

Program Description

The Stormwater Management Capital Program includes three capital program areas: Stormwater Infrastructure/ Capacity Improvements, Streams & Water Quality, and Maintenance Capital. These programs address both infrastructure (replacement and rehabilitation to address system condition, capacity, and flood risk reduction); and regulatory requirements (state/federal compliance and environmental quality projects).

The overall goals of the program are:

1. Reduce the potential for stormwater threats to public health, safety, and property,
2. Reduce the impacts of new and existing urban development on Arlington streams, the Potomac River, and Chesapeake Bay,
3. Comply with State and federal water quality mandates,
4. Floodplain management regulations and programs; and
5. Manage risk for near- to long-term community resilience.

Program Summary

Climate change has increased storm intensity patterns and impacts across the nation and over the past several years created repetitive flooding and loss in the Mid-Atlantic region. The County's geological factors and development legacy reaching as far back as the 1940s have exposed Arlington to public, commercial, infrastructure, and operational risk resulting from storms of dramatically increased intensity. At the same time, the County must maintain aged stormwater network and related assets, expand the system's capacity to manage floods, and meet regulatory benchmarks to improve water quality locally and downstream in the Chesapeake Bay. As laid out in the 2014 Stormwater Master Plan and updated in this CIP, the program strives to execute responsive and responsible investments that are balanced between water quality, and capacity improvements, and maintaining assets in a state of good repair (SGR).

In response to these challenges, the County has taken action to address the growing urgency for near-term upgrades and long-term resiliency. By way of example:

- The County pivoted to an over-arching mission to establish Flood Resilient Arlington.
- Established a Stormwater Inter-Departmental Working Group to develop key recommendations for risk and emergency planning, communications, diversifying engineering options and strategies, and developing climate and resiliency criteria and standards.
- Updated the Land Disturbance Activity (LDA) Program.
- Updated stormwater engineering to include distributed detention assets (such as the Cardinal Elementary School Detention Vaults currently under construction), addition of tertiary infrastructure, acquisition of property to provide overland relief, and co-location and multi-purposing of projects (where project design and performance can serve other County master plans, programs, and initiatives).
- In CY 2023, the County will complete a comprehensive stormwater Risk Assessment and Management Plan (RAMP), which will serve as a decision support tool for long-term capital planning.

SUBSTANTIAL INVESTMENTS IN STORMWATER INFRASTRUCTURE

The investment laid out in this CIP reflects the significant effort that will be required to update the County's stormwater infrastructure to manage urgent needs and long-term resilience. The FY 2019 - FY 2028 Adopted CIP planned for a \$33.2 million investment in stormwater over 10 years. The FY 2023 - FY 2032 Adopted CIP includes over \$331 million, a substantial increase driven primarily by watershed scale projects to minimize the risk of flooding. Given the increase in funding required for Stormwater over the next 10 years, the County Board has directed staff to implement a stormwater utility as a more equitable and fair way to recover costs. A stormwater utility is billed based on each parcel's impervious area. It offers an alternative funding mechanism for recovery of the costs related to the County's stormwater program. The County has engaged a consultant, Raftelis, to perform the utility implementation. Current planning anticipates the utility will be in place for FY 2024 (Calendar Year 2023). Information about this project, timeline, and ways to engage can be found here: (Stormwater Utility Project Page).

It is anticipated some of this investment could be offset with future stormwater mitigation and flood prevention grant programs at either the State or Federal level. No specific opportunities have been identified at this time, but staff will continue to pursue this avenue, as it could partially offset utility fee increases necessary to fund this higher level of investment into Arlington's Stormwater infrastructure.

To fund the near-term projected need, the County received approval from voters for a \$50.84 million Bond Referenda in November 2020 which provided the authority to issue bonds to fund Stormwater capital projects in FY 2021 through FY 2023 and funding for key projects that will be constructed over a number of years. Future bond referenda will be necessary to fund the entirety of this ten-year plan. These are substantial, long-term investments in the County's stormwater management system, with multiple generations of taxpayers benefitting so utilizing bonds to spread the costs over the life of the assets is appropriate. Arlington County's historical stormwater rates (an ad valorem tax on the real estate bill) have been among the lowest regionally. Approval of the increased investment level in this Adopted 10-year CIP will require corresponding increases in the Stormwater Utility fee level over the 10-year period.

STORMWATER INFRASTRUCTURE/ CAPACITY IMPROVEMENTS PROGRAM

The Stormwater Infrastructure/ Capacity Improvements program (previously named "Storm Drainage Improvements") funds capital improvements which increase system capacity and minimize the risk of flooding. This component of the CIP was created pursuant to the Stormwater Master Plan (2014) and includes programs and projects that increase system capacity (both pipes and open channels) in order to reduce the risk of residential and commercial flooding. The Stormwater Master Plan (2014) identified initial critical flood risk locations to prioritize system capacity projects.

Many areas of the County's risk-designated watersheds are served by a legacy system that does not meet current storm standards under increased occurrence of high-intensity storm events, sometimes equal to or in excess of the 100-year storm event. This CIP recognizes that no reasonable amount of investment can prevent all flooding during all high intensity rainfall events in all types of topography. To achieve a reasonable balance of risk sharing between public and private interests, County staff is utilizing blended design strategies that considers both the industry standard 10-year storm and the 100-year flood plain. Staff will at a minimum design to the 10-year standard, updated for more intense rainfall events associated with climate change. Ultimately, the goal of these public investments, when combined with private investments, is to reduce flooding so that it does not impact building or home integrity, impede commercial/ business activity, threaten personal safety, damage other infrastructure, or interfere with the safe and timely transportation of people, goods and services. It is important to note that flood mitigation improvements will vary in immediate impact as the phases of the watershed scale projects progress and that full watershed-scale improvements will take place over several years.

MAINTENANCE CAPITAL PROGRAM

The Maintenance Capital program focuses on the re-investment in the County's 400-mile storm drainage network and its tens of thousands of stormwater structures. The Capital Maintenance component addresses projects and programs designed to rehabilitate or replace the existing storm drainage system (e.g., outfall repair/replacement, relining pipes) and mixed infrastructure assets (such as culverts that also provide transportation uses) and to address local drainage issues to resolve complaints. Maintenance of the Four Mile Run Flood Control Project is also part of this program component.

The 2014 Stormwater Master Plan did not undertake a comprehensive asset inventory and assessment and instead defaulted to a baseline approach (not a performance model) that allows for initial repair and replacement of identified failing infrastructure over an introductory period of necessary data gathering.

In order to provide a more conclusive framework for future investment decision-making, DES is undergoing a Risk Assessment and Management Plan (RAMP) which is developing a performance-driven risk management and abatement model informed by a full asset inventory and gaps analysis. This approach will provide a more granular assessment of the system including a comprehensive system assessment (including location, scale, constructed material, sensitivities with adjacent and/or articulated community elements and infrastructure, and age of all stormwater assets. The assessment will serve as a meaningful decision-support tool for the programmatic, operational, and fiscal needs of the system.

STREAMS AND WATER QUALITY PROGRAM

The projects selected and implemented under this Program provide a suite of sustainability benefits, reflecting the goals and objectives of the adopted Stormwater Master Plan, including local water quality improvements throughout the County, pollutant reductions to respond to the County's MS4 Permit requirements and the Chesapeake Bay Total Maximum Daily Load (TMDL) - a regulatory pollution budget for the Bay, and multiple co-benefits including but not limited to public safety, infrastructure protection, and ecological improvements. These projects include investments in multiple forms of "green infrastructure". These include projects that improve the resiliency and environmental performance of streams, ponds, and wetlands, along with "green streets" projects that provide storage and treatment for polluted runoff in public rights-of-way. A growing emphasis of the program is creating resiliency to climate change. Projects are strategically identified to align with infrastructure protection and integrity needs and address related public safety issues resulting from failed slopes, eroded trails, exposed and broken sanitary sewer lines and collapsed outfalls.

The MS4 Permit requires the reduction of three specific pollutants-nitrogen, phosphorus, and sediment-in an accelerated approach over three, five-year permit cycles to respond to the aggressive requirements for the cleanup of the Bay. At this time, Virginia DEQ continues to require that the second (FY 2022 - FY 2026) and third (FY 2027 - FY 2031) permit cycles will achieve a cumulative 40 percent and 100 percent reduction, respectively.

**STORMWATER MANAGEMENT: PROGRAM FUNDING
SUMMARY**

10 YEAR PROGRAMMED CATEGORY SUMMARY (in \$1,000s)

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	10 Year Total
1. SM Maintenance Capital	7,545	7,255	6,730	3,725	3,830	4,545	4,035	4,120	4,220	4,220	50,225
2. Stormwater Infrastructure/ Capacity Improvements	13,935	27,235	21,080	38,890	38,565	20,010	13,935	20,680	19,300	15,355	228,985
3. Streams and Water Quality	7,315	5,260	4,510	5,770	2,460	5,650	3,085	6,085	5,995	5,995	52,125
Total Recommendation	28,795	39,750	32,320	48,385	44,855	30,205	21,055	30,885	29,515	25,570	331,335
*Implementation Adjustment	(5,760)	(7,950)	(6,460)	(9,680)	(8,970)	(6,040)	(4,210)	(6,180)	(5,900)	(5,110)	(66,260)
Adjusted CIP	23,035	31,800	25,860	38,705	35,885	24,165	16,845	24,705	23,615	20,460	265,075

* Reflects a budget adjustment to include risk of project execution to more accurately forecast annual expenditures

PROGRAM FUNDING SOURCES (in \$1,000s)

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	10 Year Total
New Funding											
Federal Funding	0	0	0	0	0	0	0	0	0	0	0
State Funding	0	0	0	0	0	0	0	0	0	0	0
Developer Contributions	0	0	0	0	0	0	0	0	0	0	0
New Bond Issue	0	12,835	28,485	44,550	41,025	25,660	17,020	26,765	25,295	21,350	242,985
PAYG	0	0	0	0	0	0	0	0	0	0	0
Short Term Finance	0	0	0	0	0	0	0	0	0	0	0
Stormwater Utility Fee Revenue	3,835	3,835	3,835	3,835	3,830	4,545	4,035	4,120	4,220	4,220	40,310
Other Funding	0	0	0	0	0	0	0	0	0	0	0
Subtotal New Funding	3,835	16,670	32,320	48,385	44,855	30,205	21,055	30,885	29,515	25,570	283,295
Previously Approved Funding											
Authorized but Unissued Bonds	14,560	23,080	0	0	0	0	0	0	0	0	37,640
Issued but Unspent Bonds	3,190	0	0	0	0	0	0	0	0	0	3,190
Other Previously Approved Funds	7,210	0	0	0	0	0	0	0	0	0	7,210
Subtotal Previously Approved Funding	24,960	23,080	0	0	0	0	0	0	0	0	48,040
Total Funding Sources	28,795	39,750	32,320	48,385	44,855	30,205	21,055	30,885	29,515	25,570	331,335
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