.

APPROPRIATION AND EXPENDITURE DATA

Date First Appropriation	FY73	($000)
First Cost Estimate Current Scope	FY13	21,123
Last FY's Cost Estimate		10,833

Appropriation Request	FY13	2,570
Appropriation Request Est.	FY14	2,070
Supplemental Appropriation Request		0
Transfer		0

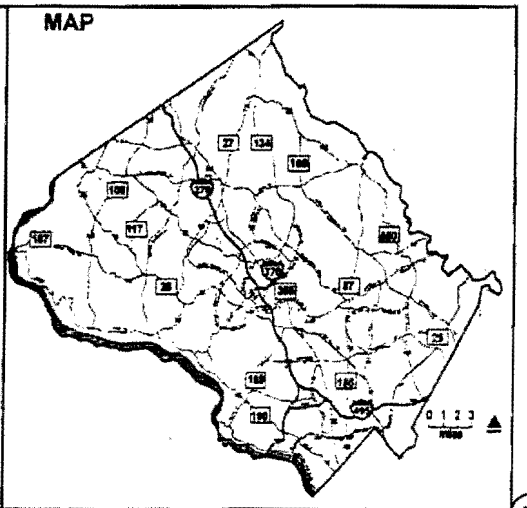
Cumulative Appropriation	5,253
Expenditures / Encumbrances	3,164
Unencumbered Balance	2,089

Partial Closeout Thru	FY10	13,706
New Partial Closeout	FY11	0
Total Partial Closeout		13,706

COORDINATION

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

MAP



Recommended

SM Facility Major Structural Repair -- No. 800700

Category	**Conservation of Natural Resources**	Date Last Modified	**January 10, 2012**
Subcategory	**Stormwater Management**	Required Adequate Public Facility	**No**
Administering Agency	**Environmental Protection**	Relocation Impact	**None.**
Planning Area	**Countywide**	Status	**On-going**

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	6,385	671	774	4,940	785	815	835	835	835	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	14,065	1,866	2,339	9,860	1,565	1,635	1,665	1,665	1,665	1,665	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	**20,450**	**2,537**	**3,113**	**14,800**	**2,350**	**2,450**	**2,500**	**2,500**	**2,500**	**2,500**	*

FUNDING SCHEDULE ($000)

State Aid	6,000	0	0	6,000	1,000	1,000	1,000	1,000	1,000	1,000	0
Water Quality Protection Bonds	11,450	0	2,650	8,800	1,350	1,450	1,500	1,500	1,500	1,500	0
Water Quality Protection Charge	3,000	2,537	463	0	0	0	0	0	0	0	0
Total	**20,450**	**2,537**	**3,113**	**14,800**	**2,350**	**2,450**	**2,500**	**2,500**	**2,500**	**2,500**	**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 2,000 stormwater management facilities, an increase of approximately 300 stormwater management facilities. The project includes old facilities that require more extensive maintenance as ponds fill with sediment, pipes rust, concrete structures crack and deteriorate, and dam embankments develop leaks. Some of the existing stormwater facilities require extensive engineering analysis and design and may require retrofitting which is funded through the SM Retrofit: Countywide project (No. 808726).

COST CHANGE

Increase is due to an increase number of projects to meet the Municipal Separate Storm Sewer System Permit (MS4), the inclusion of larger and more complex projects, higher construction costs, and the utilization of new sliplining techniques.

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 those few, generally large, 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

The Department of Environmental Protection (DEP) continues to partner with the Maryland State Highway Administration as part of the Inter-County Connector (ICC). The partnership enables the county to realize significant cost savings while retrofitting a number of stormwater management facilities. Projects include: Quince Orchard Manor (Quince Orchard Valley Neighborhood Park), Montgomery Auto Park, Brookville Depot, Lake Whetstone, Chadswood, Hunters Woods, B'nai Israel, Brandermill, Gunners Lake, Persimmon Tree and ICC cost-share.

FISCAL NOTE

While the State has indicated a desire to increase funding for stormwater management projects, this will require state legislative action. Until that legislation is enacted, only committed state funding is appropriated.

OTHER DISCLOSURES

- 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.
- * Expenditures will continue indefinitely.

APPROPRIATION AND EXPENDITURE DATA

Date First Appropriation	FY07	($000)
First Cost Estimate Current Scope	FY13	20,450
Last FY's Cost Estimate		12,250

Appropriation Request	FY13	1,350
Appropriation Request Est.	FY14	1,450
Supplemental Appropriation Request		0
Transfer		0

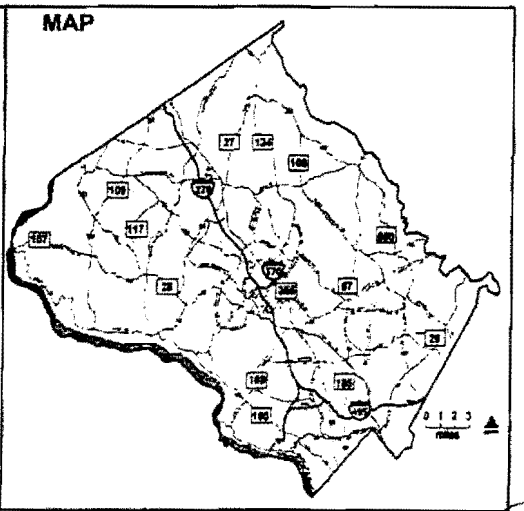
Cumulative Appropriation	5,650
Expenditures / Encumbrances	3,223
Unencumbered Balance	2,427

Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

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)

MAP



Recommended

(5)

SM Retrofit - Government Facilities -- No. 800900

Category	**Conservation of Natural Resources**	Date Last Modified	**January 10, 2012**
Subcategory	**Stormwater Management**	Required Adequate Public Facility	**No**
Administering Agency	**Environmental Protection**	Relocation Impact	**None.**
Planning Area	**Countywide**	Status	**On-going**

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	9,595	1,244	2,541	5,810	705	965	1,035	1,035	1,035	1,035	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	17,378	158	5,605	11,615	1,420	1,935	2,065	2,065	2,065	2,065	0
Other	6	0	6	0	0	0	0	0	0	0	0
Total	**26,982**	**1,405**	**8,152**	**17,425**	**2,125**	**2,900**	**3,100**	**3,100**	**3,100**	**3,100**	*

FUNDING SCHEDULE ($000)

State Aid	6,000	0	0	6,000	1,000	1,000	1,000	1,000	1,000	1,000	0
Water Quality Protection Bonds	19,800	223	8,152	11,425	1,125	1,900	2,100	2,100	2,100	2,100	0
Water Quality Protection Charge	1,182	1,182	0	0	0	0	0	0	0	0	0
Total	**26,982**	**1,405**	**8,152**	**17,425**	**2,125**	**2,900**	**3,100**	**3,100**	**3,100**	**3,100**	**0**

OPERATING BUDGET IMPACT ($000)

Maintenance				123	0	1	6	21	36	59
Net Impact				**123**	**0**	**1**	**6**	**21**	**36**	**59**

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 without, or inadequate stormwater, control is required in the County's Municipal Separate Storm Sewer System (MS4) Permit as detailed in the draft 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

The project costs have decreased due to the transfer of SM Retrofit activities for roads and schools to two new stand alone projects (No. 801300 and No. 801301). Costs for the remaining County facilities have increased due to the addition of candidate projects to comply with the County's MS4 permit requirements.

JUSTIFICATION

The SM Retrofit - Government Facilities project has been separated into three CIP projects: SM Retrofit - Government Facilities (CIP ID No. 800900), SM Retrofit - Roads (CIP ID No. 801300) and SM Retrofit - Schools (CIP ID No. 801301). This project supports the requirements of the County's MS4 permit and addresses the goals of the Chesapeake Bay tributary strategy initiatives, and the County's adopted water quality goals (Chapter 19, Article IV), which require 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.

Projects in design and construction include one project located in the Rock Creek Wateshed, one project located in the Muddy Branch Watershed, three projects located in the Great Seneca Creek Watershed, one project located in the Patuxent River Watershed, one project located in the Cabin John Creek Watershed, and four projects located in the Anacostia River Watershed.

FISCAL NOTE

While the State has indicated a desire to increase funding for stormwater management projects, this will require state legislative action. Until that legislation is enacted, only committed state funding is appropriated.

OTHER DISCLOSURES

- 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.
- * Expenditures will continue indefinitely.

APPROPRIATION AND EXPENDITURE DATA

Date First Appropriation	FY09	($000)
First Cost Estimate Current Scope	FY13	26,982
Last FY's Cost Estimate		29,157

Appropriation Request	FY13	1,125
Appropriation Request Est.	FY14	1,900
Supplemental Appropriation Request		0
Transfer		0

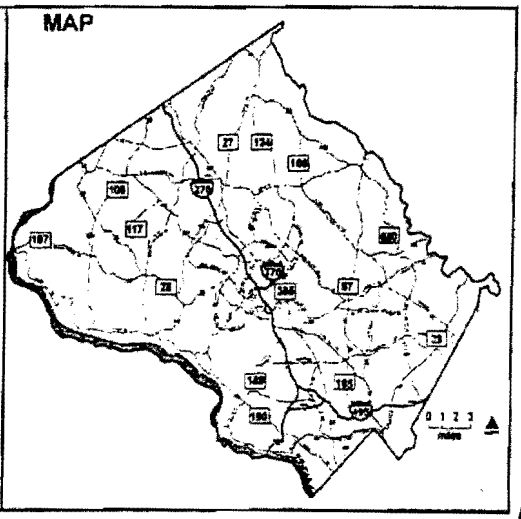
Cumulative Appropriation	9,557
Expenditures / Encumbrances	4,481
Unencumbered Balance	5,076

Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

COORDINATION

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

MAP



SM Retrofit - Roads -- No. 801300

Category	Conservation of Natural Resources	Date Last Modified	January 10, 2012
Subcategory	Stormwater Management	Required Adequate Public Facility	No
Administering Agency	Environmental Protection	Relocation Impact	None.
Planning Area	Countywide	Status	On-going

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	21,460	0	0	21,460	2,840	3,300	3,830	3,830	3,830	3,830	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	42,965	0	0	42,965	5,675	6,610	7,670	7,670	7,670	7,670	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	**64,425**	**0**	**0**	**64,425**	**8,515**	**9,910**	**11,500**	**11,500**	**11,500**	**11,500**	*

FUNDING SCHEDULE ($000)

State Aid	15,000	0	0	15,000	2,500	2,500	2,500	2,500	2,500	2,500	0
Water Quality Protection Bonds	49,425	0	0	49,425	6,015	7,410	9,000	9,000	9,000	9,000	0
Total	**64,425**	**0**	**0**	**64,425**	**8,515**	**9,910**	**11,500**	**11,500**	**11,500**	**11,500**	**0**

OPERATING BUDGET IMPACT ($000)

Maintenance				923	0	9	18	124	230	542
Net Impact				**923**	**0**	**9**	**18**	**124**	**230**	**542**

DESCRIPTION

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

COST CHANGE

This project was created to separate stormwater retrofit costs for roads from those previously budgeted in the SM Retrofit-Government Facilities CIP project (No. 800900). Project costs for SM Retrofit-Roads have increased significantly due to the addition of candidate projects to comply with the County's MS4 permit requirements.

JUSTIFICATION

This project supports the requirements of the MS4 permit and addresses the goals of the Chesapeake Bay tributary strategy initiative, 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).

Projects planned for construction include Arcola Avenue DOT Participation, Dennis Avenue DOT Participation, Forest Estates DOT Participation, Franklin Knolls DOT Partnership, Lockridge Drive, and Stewart Lane.

Projects planned for design and construction by watershed include three projects in the Rock Creek Watershed and seven projects in the Anacostia River Watershed.

FISCAL NOTE

The partial State Aid appropriation is based on a letter of commitment the County received from the State of Maryland. While the State has indicated a desire to increase funding for stormwater management projects, this will require state legislative action. Until that legislation is enacted, only committed state funding is appropriated.

OTHER DISCLOSURES

- 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.
- * Expenditures will continue indefinitely.

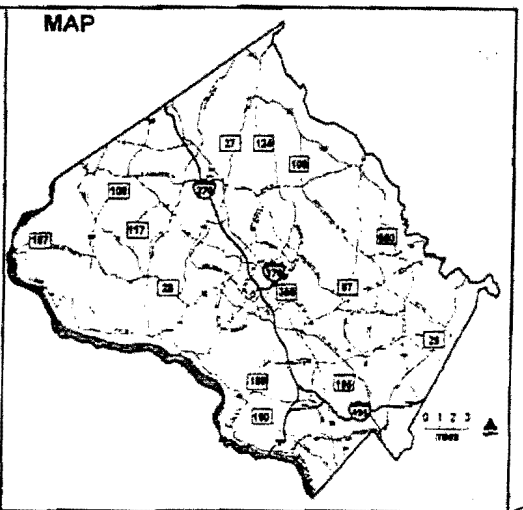
APPROPRIATION AND EXPENDITURE DATA

Date First Appropriation	FY13	($000)
First Cost Estimate Current Scope	FY13	64,425
Last FY's Cost Estimate		0
Appropriation Request	FY13	6,515
Appropriation Request Est.	FY14	7,410
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		0
Expenditures / Encumbrances		0
Unencumbered Balance		0
Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

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

MAP



SM Retrofit - Schools -- No. 801301

Category	**Conservation of Natural Resources**	Date Last Modified	**January 10, 2012**
Subcategory	**Stormwater Management**	Required Adequate Public Facility	**No**
Administering Agency	**Environmental Protection**	Relocation Impact	**None.**
Planning Area	**Countywide**	Status	**On-going**

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	6,690	0	0	6,690	420	335	1,090	1,615	1,615	1,615	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	13,410	0	0	13,410	850	675	2,180	3,235	3,235	3,235	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	**20,100**	**0**	**0**	**20,100**	**1,270**	**1,010**	**3,270**	**4,850**	**4,850**	**4,850**	*

FUNDING SCHEDULE ($000)

Water Quality Protection Bonds	20,100	0	0	20,100	1,270	1,010	3,270	4,850	4,850	4,850	0
Total	**20,100**	**0**	**0**	**20,100**	**1,270**	**1,010**	**3,270**	**4,850**	**4,850**	**4,850**	**0**

OPERATING BUDGET IMPACT ($000)

Maintenance				108	0	4	8	20	32	44
Net Impact				**108**	**0**	**4**	**8**	**20**	**32**	**44**

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 would 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

This project was created to separate stormwater retrofit costs for schools from those budgeted in the SM Retrofit-Government Facilities CIP project (No. 800900). Project costs for SM Retrofit-Schools have increased significantly due to the addition of candidate projects to comply with the County's MS4 permit requirements.

JUSTIFICATION

This project supports the requirements of the MS4 permit and addresses the goals of the Chesapeake Bay tributary strategy initiatives, 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 new stand alone project includes LID/ESD projects located on MCPS property and allows for a more efficient implementation of projects in partnership with MCPS. Projects planned for design and construction on MCPS properties include one project located in the Rock Creek Watershed, one project located in the Great Seneca Creek Watershed, one project in the Watts Branch Watershed, and five projects located in the Anacosta River Watershed.

FISCAL NOTE

No state aid is programmend for this project. However, while the State has indicated a desire to increase funding for stormwater management projects, this will require state legislative action. Until that legislation is enacted, only committed state funding is appropriated.

OTHER DISCLOSURES

- 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.
- * Expenditures will continue indefinitely.

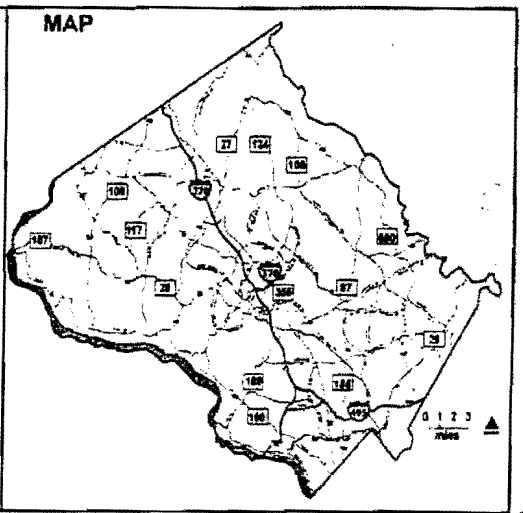
APPROPRIATION AND EXPENDITURE DATA

Date First Appropriation	FY13	($000)
First Cost Estimate Current Scope	FY13	20,100
Last FY's Cost Estimate		0
Appropriation Request	FY13	1,270
Appropriation Request Est.	FY14	1,010
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		0
Expenditures / Encumbrances		0
Unencumbered Balance		0
Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

COORDINATION

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

MAP



SM Retrofit: Countywide -- No. 808726

Category	**Conservation of Natural Resources**	Date Last Modified	**January 10, 2012**
Subcategory	**Stormwater Management**	Required Adequate Public Facility	**No**
Administering Agency	**Environmental Protection**	Relocation Impact	**None.**
Planning Area	**Countywide**	Status	**On-going**

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	52,499	911	263	51,325	5,400	8,065	8,365	8,165	9,830	11,500	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	109,561	1,246	5,630	102,685	10,810	16,135	16,735	16,335	19,670	23,000	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	**162,060**	**2,157**	**5,893**	**154,010**	**16,210**	**24,200**	**25,100**	**24,500**	**29,500**	**34,500**	*

FUNDING SCHEDULE ($000)

Fed Stimulus (State Allocation)	263	263	0	0	0	0	0	0	0	0	0
Federal Aid	299	0	299	0	0	0	0	0	0	0	0
State Aid	31,429	1,894	2,535	27,000	4,500	4,500	4,500	4,500	4,500	4,500	0
Water Quality Protection Bonds	130,069	0	3,059	127,010	11,710	19,700	20,600	20,000	25,000	30,000	0
Total	**162,060**	**2,157**	**5,893**	**154,010**	**16,210**	**24,200**	**25,100**	**24,500**	**29,500**	**34,500**	**0**

OPERATING BUDGET IMPACT ($000)

Maintenance				36	0	0	0	6	12	18
Net Impact				**36**	**0**	**0**	**0**	**6**	**12**	**18**

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 4,300 impervious acres, not currently treated to the "maximum extent practicable" to address the approved Total Maximum Daily Loads (TMDLs). 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 2000 Agreement. In small drainage areas, retrofit projects may also include biofiltration, bioretention, or stormwater filtering devices.

COST CHANGE

The increased level of funding in this project reflects the new MS4 permit requirements outlined in the Montgomery County Coordinated Implementation Strategy (CCIS).

JUSTIFICATION

This project is needed to comply with the new 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 Chesapeake Bay tributary strategy initiatives and the Anacostia Watershed Restoration Agreement.

OTHER

Projects in design and construction include thirteen projects located in the Rock Creek Waterhed, five projects located in the Watts Branch Watershed, forty four projects located in the Great Seneca Creek Watershed, five projects located in the Muddy Branch Watershed, five projects located in the Cabin John Creek Watershed, and fifteen projects located in the Anacostia River Watershed.

FISCAL NOTE

While the State has indicated a desire to increase funding for stormwater management projects, this will require state legislative action. Until that legislation is enacted, only committed state funding is appropriated.

OTHER DISCLOSURES

- 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.
- * Expenditures will continue indefinitely.

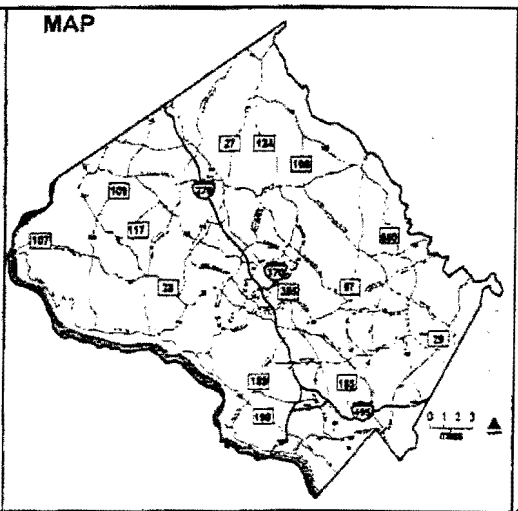
APPROPRIATION AND EXPENDITURE DATA

Date First Appropriation	FY87	($000)
First Cost Estimate Current Scope	FY13	162,060
Last FY's Cost Estimate		55,851
Appropriation Request	FY13	11,710
Appropriation Request Est.	FY14	19,700
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		8,050
Expenditures / Encumbrances		4,723
Unencumbered Balance		3,327
Partial Closeout Thru	FY10	13,241
New Partial Closeout	FY11	0
Total Partial Closeout		13,241

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)

MAP



Watershed Restoration - Interagency -- No. 809342

Category	**Conservation of Natural Resources**	Date Last Modified	**January 10, 2012**
Subcategory	**Stormwater Management**	Required Adequate Public Facility	**No**
Administering Agency	**Environmental Protection**	Relocation Impact	**None.**
Planning Area	**Colesville-White Oak**	Status	**On-going**

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	3,438	2,466	192	780	60	60	310	230	60	60	0
Land	129	4	125	0	0	0	0	0	0	0	0
Site Improvements and Utilities	134	0	134	0	0	0	0	0	0	0	0
Construction	2,335	954	541	840	250	250	0	0	170	170	0
Other	2	1	1	0	0	0	0	0	0	0	0
Total	**6,038**	**3,425**	**993**	**1,620**	**310**	**310**	**310**	**230**	**230**	**230**	**0**

FUNDING SCHEDULE ($000)

G.O. Bonds	527	527	0	0	0	0	0	0	0	0	0
Stormwater Management Waiver Fees	3,376	2,868	508	0	0	0	0	0	0	0	0
Water Quality Protection Bonds	2,105	0	485	1,620	310	310	310	230	230	230	0
Water Quality Protection Charge	30	30	0	0	0	0	0	0	0	0	0
Total	**6,038**	**3,425**	**993**	**1,620**	**310**	**310**	**310**	**230**	**230**	**230**	**0**

OPERATING BUDGET IMPACT ($000)

Maintenance				50	0	0	5	10	15	20
Net Impact				**50**	**0**	**0**	**5**	**10**	**15**	**20**

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 done 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 Environmental Protection and Maryland-National Capital Park and Planning Commission.

COST CHANGE

Project cost increase is due to the added program expenditures in FY17 and FY18.

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 draft 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 activities and in-kind services.

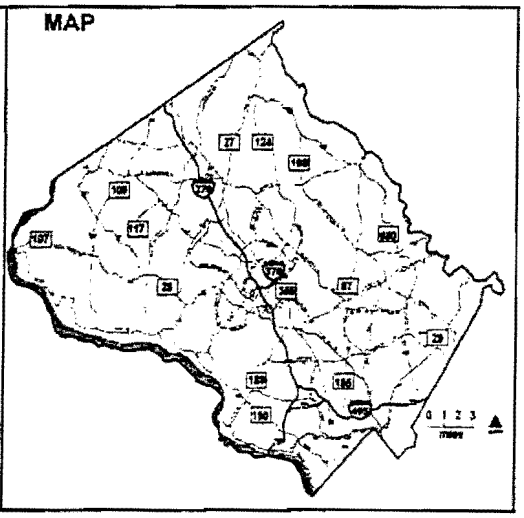
APPROPRIATION AND EXPENDITURE DATA

Date First Appropriation	FY93	($000)
First Cost Estimate Current Scope	FY13	6,038
Last FY's Cost Estimate		5,888
Appropriation Request	FY13	310
Appropriation Request Est.	FY14	310
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		4,418
Expenditures / Encumbrances		3,671
Unencumbered Balance		747
Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

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)

MAP



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 (which provide for stream enclosure), 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 and environmental 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 addition, the County was issued a five year National Pollutant Discharge Elimination System (NPDES) Permit in February 2010 to develop 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 assisting 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.

HIGHLIGHTS

- Complete phase three of the Town of Chevy Chase Storm Drain Improvement project to improve drainage.

PROGRAM CONTACTS

Contact Holger Serrano of the Department of Transportation at 240.777.7235 or Adam Damin of the Office of Management and Budget at 240.777.2794 for more information regarding this department's capital budget.

CAPITAL PROGRAM REVIEW

The Storm Drainage program for FY13-18 includes four ongoing and one continuing project. The overall cost of the recommended six-year program is $11.2 million, representing a $2.9 million or 20.6 percent decrease from the FY11-16 Amended Program of $14.1 million. The cost decrease is primarily due to the completion of the Henderson Avenue Storm Drain and Roadway Improvement project in FY12.

Facility Planning: Storm Drains -- No. 508180

Category	**Conservation of Natural Resources**	Date Last Modified	**January 08, 2012**
Subcategory	**Storm Drains**	Required Adequate Public Facility	**No**
Administering Agency	**Transportation**	Relocation Impact	**None.**
Planning Area	**Countywide**	Status	**On-going**

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	5,617	3,691	346	1,580	250	250	250	250	290	290	0
Land	128	128	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	2	2	0	0	0	0	0	0	0	0	0
Total	**5,784**	**3,858**	**346**	**1,580**	**250**	**250**	**250**	**250**	**290**	**290**	*

FUNDING SCHEDULE ($000)

Current Revenue: General	5,683	3,757	346	1,580	250	250	250	250	290	290	0
G.O. Bonds	101	101	0	0	0	0	0	0	0	0	0
Total	**5,784**	**3,858**	**346**	**1,580**	**250**	**250**	**250**	**250**	**290**	**290**	**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 FY17-18 and overhead costs 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, the preparation of 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: Aberdeen Place, Mississippi Avenue, Woodside Parkway, Manchester Road at Bradford Road, Hermitage Avenue, Renwood Lane, Fireside Drive, Burnt Mills Hills.

Candidate projects for FY13-14: Meadowood Drive.

OTHER DISCLOSURES

- A pedestrian impact analysis has been completed for this project.
- * Expenditures will continue indefinitely.

APPROPRIATION AND EXPENDITURE DATA

Date First Appropriation	FY81	($000)
First Cost Estimate Current Scope	FY13	5,784
Last FY's Cost Estimate		5,204

Appropriation Request	FY13	250
Appropriation Request Est.	FY14	250
Supplemental Appropriation Request		0
Transfer		0

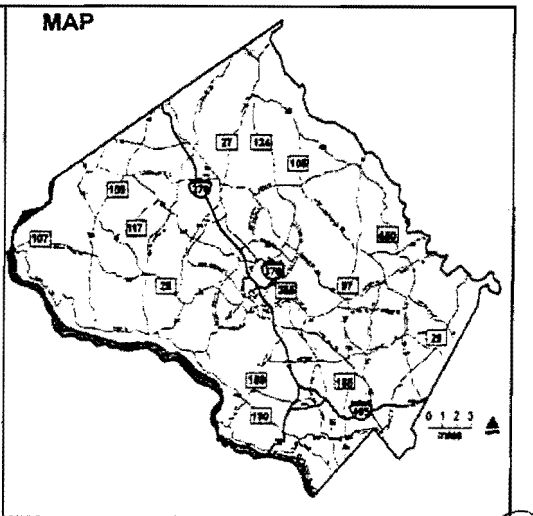
Cumulative Appropriation	4,203
Expenditures / Encumbrances	3,981
Unencumbered Balance	222

Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

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)

MAP



Recommended

Maple Avenue Storm Drain & Roadway Improvements -- No. 501100

Category	**Conservation of Natural Resources**	Date Last Modified	**January 08, 2012**
Subcategory	**Storm Drains**	Required Adequate Public Facility	**No**
Administering Agency	**Transportation**	Relocation Impact	**None.**
Planning Area	**Bethesda-Chevy Chase**	Status	**Planning Stage**

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	485	61	219	205	205	0	0	0	0	0	0
Land	135	0	0	135	0	135	0	0	0	0	0
Site Improvements and Utilities	10	0	0	10	0	10	0	0	0	0	0
Construction	990	0	0	990	590	400	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	**1,620**	**61**	**219**	**1,340**	**795**	**545**	**0**	**0**	**0**	**0**	**0**

FUNDING SCHEDULE ($000)

G.O. Bonds	1,510	61	219	1,230	795	435	0	0	0	0	0
Intergovernmental	110	0	0	110	0	110	0	0	0	0	0
Total	**1,620**	**61**	**219**	**1,340**	**795**	**545**	**0**	**0**	**0**	**0**	**0**

OPERATING BUDGET IMPACT ($000)

Maintenance				5	0	1	1	1	1	1
Net Impact				**5**	**0**	**1**	**1**	**1**	**1**	**1**

DESCRIPTION

This project provides for reconstruction of full depth pavement and construction of storm drain improvements along Maple Avenue from Tilbury Street to about 200 linear feet east of Maryland Avenue (approximate length of 1,100 linear feet). The specific improvements will include reconstruction and resurfacing of the roadway, curb and gutters within a 22-foot roadway section, storm drain system (inlets and drain pipes), and adjustment of existing inlets.

CAPACITY

The storm drain design is based on the ten-year storm frequency interval.

ESTIMATED SCHEDULE

Design commenced in the summer of 2010 and will be completed by the Winter of 2011. Construction is expected to start in the Fall of 2012 and take approximately 12 months to complete.

JUSTIFICATION

The community has experienced severe flooding of the sidewalks, yards, driveways, garages and basements during rain storms and has requested storm drain improvements. This project is to alleviate stagnating water on the sidewalk and inundation of dwellings along Maple Avenue from Tilbury Street to Maryland Avenue. The installation of the proposed storm drain system is followed by the reconstruction/resurfacing of the pavement section. The project would benefit all 24 residences in the community.

FISCAL NOTE

Intergovernmental revenue is from the Washington Suburban Sanitary Commission for its agreed share of water and sewer relocation costs.

OTHER DISCLOSURES

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

APPROPRIATION AND EXPENDITURE DATA

Date First Appropriation	FY11	($000)
First Cost Estimate Current Scope	FY11	1,620
Last FY's Cost Estimate		1,620

Appropriation Request	FY13	0
Appropriation Request Est.	FY14	0
Supplemental Appropriation Request		0
Transfer		0

Cumulative Appropriation	1,620
Expenditures / Encumbrances	64
Unencumbered Balance	1,556

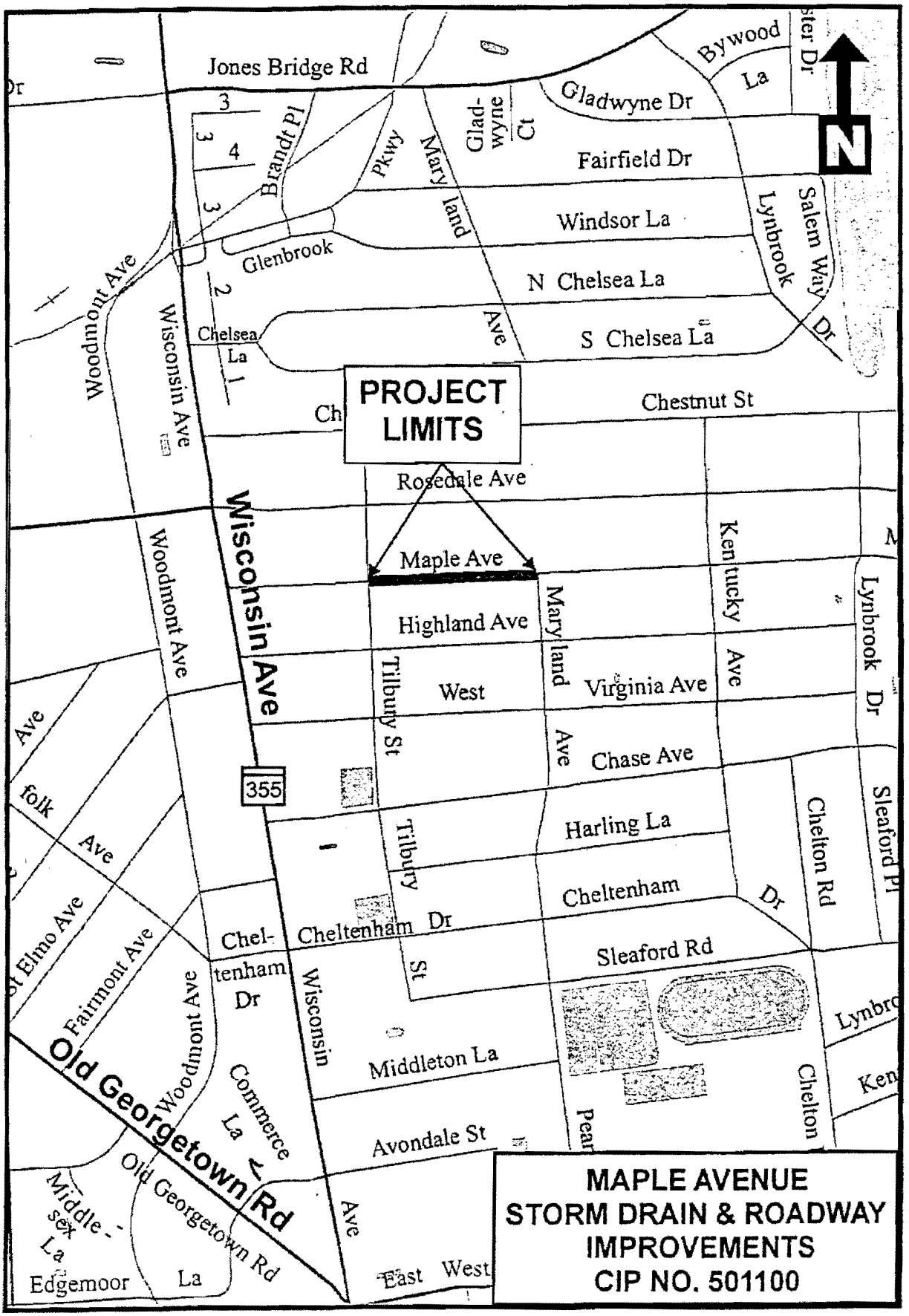
Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

COORDINATION

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

MAP

See Map on Next Page


Jones Bridge Rd
Bywood La
Gladwyne Dr
Fairfield Dr
Windsor La
N Chelsea La
S Chelsea La
Glenbrook
Brandt Pl
Pkwy
Maryland
Glad-wyne Ct
Lynbrook Dr
Salem Way
Woodmont Ave
Wisconsin Ave
Chelsea La
Ave
PROJECT LIMITS
Chestnut St
Rosedale Ave
Maple Ave
Highland Ave
West
Virginia Ave
Chase Ave
Harling La
Cheltenham Dr
Sleaford Rd
Middleton La
Avondale St
Tilbury St
Kentucky Ave
Lynbrook Dr
Chelton Rd
Sleaford Pl
355
Old Georgetown Rd
Fairmont Ave
Commerce La
Edgemoor La
East West
N
MAPLE AVENUE
STORM DRAIN & ROADWAY
IMPROVEMENTS
CIP NO. 501100

Outfall Repairs -- No. 509948

Category	**Conservation of Natural Resources**	Date Last Modified	**January 08, 2012**
Subcategory	**Storm Drains**	Required Adequate Public Facility	**No**
Administering Agency	**Transportation**	Relocation Impact	**None.**
Planning Area	**Countywide**	Status	**On-going**

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	2,657	933	248	1,476	234	234	234	234	270	270	0
Land	10	10	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	4,466	3,122	192	1,152	192	192	192	192	192	192	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	**7,133**	**4,065**	**440**	**2,628**	**426**	**426**	**426**	**426**	**462**	**462**	*

FUNDING SCHEDULE ($000)

G.O. Bonds	7,133	4,065	440	2,628	426	426	426	426	462	462	0
Total	**7,133**	**4,065**	**440**	**2,628**	**426**	**426**	**426**	**426**	**462**	**462**	**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 FY17-18 and overhead costs 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 FY10-11: 4500 Tourney Road, Sweetbirch Drive, 7329 Oskaloosa Drive, 10605 Willobrook Drive, 103 Bluff Terrace, Pinehurst at Beech, 6207 Cromwell Drive, Woodman Avenue, Bucknell Drive, Boiling Brook Parkway, Davis Mill Road, 126 Central Avenue, 611 Lamberton Drive, 1012 Parrs Ridge Drive, 11513 Evelake Court, 4305 Harvard Street, 13717 Mills Avenue, 1517 Menlee Drive, 7200 Mill Run Drive, River Hill Road, McCeney at Harper, Hoyle at Burnt Mills, Helmsdale Road, and 9512 Columbia Boulevard.

Scheduled for repairs (FY12 - beyond): Prathertown Road, Circle Drive at Spring Drive, Emory Grove Road.

OTHER DISCLOSURES

- A pedestrian impact analysis has been completed for this project.
- * Expenditures will continue indefinitely.

APPROPRIATION AND EXPENDITURE DATA

Date First Appropriation	FY99	($000)
First Cost Estimate Current Scope	FY13	7,133
Last FY's Cost Estimate		6,209

Appropriation Request	FY13	426
Appropriation Request Est.	FY14	426
Supplemental Appropriation Request		0
Transfer		0

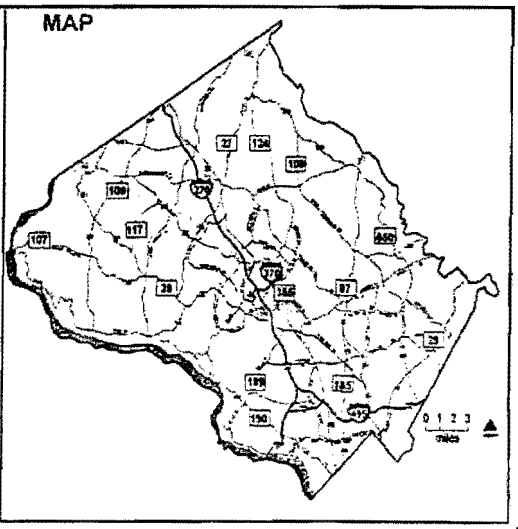
Cumulative Appropriation	4,505
Expenditures / Encumbrances	4,076
Unencumbered Balance	429

Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

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

MAP



Storm Drain General -- No. 500320

Category	Conservation of Natural Resources	Date Last Modified	January 08, 2012
Subcategory	Storm Drains	Required Adequate Public Facility	No
Administering Agency	Transportation	Relocation Impact	None.
Planning Area	Countywide	Status	On-going

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	3,421	1,213	0	2,208	350	350	350	350	404	404	0
Land	62	62	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	9,383	6,622	61	2,700	450	450	450	450	450	450	0
Other	1	1	0	0	0	0	0	0	0	0	0
Total	**12,867**	**7,898**	**61**	**4,908**	**800**	**800**	**800**	**800**	**854**	**854**	*

FUNDING SCHEDULE ($000)

G.O. Bonds	12,477	7,514	55	4,908	800	800	800	800	854	854	0
Intergovernmental	228	222	6	0	0	0	0	0	0	0	0
State Aid	162	162	0	0	0	0	0	0	0	0	0
Total	**12,867**	**7,898**	**61**	**4,908**	**800**	**800**	**800**	**800**	**854**	**854**	**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 FY17-18 and overhead costs to this on-going level of effort project.

OTHER

For 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 FY 10 and 11: Muncaster Road, Midvale Road, Lupine Court, MacArthur Boulevard channel, Lockdale Road, Kingtree Street, Montgomery Avenue, Pomander Lane, Menlee Drive, Norton Road, Stillwater at Flanders, Laverock Court, Wehawken Road and Waukesha Road, Lone Oak Drive, Quincy and Oxford, Lawson Place, Aberdeen Road, Wildcat Road at Watkins, Democracy Boulevard east of Falls Road, Woodside Parkway, Burnt Mills Hills, Mississippi Avenue, Walhonding Road at MacArthur Boulevard, Sunset Drive, Manchester at Bradford, Valley Brook Drive, Brookmoor Drive at Williamsburg Road, Fireside Drive, Renwood Lane, Hermitage Avenue, and Zion Road.

Potential future projects: Meadowood Drive, Chicago Avenue.

OTHER DISCLOSURES

- A pedestrian impact analysis will be performed during design or is in progress.
- 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.
- * Expenditures will continue indefinitely.

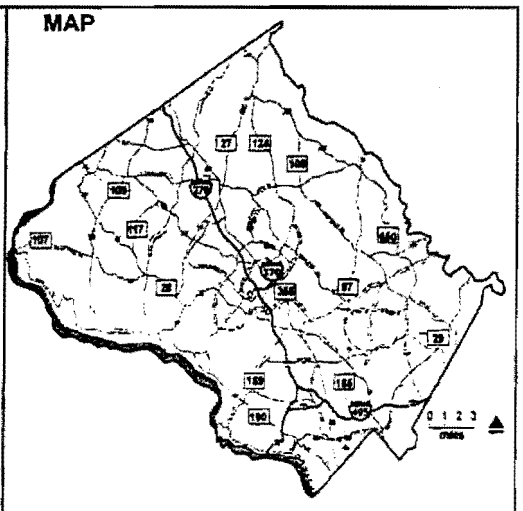
APPROPRIATION AND EXPENDITURE DATA

Date First Appropriation	FY03	($000)
First Cost Estimate Current Scope	FY13	12,867
Last FY's Cost Estimate		11,159
Appropriation Request	FY13	1,600
Appropriation Request Est.	FY14	0
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		7,959
Expenditures / Encumbrances		7,901
Unencumbered Balance		58
Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

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

MAP



Recommended

Town of Chevy Chase Storm Drain Improvements -- No. 500808

Category	Conservation of Natural Resources	Date Last Modified	January 08, 2012
Subcategory	Storm Drains	Required Adequate Public Facility	No
Administering Agency	Transportation	Relocation Impact	None.
Planning Area	Bethesda-Chevy Chase	Status	Final Design Stage

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	1,059	949	23	87	87	0	0	0	0	0	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	2,203	1,517	1	685	685	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	**3,262**	**2,466**	**24**	**772**	**772**	**0**	**0**	**0**	**0**	**0**	**0**

FUNDING SCHEDULE ($000)

G.O. Bonds	3,262	2,466	24	772	772	0	0	0	0	0	0
Total	**3,262**	**2,466**	**24**	**772**	**772**	**0**	**0**	**0**	**0**	**0**	**0**

DESCRIPTION

This project provides for the evaluation of the drainage conditions within the Town of Chevy Chase and construction in the four most critical sectors. The Town is divided into fourteen drainage areas (sectors). Design for four sectors was completed in the Facility Planning: Storm Drain project. Ten sectors will be evaluated in two additional phases and if the existing facilities are found to be inadequate, design will be developed for the necessary drainage improvements. Phase 2 will implement the needed drainage improvements in the northwest part of the town. Phase 3 will address the remaining areas along the east side of the town.

ESTIMATED SCHEDULE

Design for phase 2 is complete. Construction for phase 2 is expected to commence by the summer of 2010 and take approximately 12 months to complete. Design and construction of phase 3 will be completed in FY13.

COST CHANGE

Increase due to the addition of overhead costs.

JUSTIFICATION

Private properties and portions of the roadways within the Town of Chevy Chase are inundated during every rainfall event. This project was initiated at the request of the Town of Chevy Chase to address these severe drainage deficiencies.

Construction for the four sectors in FY08 included improvements along East Avenue, Oakridge Avenue, Maple Avenue, Thornapple Street, Stanford Street, Chatham Road, Meadow Lane, Blackthorn Street, Woodbine Street, Leland Street, and Aspen Street. These improvements were completed in Phase I; Evaluation of the drainage conditions in the remainder of the town was completed in FY09. Design was developed for the remaining needed drainage improvements in the town; design and construction of Phase II was completed in FY11 and included Willow Lane, 46th Street, 44th Street, and Leland Street. Construction funding for Phase III of the project to address the remaining sectors in the east side of the town is included in the current budget submission.

OTHER DISCLOSURES

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

APPROPRIATION AND EXPENDITURE DATA

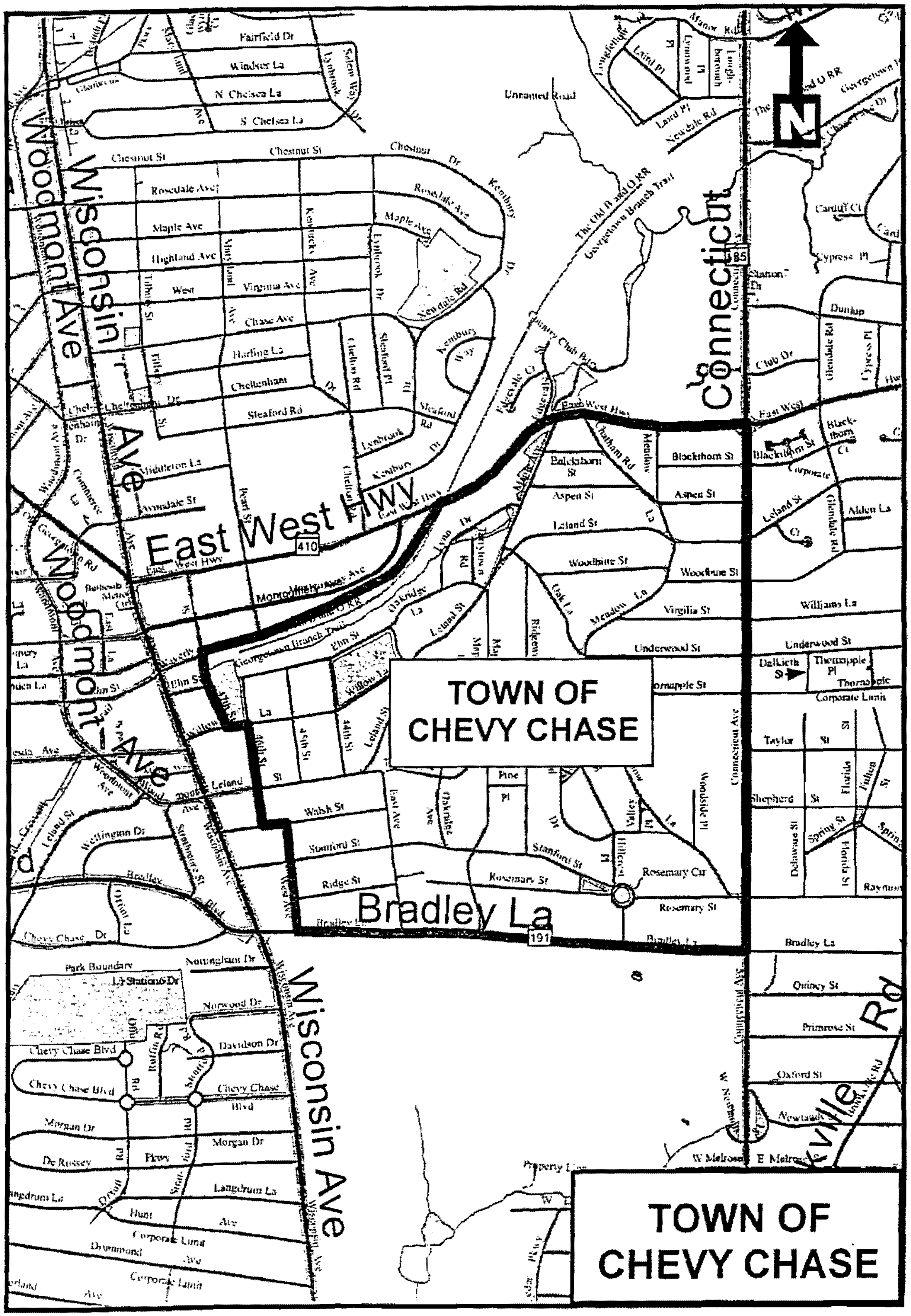
Date First Appropriation	FY08	($000)
First Cost Estimate Current Scope	FY13	3,262
Last FY's Cost Estimate		3,250
Appropriation Request	FY13	772
Appropriation Request Est.	FY14	0
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		2,490
Expenditures / Encumbrances		2,467
Unencumbered Balance		23
Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

COORDINATION

Facility Planning: Storm Drains
Town of Chevy Chase
Department of Permitting Services
Washington Suburban Sanitary Commission
Washington Gas
Utility Companies

MAP

See Map on Next Page


N
TOWN OF
CHEVY CHASE
Wisconsin Ave
Woodmont Ave
East West Hwy
410
Connecticut
185
Bradley La
191
Fairfield Dr
Windsor La
N Chelsea La
S Chelsea La
Chestnut St
Rosedale Ave
Maple Ave
Highland Ave
Virginia Ave
Chase Ave
Harling La
Cheltenham
Sleaford Rd
Montgomery Ave
Elm St
Leland St
Walsh St
Stanford St
Ridge St
Rosemary St
Rosemary Cir
Blackthorn St
Aspen St
Woodbine St
Virgilia St
Underwood St
Williams La
Alden La
Dunlop
Taylor
Shepherd
Quincy St
Primrose St
Oxford St
Nottingham Dr
Norwood Dr
Davidson Dr
Chevy Chase Blvd
Morgan Dr
Langdrum La
Hunt
Drummond
Corporate Limit
Wellington Dr
Bradley Blvd
Chevy Chase Dr
Georgetown Branch Trail
TOWN OF
CHEVY CHASE

18

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

Conservation of Natural Resources

Project		Total	Thru FY11	Rem. FY12	6 Year Total	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6-yrs.	Approp.
Ag Land Preservation													
788911	Ag Land Pres Easements	23,578	1,617	14,977	6,984	1,020	1,061	1,120	1,199	1,257	1,327	0	639
Sub-Category Total		**23,578**	**1,617**	**14,977**	**6,984**	**1,020**	**1,061**	**1,120**	**1,199**	**1,257**	**1,327**	**0**	**639**
Storm Drains													
*500108	Battery Park Storm Drain	19	11	8	0	0	0	0	0	0	0	0	0
*500510	Connecticut Ave./Primrose Street Storm Drain	1,266	1,234	32	0	0	0	0	0	0	0	0	0
508180	Facility Planning: Storm Drains	5,784	3,858	346	1,580	250	250	250	250	290	290	0	250
*509637	Glen Echo Storm Drain	630	630	0	0	0	0	0	0	0	0	0	0
*501108	Henderson Avenue Storm Drain & Roadway Improvement	2,270	410	1,860	0	0	0	0	0	0	0	0	0
501100	Maple Avenue Storm Drain & Roadway Improvements	1,620	61	219	1,340	795	545	0	0	0	0	0	0
509948	Outfall Repairs	7,133	4,065	440	2,628	426	426	426	426	462	462	0	426
*500509	Sonoma / Ayrlawn Storm Drain Improvements	3,401	2,955	446	0	0	0	0	0	0	0	0	0
500320	Storm Drain General	12,867	7,898	61	4,908	800	800	800	800	854	854	0	1,600
500808	Town of Chevy Chase Storm Drain Improvements	3,262	2,466	24	772	772	0	0	0	0	0	0	772
Sub-Category Total		**38,252**	**23,588**	**3,436**	**11,228**	**3,043**	**2,021**	**1,476**	**1,476**	**1,606**	**1,606**	**0**	**3,048**
Stormwater Management													
809319	Facility Planning: SM	15,312	6,730	1,832	6,750	1,150	1,150	1,150	1,100	1,100	1,100	0	1,150
807359	Misc Stream Valley Improvements	21,123	792	4,461	15,870	3,070	3,070	3,070	2,220	2,220	2,220	0	2,570
800700	SM Facility Major Structural Repair	20,450	2,537	3,113	14,800	2,350	2,450	2,500	2,500	2,500	2,500	0	1,350
800900	SM Retrofit - Government Facilities	26,982	1,405	8,152	17,425	2,125	2,900	3,100	3,100	3,100	3,100	0	1,125
801300	SM Retrofit - Roads	64,425	0	0	64,425	8,515	9,910	11,500	11,500	11,500	11,500	0	6,515
801301	SM Retrofit - Schools	20,100	0	0	20,100	1,270	1,010	3,270	4,850	4,850	4,850	0	1,270
808726	SM Retrofit: Countywide	162,060	2,157	5,893	154,010	16,210	24,200	25,100	24,500	29,500	34,500	0	11,710
809342	Watershed Restoration - Interagency	6,038	3,425	993	1,620	310	310	310	230	230	230	0	310
Sub-Category Total		**336,490**	**17,046**	**24,444**	**295,000**	**35,000**	**45,000**	**50,000**	**50,000**	**55,000**	**60,000**	**0**	**26,000**
Category Total		**398,320**	**42,251**	**42,857**	**313,212**	**39,063**	**48,082**	**52,596**	**52,675**	**57,863**	**62,933**	**0**	**29,687**

33-1

** Pending Close Out or Close Out*

Funding Summary by Category, Sub-Category and Revenue Source ($000s)

Conservation of Natural Resources

Funding Source	Total	Thru FY11	Rem. FY12	6 Year Total	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Ag Land Preservation											
Agricultural Transfer Tax	8,442	1,203	4,539	2,700	388	407	427	457	489	532	0
Contributions	252	0	51	201	51	30	30	30	30	30	0
Federal Aid	522	0	522	0	0	0	0	0	0	0	0
G.O. Bonds	2,000	0	2,000	0	0	0	0	0	0	0	0
Investment Income	5,102	414	605	4,083	581	624	663	712	738	765	0
M-NCPPC Contributions	5,000	0	5,000	0	0	0	0	0	0	0	0
State Aid	2,260	0	2,260	0	0	0	0	0	0	0	0
Sub-Category Total	**23,578**	**1,617**	**14,977**	**6,984**	**1,020**	**1,061**	**1,120**	**1,199**	**1,257**	**1,327**	**0**
Storm Drains											
Current Revenue: General	5,683	3,757	346	1,580	250	250	250	250	290	290	0
G.O. Bonds	31,562	19,095	2,929	9,538	2,793	1,661	1,226	1,226	1,316	1,316	0
Intergovernmental	729	458	161	110	0	110	0	0	0	0	0
State Aid	278	278	0	0	0	0	0	0	0	0	0
Water Quality Protection Charge	0	0	0	0	0	0	0	0	0	0	0
Sub-Category Total	**38,252**	**23,588**	**3,436**	**11,228**	**3,043**	**2,021**	**1,476**	**1,476**	**1,606**	**1,606**	**0**
Stormwater Management											
Current Revenue: General	5,000	5,000	0	0	0	0	0	0	0	0	0
Fed Stimulus (State Allocation)	263	263	0	0	0	0	0	0	0	0	0
Federal Aid	299	0	299	0	0	0	0	0	0	0	0
G.O. Bonds	815	815	0	0	0	0	0	0	0	0	0
State Aid	66,337	2,034	4,303	60,000	10,000	10,000	10,000	10,000	10,000	10,000	0
Stormwater Management Waiver Fees	4,406	3,665	741	0	0	0	0	0	0	0	0
Water Quality Protection Bonds	245,099	223	16,626	228,250	23,850	33,850	38,850	38,900	43,900	48,900	0
Water Quality Protection Charge	14,271	5,046	2,475	6,750	1,150	1,150	1,150	1,100	1,100	1,100	0
Sub-Category Total	**336,490**	**17,046**	**24,444**	**295,000**	**35,000**	**45,000**	**50,000**	**50,000**	**55,000**	**60,000**	**0**
Category Total	**398,320**	**42,251**	**42,857**	**313,212**	**39,063**	**48,082**	**52,596**	**52,675**	**57,863**	**62,933**	**0**

Wapakoneta Road Improvements -- No. 501101

Category	**Transportation**	Date Last Modified	**January 07, 2012**
Subcategory	**Roads**	Required Adequate Public Facility	**No**
Administering Agency	**Transportation**	Relocation Impact	**None.**
Planning Area	**Bethesda-Chevy Chase**	Status	**Preliminary Design Stage**

EXPENDITURE SCHEDULE ($000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	417	0	0	417	255	35	127	0	0	0	0
Land	328	0	0	328	0	328	0	0	0	0	0
Site Improvements and Utilities	10	0	0	10	0	0	10	0	0	0	0
Construction	808	0	0	808	0	0	808	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	**1,563**	**0**	**0**	**1,563**	**255**	**363**	**945**	**0**	**0**	**0**	**0**

FUNDING SCHEDULE ($000)

G.O. Bonds	1,533	0	0	1,533	255	363	915	0	0	0	0
Intergovernmental	30	0	0	30	0	0	30	0	0	0	0
Total	**1,563**	**0**	**0**	**1,563**	**255**	**363**	**945**	**0**	**0**	**0**	**0**

OPERATING BUDGET IMPACT ($000)

Maintenance				3	0	0	0	1	1	1
Net Impact				**3**	**0**	**0**	**0**	**1**	**1**	**1**

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 will start in the Summer of 2012 and conclude in the Fall of 2013. Property acquisition will start in the Spring of 2013 and conclude by Spring 2014. Construction is expected to start by the Winter of 2014 and be completed by Summer of 2015.

COST CHANGE

Cost increase due to inflation and overhead charges.

JUSTIFICATION

A number of the properties experience severe flooding of their dwellings during rain storms; 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 22 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

Intergovernmental represents WSSC's share of utility relocation costs.

OTHER DISCLOSURES

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

APPROPRIATION AND EXPENDITURE DATA

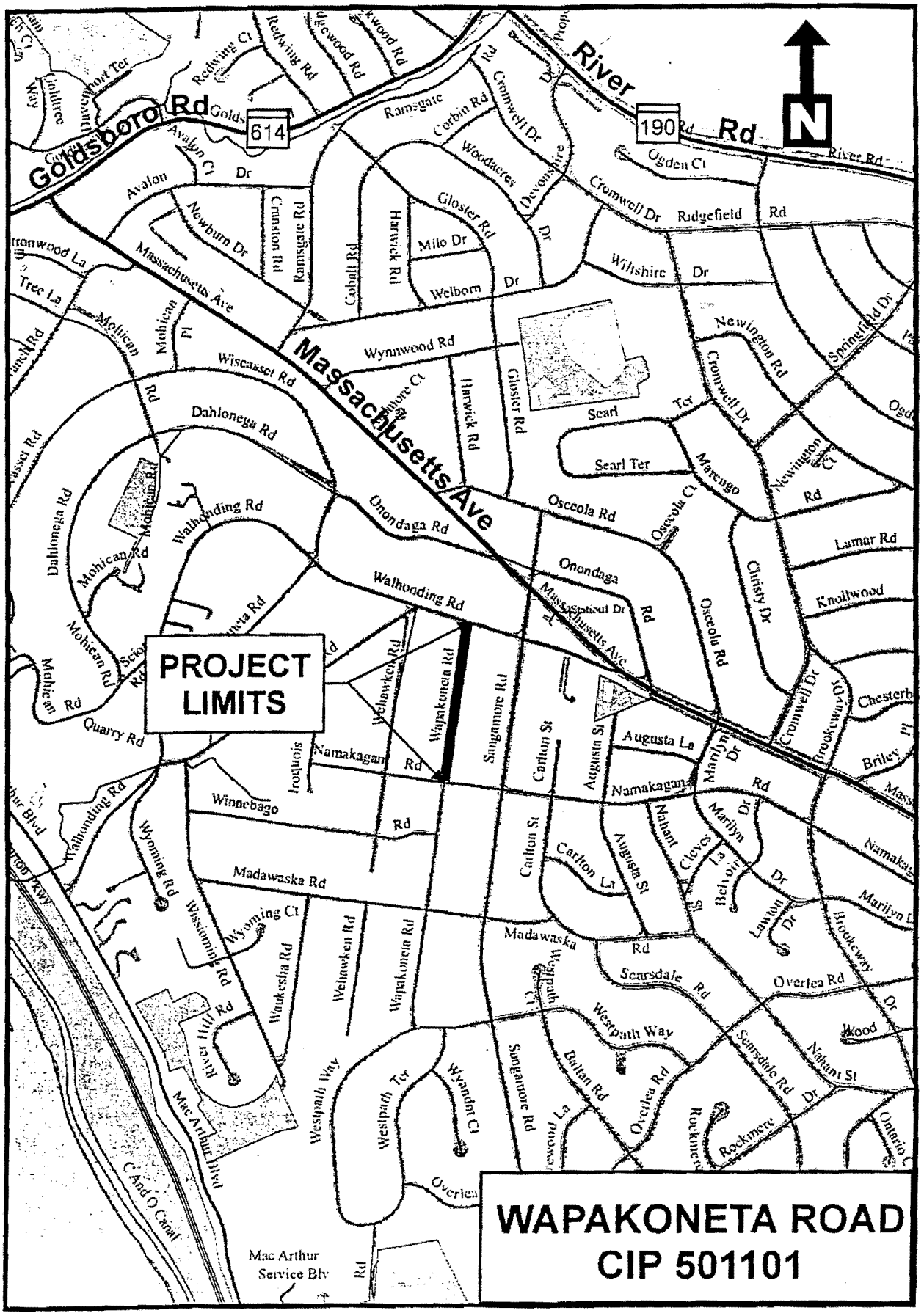
Date First Appropriation	FY13	($000)
First Cost Estimate Current Scope	FY11	1,425
Last FY's Cost Estimate		0
Appropriation Request	FY13	255
Appropriation Request Est.	FY14	1,308
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		0
Expenditures / Encumbrances		0
Unencumbered Balance		0
Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

COORDINATION

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

MAP

See Map on Next Page


PROJECT LIMITS
WAPAKONETA ROAD
CIP 501101
Massachusetts Ave
Goldsboro Rd
River Rd
614
190
N
Dahlonega Rd
Onondaga Rd
Walhonding Rd
Osceola Rd
Wiscasset Rd
Wynnwood Rd
Namakagan Rd
Madawaska Rd
Winnebago Rd
Quarry Rd
Wyoming Rd
Wapakoneta Rd
Carlton St
Augusta La
Scearsdale Rd
Overlea Rd
Westpath Way
Mac Arthur Service Blv
C And O Canal

FY2015 Permit Cycle

Watershed	Strategies	Total Potential Cost	Total Restoration Potential (acres)	% Implementation in Permit Cycle	Impervious Treated (acres)	ESD (% Impervious)	Cost (Million $)	ESD (% Cost)	Nitrogen	Phosphorus	Sediment	Bacteria	Trash
Anacostia	Completed and High Priority Projects	$15.8	315	100.0%	315	9%	$16	30%	5.8%	5.9%	1.9%	6.2%	5.5%
	Low Priority Projects	$5.1	194	100.0%	194	8%	$5	61%	2.0%	2.1%	0.7%	2.2%	2.7%
	Other Potential Projects	$249.2	2,217	33.0%	732	20%	$82	24%	7.7%	8.0%	2.6%	8.4%	10.0%
	Public ESD Retrofits	$237.8	956	10.0%	96	100%	$24	100%	1.1%	1.1%	0.4%	1.2%	1.4%
	Private ESD Retrofits	$213.0	857	10.0%	86	100%	$21	100%	1.0%	1.0%	0.3%	1.0%	1.3%
	Riparian Reforestation	$1.4	6	0.0%	-	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Stream Restoration	$93.7	-	11.7%	-	0%	$11	0%	5.0%	6.6%	38.1%	0.0%	0.0%
	Programmatic Practices	$3.6	-	25.0%	-	0%	$0.9	0%	2.2%	2.1%	2.6%	2.0%	20.4%
	Subtotal	**$819.6**	**4,544**	**31.3%**	**1,421**	**26.3%**	**$160**	**45.4%**	**24.8%**	**26.8%**	**46.6%**	**21.0%**	**41.3%**
Rock Creek	Completed and High Priority Projects	$13.3	585	100.0%	585	1%	$13	13%	4.0%	5.0%	6.0%	5.5%	6.0%
	Low Priority Projects	$8.8	665	100.0%	665	1%	$9	7%	3.9%	3.9%	6.2%	4.9%	7.0%
	Other Potential Projects	$2.0	193	25.0%	48	0%	$1	0%	0.3%	0.3%	0.4%	0.4%	0.5%
	Public ESD Retrofits	$247.1	1,020	10.0%	102	100%	$25	100%	1.3%	1.3%	1.4%	1.3%	1.5%
	Private ESD Retrofits	$341.2	1,407	10.0%	141	100%	$34	100%	1.7%	1.7%	1.9%	1.8%	2.0%
	Riparian Reforestation	$23.8	119	0.0%	-	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Stream Restoration	$20.1	-	21.8%	-	0%	$4	0%	2.0%	1.5%	21.9%	0.0%	0.0%
	Programmatic Practices	$1.2	-	100.0%	-	0%	$1	0%	11.0%	11.0%	0.0%	7.5%	0.0%
	Subtotal	**$657.6**	**3,989**	**38.6%**	**1,541**	**16.5%**	**$87**	**70.4%**	**24.1%**	**24.7%**	**37.8%**	**21.4%**	**17.0%**
Cabin John	Completed and High Priority Projects	$1.6	88	100.0%	88	2%	$2	19%	2.9%	3.0%	3.3%	3.2%	2.5%
	Low Priority Projects	$1.6	10	100.0%	10	78%	$2	98%	0.2%	0.2%	0.2%	0.2%	0.3%
	Other Potential Projects	$0.1	5	25.0%	1	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Public ESD Retrofits	$87.8	403	10.0%	40	100%	$9	100%	1.0%	1.0%	1.1%	1.1%	1.3%
	Private ESD Retrofits	$103.1	473	10.0%	47	100%	$10	100%	1.2%	1.2%	1.3%	1.3%	1.5%
	Riparian Reforestation	$7.8	39	0.0%	-	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Stream Restoration	$16.2	-	0.0%	-	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Programmatic Practices	$0.5	-	100.0%	-	0%	$0	0%	15.3%	14.4%	0.0%	9.9%	0.0%
	Subtotal	**$218.7**	**1,018**	**18.4%**	**187**	**52.0%**	**$23**	**92.0%**	**20.7%**	**19.9%**	**6.0%**	**15.7%**	**5.6%**
Muddy Watts	Completed and High Priority Projects	$4.4	211	100.0%	211	1%	$4	8%	6.0%	6.0%	6.0%	0.0%	6.0%
	Low Priority Projects	$2.0	26	100.0%	26	33%	$2	84%	0.2%	0.3%	1.2%	0.0%	0.2%
	Other Potential Projects	$0.0	-	0.0%	-	0%	$0	0	0.0%	0.0%	0.0%	0.0%	0.0%
	Public ESD Retrofits	$0.0	-	0.0%	-	100%	$0	100%	-	-	-	-	-
	Private ESD Retrofits	$0.0	-	0.0%	-	100%	$0	100%	-	-	-	-	-
	Riparian Reforestation	$0.0	-	0.0%	-	0%	$0	0%	-	-	-	-	-
	Stream Restoration	$24.2	-	0.0%	-	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Programmatic Practices	$0.0	-	100.0%	-	0%	$0	0%	-	-	-	-	-
	Subtotal	**$30.6**	**237**	**100.0%**	**237**	**4.3%**	**$6**	**31.6%**	**6.2%**	**6.3%**	**7.2%**	**0.0%**	**6.2%**
Great Seneca (inclusive of Clopper Lake)	Completed and High Priority Projects	$18.9	800	100.0%	800	1%	$19	6%	20.0%	20.0%	21.0%	0.0%	26.0%
	Low Priority Projects	$6.6	87	100.0%	87	15%	$7	41%	3.7%	3.7%	4.3%	0.0%	4.3%
	Other Potential Projects	$0.2	53	25.0%	13	0%	$0	0%	0.6%	0.6%	0.7%	0.0%	0.7%
	Public ESD Retrofits	$0.0	-	0.0%	-	100%	$0	100%	-	-	-	-	-
	Private ESD Retrofits	$0.0	-	0.0%	-	100%	$0	100%	-	-	-	-	-
	Riparian Reforestation	$0.0	-	0.0%	-	0%	$0	0%	-	-	-	-	-
	Stream Restoration	$25.9	-	0.0%	-	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Programmatic Practices	$0.0	-	100.0%	-	0%	$0	0%	-	-	-	-	-
	Subtotal	**$51.6**	**941**	**95.8%**	**901**	**2.2%**	**$26**	**15.2%**	**24.3%**	**24.3%**	**26.0%**	**0.0%**	**31.0%**
Clopper Lake (subshed of Great Seneca)	Completed and High Priority Projects	$0.0	-	100.0%	-	0%	$0	0%	-	-	-	-	-
	Low Priority Projects	$0.0	-	100.0%	-	0%	$0	0%	-	-	-	-	-
	Other Potential Projects	$0.0	-	0.0%	-	0%	$0	0%	-	-	-	-	-
	Public ESD Retrofits	$0.8	12	0.0%	-	100%	$0	100%	0.0%	0.0%	0.0%	0.0%	0.0%
	Private ESD Retrofits	$0.5	8	0.0%	-	100%	$0	100%	0.0%	0.0%	0.0%	0.0%	0.0%
	Riparian Reforestation	$0.2	2	0.0%	-	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Stream Restoration	$0.0	-	0.0%	-	0%	$0	0%	-	-	-	-	-
	Programmatic Practices	$0.01	-	100.0%	-	0%	$0.01	0%	61.0%	30.0%	0.0%	0.0%	0.0%
	Subtotal	**$1.5**	**22**	**0.0%**	**-**	**0.0%**	**$0.0**	**0.0%**	**61.0%**	**30.0%**	**0.0%**	**0.0%**	**0.0%**

Excerpt CCIS January 2012

FY2015 Permit Cycle

Watershed	Strategies	Total Potential Cost	Total Restoration Potential (acres)	% Implementation in Permit Cycle	Impervious Treated (acres)	ESD (% Impervious)	Cost (Million $)	ESD (% Cost)	Nitrogen	Phosphorus	Sediment	Bacteria	Trash
Lower Monocacy	Completed and High Priority Projects	$0.0	-	0.0%	-	0%	$0	0%	-	-	-	-	-
	Low Priority Projects	$0.0	-	0.0%	-	0%	$0	0%	-	-	-	-	-
	Other Potential Projects	$0.0	-	0.0%	-	0%	$0	0%	-	-	-	-	-
	Public ESD Retrofits	$8.6	40	0.0%	-	100%	$0	100%	0.0%	0.0%	0.0%	0.0%	0.0%
	Private ESD Retrofits	$2.9	13	10.0%	1	100%	$0	100%	0.4%	0.4%	0.4%	0.4%	0.0%
	Riparian Reforestation	$1.1	5	0.0%	-	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Stream Restoration	$7.3	-	0.0%	-	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Programmatic Practices	$0.1	-	0.0%	-	0%	$0.0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Subtotal	**$20.0**	**58**	**2.3%**	**1**	**100.0%**	**$0.29**	**100.0%**	**0.4%**	**0.4%**	**0.4%**	**0.4%**	**0.0%**
Patuxent (Rocky Gorge)	Completed and High Priority Projects	$0.4	5	100.0%	5	27%	$0	77%	0.7%	0.7%	0.8%	0.8%	1.0%
	Low Priority Projects	$0.9	5	100.0%	5	100%	$1	100%	8.4%	8.2%	8.3%	8.2%	11.6%
	Other Potential Projects	$2.0	-	25.0%	-	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Public ESD Retrofits	$31.2	179	0.0%	-	100%	$0	100%	0.0%	0.0%	0.0%	0.0%	0.0%
	Private ESD Retrofits	$18.6	106	1.0%	1	100%	$0	100%	0.1%	0.1%	0.1%	0.1%	0.2%
	Riparian Reforestation	$2.5	12	0.0%	-	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Stream Restoration	$19.1	-	2.5%	-	0%	$0	0%	0.3%	0.2%	0.9%	0.0%	0.0%
	Programmatic Practices	$0.1	-	100.0%	-	0%	$0	0%	38.0%	8.2%	0.3%	4.7%	2.0%
	Subtotal	**$74.7**	**307**	**3.6%**	**11**	**64.5%**	**$3**	**54.5%**	**47.5%**	**17.4%**	**10.4%**	**13.8%**	**14.8%**
Patuxent (Triadelphia)	Completed and High Priority Projects	$0.0	-	100.0%	-	0%	$0	0%	-	-	-	-	-
	Low Priority Projects	$0.4	2	100.0%	2	100%	$0	100%	0.5%	0.5%	0.6%	0.5%	1.0%
	Other Potential Projects	$0.0	-	0.0%	-	0%	$0	0%	-	-	-	-	-
	Public ESD Retrofits	$4.1	17	0.0%	-	100%	$0	100%	0.0%	0.0%	0.0%	0.0%	0.0%
	Private ESD Retrofits	$4.7	19	5.0%	1	100%	$0	100%	0.3%	0.3%	0.3%	0.3%	0.5%
	Riparian Reforestation	$0.1	1	0.0%	-	0%	$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Stream Restoration	$0.0	-	0.0%	-	0%	$0	0%	-	-	-	-	-
	Programmatic Practices	$0.01	-	100.0%	-	0%	$0	0%	23.4%	3.5%	0.0%	0.0%	0.0%
	Subtotal	**$9.3**	**38**	**7.6%**	**3**	**100.0%**	**$0.6**	**99.1%**	**24.2%**	**4.3%**	**0.9%**	**0.8%**	**1.6%**
Countywide Totals		**$1,884**	**11,154**	**38.6%**	**4,302**	**17.9%**	**$305**	**53.4%**	**17.8%**	**17.1%**	**22.7%**	**10.5%**	**18.0%**

High and Low Priority: 2,993
20% Targeted Impervious: 4,292

Chesapeake Bay TMDL, Urban MS4 Reductions (2017):	9%	12%	20%
Chesapeake Bay TMDL, Urban MS4 Reductions (2020):	20%	34%	37%

Assumptions:
1. 100% Completed and High Priority Projects
2. 25-33% Other potential projects
3. 100% of Public Outreach Potential for all TMDL watersheds
4. 10% of ESD potential in urban watersheds, ~1 acre ESD goal for rural watersheds
5. No riparian reforestation, Completed stream restoration
6 Used watershed area weighing to calculate countywide total pollutant removals

768.0294602

$1.884B
Total Potential Cost

$305M
Permit Cycle Cost