

STORMWATER MANAGEMENT

Note: Projects with a \$0 total funding are active capital projects funded in prior CIP's that do not require additional resources.

	Prior	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2024 - FY 2033
	Appropriations											
Stormwater Management												
Stormwater Management												
Braddock and West Flood Management	198,000	-	-	-	-	-	-	-	-	-	-	-
City Facilities Stormwater Best Management Practices (BMPs)	1,733,000	-	-	-	-	-	-	-	-	-	-	-
Floodproofing Grant Program	1,519,000	789,000	809,000	830,000	851,000	873,000	895,000	918,000	941,000	965,000	900,000	8,771,000
Four Mile Run Channel Maintenance	4,411,881	-	300,000	300,000	-	1,251,300	2,900,000	-	300,000	300,000	300,000	5,651,300
Green Infrastructure	2,465,593	-	1,549,600	-	-	-	-	-	-	-	275,000	1,824,600
Hooffs Run Culvert	-	-	-	1,616,000	-	-	-	-	2,510,000	-	-	4,126,000
Inspection and Cleaning (State of Good Repair) CFMP	6,084,291	500,000	1,578,000	1,695,000	1,835,000	2,006,000	2,220,000	2,496,000	2,862,000	3,304,000	3,766,000	22,262,000
Large Capacity - Commonwealth Ave & E. Glebe/Ashby St & Glebe Rd	34,635,255	12,632,800	-	-	-	-	-	-	-	-	-	12,632,800
Large Capacity - Hooffs Run Culvert Bypass	10,787,000	-	16,176,100	32,352,100	-	-	-	-	-	-	-	48,528,200
Lucky Run Stream Restoration	3,791,651	-	-	-	-	-	-	-	-	-	-	-
MS4-TDML Compliance Water Quality Improvements	6,105,000	800,000	1,800,000	2,050,000	1,750,000	2,000,000	2,575,000	1,500,000	1,000,000	1,750,000	1,000,000	16,225,000
NPDES / MS4 Permit	1,150,000	-	171,700	173,500	175,200	177,000	178,700	180,500	182,200	185,900	185,900	1,610,600
Small-Midsize Stormwater Maintenance Projects	1,081,300	613,900	649,100	685,900	724,400	765,800	809,100	854,200	901,400	922,900	944,900	7,871,600
Spot Project - Hume Avenue Bypass	667,216	-	-	-	-	-	-	-	-	-	-	-
Spot Project - Mt. Vernon Cul-de-sac and Alley	1,232,784	-	-	-	-	-	-	-	-	-	-	-
Storm Sewer Capacity Projects	8,557,218	-	-	15,950,000	15,200,000	13,675,000	6,700,000	6,350,000	4,000,000	7,000,000	5,000,000	73,875,000
Storm Sewer System Spot Improvements	17,148,618	2,353,000	4,122,000	4,228,000	4,337,000	4,540,000	4,606,000	4,688,000	4,812,000	4,937,000	5,060,425	43,683,425
Stormwater BMP Maintenance CFMP	806,000	303,500	1,575,300	1,622,500	317,100	326,600	336,400	346,500	356,900	1,792,200	365,823	7,342,823
Stormwater Utility Implementation	1,673,200	-	-	-	-	-	-	-	-	-	-	-
Strawberry Run Stream Restoration	1,772,728	-	-	-	-	-	-	-	-	-	-	-
Stream & Channel Maintenance	8,310,454	304,000	934,700	962,700	991,600	1,021,400	1,052,000	1,083,600	1,116,100	1,149,600	1,178,340	9,794,040
Taylor Run Stream Restoration	4,685,289	-	-	-	-	-	-	-	-	-	-	-
Grand Total	118,815,478	18,296,200	29,665,500	62,465,700	26,181,300	26,636,100	22,272,200	18,416,800	18,981,600	22,306,600	18,976,388	264,198,388

Significant Project Changes in the Stormwater Management Section

Project funding in the Stormwater Management CIP section, compared to the Approved FY 2023 – FY 2032 CIP funding levels, decreased by \$4.7 million. Note, these comparisons do not include Fiscal Years 2023 or 2033 funding.

The below chart highlights any project funding that increased or decreased by more than 15%, or \$1 million.

CIP Subsection	CIP Doc Title	TOTAL FY 2024 - 2033	Amount	Percentage
			Changed Since FY23 Approved CIP*	Changed Since FY23 Approved CIP
Stormwater Management	Storm Sewer System Spot Improvements	43,683,425	(1,658,000)	-4%
Stormwater Management	MS4-TDML Compliance Water Quality Improvements	16,225,000	(1,300,000)	-8%

*This dollar amount was calculated by comparing FY 2024 – 2032 funding levels of the FY 2023 Approved CIP and this FY 2024 Proposed CIP. Since the FY 2023 Approved CIP did not have FY 2033 funding designations, that fiscal year was removed from these calculations.

BRADDOCK AND WEST FLOOD MANAGEMENT

DOCUMENT SUBSECTION: Stormwater Management

PROJECT LOCATION: Braddock Road and West Street

MANAGING DEPARTMENT: Transportation and Environmental Services

REPORTING AREA: Braddock Road Metro

PROJECT CATEGORY: 1

ESTIMATE USEFUL LIFE: 3 – 5 years

Braddock and West Flood Management													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	198,000	198,000	-	-	-	-	-	-	-	-	-	-	-
Financing Plan													
Stormwater Utility Fund	198,000	198,000	-	-	-	-	-	-	-	-	-	-	-
Financing Plan Total	198,000	198,000	-	-	-	-	-	-	-	-	-	-	-

CHANGES FROM PRIOR YEAR CIP

No changes from prior CIP.

PROJECT DESCRIPTION & JUSTIFICATION

The Braddock Road & West Street intersection and adjacent properties have experienced periodic severe flooding from flash flood rain events. The area is served by storm sewers that drain under the Railroad tracks into the Hooffs Run Culvert (HRC) at E. Linden Street. The City of Alexandria Storm Sewer Capacity Assessment (CASSCA) study identified both conveyance and storage solutions to mitigate severe flooding.

This study will continue to evaluate the specific need, volume and area required for the storage component.

This study will consider the need for a stormwater storage facility and the potential for the availability of property not in the Right-of-Way to locate the storage facility near the Braddock Road & West Street intersection to mitigate flooding.

The project will use professional services to perform a study of existing information, verify findings of previous studies, and recommend appropriate storage volume for the sub-watershed. It will also investigate and contact potential stakeholders for public/private partnerships in the deployment of the recommended stormwater storage volume. Analysis will include feasibility of providing stormwater storage to mitigate flooding during the 10, 25, 50 & 100-year precipitation events. Planning level cost estimates for construction will also be provided as part of the study.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

City of Alexandria Storm Sewer Capacity Analysis (CASSCA); Flood Action Alexandria; Northern Virginia Flood Hazard Mitigation Plan

ADDITIONAL OPERATING IMPACTS

No additional operating impacts by completing this study.

CITY FACILITIES STORMWATER BEST MANAGEMENT PRACTICES (BMPs)

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: 21 - 25 Years

City Facilities Stormwater Best Management Practices (BMPs)													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	1,733,000	1,733,000	-	-	-	-	-	-	-	-	-	-	-
Financing Plan													
Cash Capital	125,000	125,000	-	-	-	-	-	-	-	-	-	-	-
GO Bonds (Stormwater)	1,133,000	1,133,000	-	-	-	-	-	-	-	-	-	-	-
Stormwater Utility Fund	475,000	475,000	-	-	-	-	-	-	-	-	-	-	-
Financing Plan Total	1,733,000	1,733,000	-	-	-	-	-	-	-	-	-	-	-

CHANGES FROM PRIOR YEAR CIP

No changes from prior CIP.

PROJECT DESCRIPTION & JUSTIFICATION

This program targets City-owned facilities and properties for the installation of stormwater quality best management practices (BMPs) to meet the Chesapeake Bay (Bay) Total Maximum Daily Load (TMDL) enforced by the Virginia Department of Environmental Quality (DEQ) through the issuance of the City's Municipal Separate Storm Sewer System (MS4) Permit. The MS4 that mandates City-specific stormwater nutrient and sediment reduction targets to clean up the Chesapeake Bay . enforced through three 5-year MS4 permit cycles. The 2013-2018 MS4 permit required a 5% reduction, while the 2018-2023 required an additional 35% or 40% of the total. The remaining 60% or 100% of the reduction must be met on or before the end of the third 5-year permit cycle (2023-2028) no later than 2028. The City's Chesapeake Bay TMDL Action Plan identifies retrofitting of regional ponds, implementing new regional ponds, BMP retrofits on City properties, retrofits in the Right-of-Way, stream restoration, and other strategies towards meeting mandated pollutant reduction goals, with this project targeting BMPs on City properties to include the Right-of-Way.

Working closely with the General Services; Recreation, Parks and Cultural Activities; and Project Implementation departments, the following locations, among others, have been identified as potential locations for stormwater retrofits that include:

- T&ES/Recreation operations at 2900 Business Center Drive,
- City Fuel Island on Wheeler Avenue,
- ACPS Mount Vernon Elementary School and Recreation Center, and
- City Traffic Control Shop on Colvin Street.

The City has identified at least 16 potential locations in addition to the above list that may treat stormwater from a total of approximately 4-8 acres of impervious surface. These sites have been selected because of the facilities' operational stormwater impacts and their relatively high percentage of impervious acreage.

This project provides for the inspection and maintenance of existing and planned BMP retrofits to ensure proper functioning to continue achieving the City's mandated water quality goals to clean up the Chesapeake Bay.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

City of Alexandria Municipal Separate Storm Sewer System (MS4) General Permit, Program Plan and Year 5 Annual Report; Chesapeake Bay TMDL Action Plan; T&ES Strategic Plan; Eco-City Charter and Action Plan

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

FLOODPROOFING GRANT PROGRAM

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 1
 ESTIMATE USEFUL LIFE: Varies

Floodproofing Grant Program													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	10,290,000	1,519,000	789,000	809,000	830,000	851,000	873,000	895,000	918,000	941,000	965,000	900,000	8,771,000
Financing Plan													
Stormwater Utility Fund	10,290,000	1,519,000	789,000	809,000	830,000	851,000	873,000	895,000	918,000	941,000	965,000	900,000	8,771,000
Financing Plan Total	10,290,000	1,519,000	789,000	809,000	830,000	851,000	873,000	895,000	918,000	941,000	965,000	900,000	8,771,000

CHANGES FROM PRIOR YEAR CIP

Funding added for FY 2033.

PROJECT DESCRIPTION & JUSTIFICATION

The purpose of this project, initiated in FY 2022 under the Flood Action Alexandria program, is to provide grant funding to private property owners to mitigate flooding impacts to their primary residence as a result of recent climate change-induced flash flooding and cloudburst events. This project was recommended by the 2020 Interdepartmental Flooding Management Task Force and was supported in the City’s 2020 legislative package, which was successful in revising the state code to provide clear authority to support localities dealing with the impacts of flooding to implement a jurisdictional-wide grant program to implement floodproofing measures on private property for the health and safety of the community. Further analysis is ongoing with the pilot launching in FY 2022, with consideration in FY 2023 of grant reimbursement ‘proportionality’ for multi-family or multi-use and condominium properties that would reimburse a common use property managed by an association to receive above the single family and single use maximum for eligible practices. Any new changes will go into effect in FY 2024. Staff will continue to employ a continual improvement process by gathering data and information in consideration of any needed future adjustments. The program incentivizes implementation of flood mitigation measures and allows property owners to experience immediate benefits to mitigate flooding issues.

This program is administered like the City’s Backflow Preventer Program, which provides reimbursement to those who have installed backflow preventers to protect against sanitary sewer backups. This program provides reimbursement for floodproofing installed to mitigate flooding issues in the near-term.

The Flooding Mitigation Pilot Program Manual document frames the program and policies, to include processes, funding level, and eligible reimbursable expenses. The grant program includes:

- Reimbursement for 50% of the cost of improvements, not to exceed \$5,000 reimbursed
- Total funding for FY 2024: \$789,000
- Eligible reimbursable practices and expenses include installation of floodproof doors and windows, and other measures to prevent water from entering a structure, with examples included in online materials
- Applications are processed using the City’s APEX permitting system

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

Eco-City Charter; Strategic Plan, MS4 General Permit; Environmental Action Plan (EAP) 2040; City of Alexandria Storm Sewer Capacity Analysis (CASSCA); Flood Action Alexandria;

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

FOUR MILE RUN CHANNEL MAINTENANCE

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Four Mile Run Stream/Channel
 REPORTING AREA: Potomac West

PROJECT CATEGORY: 2
 ESTIMATE USEFUL LIFE: 6 - 10 Years

Four Mile Run Channel Maintenance													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	10,063,181	4,411,881	-	300,000	300,000	-	1,251,300	2,900,000	-	300,000	300,000	300,000	5,651,300
Financing Plan													
Cash Capital	315,281	315,281	-	-	-	-	-	-	-	-	-	-	-
GO Bonds	2,260,000	2,260,000	-	-	-	-	-	-	-	-	-	-	-
GO Bonds (Stormwater)	-	-	-	-	-	-	-	-	-	-	-	-	-
Stormwater Utility Fund	7,487,900	1,836,600	-	300,000	300,000	-	1,251,300	2,900,000	-	300,000	300,000	300,000	5,651,300
Financing Plan Total	10,063,181	4,411,881	-	300,000	300,000	-	1,251,300	2,900,000	-	300,000	300,000	300,000	5,651,300

CHANGES FROM PRIOR YEAR CIP

Funding added for FY 2033.

PROJECT DESCRIPTION & JUSTIFICATION

This project reflects the City's share of the costs to maintain the federally funded stormwater flood control channel and system of flood walls and levees on Four Mile Run to reduce potential riverine flooding. The federal Four Mile Run Flood Control project was constructed by the U.S Army Corps of Engineers (USACE) in the late 1970's, which by mutual agreement requires the City to provide regular upgrades to associated capital infrastructure. The USACE annually inspects Four Mile Run and dictates the extent of the maintenance activities that are to be completed. The City has hired a consultant to perform a detailed inspection of the flood control system and to develop recommendations for corrections. Staff is working with USACE to determine exactly what improvements the City needs to do to bring the rating up to the upgraded post-Hurricane Katrina standards that the USACE now considers acceptable. The City is currently developing revised plans for USACE to review that includes maintenance repairs to the flood walls, embankments, and gabions.

To date, nearly \$4 million in City funding has been applied to the project. Funding is programmed in the near term to address maintenance items with funding in out-years of the CIP to address future capital infrastructure requirements. As Four Mile Run maintenance is a shared responsibility with Arlington County, it is necessary for the County and the City to engage in a joint decision-making process concerning some elements of maintenance activities. Staff collaborated with Arlington County to perform dredging of the channel to remove sediment to maintain the conveyance capacity of the flood control project in FY 2023. A grant application submitted in calendar year 2021 for FEMA's Build Resilient Infrastructure and Communities (BRIC) funding was not successful. The project progressed with City funds covering the agreed cost share of the project.

Additional operations and maintenance concerns that need to be addressed were uncovered during a routine inspection, including the need for maintenance of structures, updates to the operations and maintenance (O&M) manual, design and removal of accumulated sediment, and continued vegetation removal from the levee, as requested by USACE. Routine inspection and maintenance, including design and removal of significant accumulated sediment and routine vegetation maintenance, is necessary to get this flood control channel back into conditions considered acceptable by the federal government. Achieving federal acceptance ensures that the flood control project will perform as predicted, protects our communities – along with Arlington – and properties from flooding, and provides eligibility for federal assistance in repairing any damage to the channels that storms may cause.

To address USACE concerns for annual inspections, the vegetation management will be performed annually along the entire reach between I-395 and Rt-1.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

City of Alexandria Municipal Separate Storm Sewer System (MS4) General Permit, Program Plan and Year 5 Annual Report; Chesapeake Bay TMDL Action Plan; T&ES Strategic Plan; Eco-City Charter and Action Plan; Flood Action Alexandria initiative

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

GREEN INFRASTRUCTURE

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: Varies

Green Infrastructure													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	4,290,193	2,465,593	-	1,549,600	-	-	-	-	-	-	-	275,000	1,824,600
Financing Plan													
GO Bonds (Stormwater)	1,195,000	1,195,000	-	-	-	-	-	-	-	-	-	-	-
Sanitary Sewer Fund	350,000	350,000	-	-	-	-	-	-	-	-	-	-	-
Stormwater Utility Fund	2,745,193	920,593	-	1,549,600	-	-	-	-	-	-	-	275,000	1,824,600
Financing Plan Total	4,290,193	2,465,593	-	1,549,600	-	-	-	-	-	-	-	275,000	1,824,600
Operating Impact	28,000		-	-	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	28,000

CHANGES FROM PRIOR YEAR CIP

Project funding originally planned for FY 2024 has been moved to FY 2025; Funding added for FY 2033.

PROJECT DESCRIPTION & JUSTIFICATION

This project is for the identification, study, design, and construction of green infrastructure projects to address water quality and reduce the risk of flooding. It is consistent with the objective of implementing a citywide approach by installing Green Infrastructure in the combined sewer system (CSS) area and the separate storm sewer area. Completed green infrastructure projects will help address regulatory requirements and help to mitigate flooding in conjunction with the co-benefits provided by the implementation of these practices. An initial identification and prioritization study will be conducted in planning for the next green infrastructure project. Funding for additional projects, if identified, may be supplemented with funding from the MS4 Water Quality Improvements project.

Completion of these projects will provide the following benefits: increase stormwater infiltration; reduce stormwater runoff; provide stormwater treatment (nutrients and sediment); decrease the volume of discharges; and, provide co-benefits, including creating habitat, reducing heat island effect, and enhancing air quality.

Projects are identified through work related to the City’s Chesapeake Bay TMDL Action Plan and the Green Infrastructure Program Policy Study commenced in FY 2019 which laid out a citywide approach to implementation. Further, green infrastructure projects may be implemented as stand-alone water quality projects or in conjunction with flood control projects to mitigate flooding and/or provide water quality benefits and included in the update to the Chesapeake Bay TMDL Action Plan to be completed for the 2023-2028 MS4 Permit. Funding for projects identified through these efforts will be used for future years and supplemented, as needed, through the MS4-TMDL Water Quality Improvement CIP. Consistent with the City’s planning documents that include green infrastructure as a strategy, funding has been added to the City’s 10-year capital plan to continue with the implementation of green infrastructure on a citywide basis.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

T&ES Strategic Plan 2012-2015; City of Alexandria Municipal Separate Storm Sewer System (MS4) General Permit, Program Plan, and PY5 Annual Report; Eco-City Charter City’s Combined Sewer System Permit; City’s Chesapeake Bay TMDL Action Plan; Old Town North Small Area Plan; Eisenhower West Small Area Plan; Landmark Van Dorn Small Area Plan; Flood Action Alexandria

ADDITIONAL OPERATING IMPACTS

Annual inspection, minor routine maintenance, and major maintenance will be required to ensure continued proper functioning of the asset.

HOOFFS RUN CULVERT MAINTENANCE

DOCUMENT SUBSECTION: Stormwater Management

PROJECT LOCATION: Areas west of Commonwealth Avenue and near W. Spring Street

MANAGING DEPARTMENT: Transportation and Environmental Services

REPORTING AREA: Potomac West, Northridge/Rosemont

PROJECT CATEGORY: 1

ESTIMATE USEFUL LIFE: 3-6 years

Hooffs Run Culvert													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	4,126,000		-	-	1,616,000	-	-	-	-	2,510,000	-	-	4,126,000
Financing Plan			-	-	1,616,000	-	-	-	-	2,510,000	-	-	4,126,000
GO Bonds (Stormwater)	4,126,000		-	-	1,616,000	-	-	-	-	2,510,000	-	-	4,126,000
Financing Plan Total	4,126,000		-	-	1,616,000	-	-	-	-	2,510,000	-	-	4,126,000

CHANGES FROM PRIOR YEAR CIP

No changes from prior CIP.

PROJECT DESCRIPTION & JUSTIFICATION

This project proposes funding on a 5-year cycle for ongoing heavy cleaning of the Hooffs Run Culvert. This culvert conveys stormwater from a significant portion of Northridge, Del Ray, and Rosemont and has been subject to recurrent flooding for over 100 years. Recent climate-change induced flash flooding has placed greater emphasis on the importance of ongoing heavy cleaning of this culvert by maximizing the culvert capacity.

In June 2020, the city hired a contractor to conduct a detailed inspection and, for the first time, a robotic survey of approximately 7,000 feet of the culvert. The survey identified overall debris levels in the range of 5% with isolated sections having debris accumulation of approximately 15-20%. The City, using prior-year funding, undertook an inspection and major heavy cleaning effort beginning in November 2020 and completed by mid-2021 from West Chapman down to Duke Street. Subsequently, inspection of the northern portion of the culvert from W. Chapman to West Spring Street determined that portion did not require cleaning at the time.

While the City has Operating funding to provide some routine debris removal and maintenance, this Capital Improvement Project ensures funding is set aside for ongoing inspections, heavy cleaning and/or other capital maintenance requirements that may be identified in future structural inspections. This funding was recommended by the Interdepartmental Flooding Management Task Force and the Flood Action Alexandria initiative.

During FY 2022, the City completed the inspection survey and provided a report with long term rehabilitation recommendations. The City has also developed design plans for short term culvert repairs to include replacement of deteriorated drain inlets and a culvert retaining wall. In the interim, starting in FY2023 and leading into FY2024 the city is planning to implement the short-term culvert repairs to keep the Hooffs Run culvert in a good state of repair. The short-term repairs will include the installation of access hatches along the culvert to facilitate future cleaning and long-term rehabilitation repairs.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

Flood Action Alexandria

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

INSPECTION AND CLEANING (STATE OF GOOD REPAIR) CFMP

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 1
 ESTIMATE USEFUL LIFE: Varies

Inspection and Cleaning (State of Good Repair) CFMP													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	28,346,291	6,084,291	500,000	1,578,000	1,695,000	1,835,000	2,006,000	2,220,000	2,496,000	2,862,000	3,304,000	3,766,000	22,262,000
Financing Plan													
GO Bonds (Stormwater)	7,738,267				228,070					1,383,635	2,360,562	3,766,000	7,738,267
Stormwater Utility Fund	16,791,733	2,268,000	500,000	1,578,000	1,466,930	1,835,000	2,006,000	2,220,000	2,496,000	1,478,365	943,438		14,523,733
Use of CIP Designated Fund Balance	3,816,291	3,816,291											
Financing Plan Total	28,346,291	6,084,291	500,000	1,578,000	1,695,000	1,835,000	2,006,000	2,220,000	2,496,000	2,862,000	3,304,000	3,766,000	22,262,000

CHANGES FROM PRIOR YEAR CIP

Planned funding reduced in FY 2024 due to available balances and current capacity to execute projects; Funding added for FY 2033.

This project includes amounts approved to be funded by the City's allocation from the American Rescue Plan Act (ARPA). Subsequently, these ARPA funds were recognized in FY 2023 to replace revenue that was lost due to the pandemic. This resulted in a surplus in FY 2022 that has been assigned in Fund Balance to fund the initiatives that City Council initially identified for use of ARPA funds. In this CIP document, these funds are included in the Prior Appropriations column under Use of CIP Designated Fund Balance.

PROJECT DESCRIPTION & JUSTIFICATION

This project provides funding annually for expanded and increased frequency of inspection and maintenance towards ensuring a state of good repair for 189 miles of pipe network and over 13,000 structures for the separate storm sewer system. Beginning in July 2020 under the Flood Action Alexandria initiative, staff expanded the inspection and repair portion of the storm sewer system. While initial expansion of the program is based on the inspections and requests from residents, staff is increasing proactive measures for inspection and cleaning based on timing and results of additional data sets to develop a Capital Facility Maintenance Program (CFMP) which will include a more detailed listing of projects with a prioritization based on these and other metrics. The prioritized list of projects and areas will be addressed based on funding allocated within the CIP. These additional data will inform future budgeting decisions.

While the operating budget supports routine maintenance and inspections, this CIP reflects expanded video inspections and infrastructure repair activities (up to and including structure replacement) to ensure all conveyance and storage structures, and outfalls are functional and operating at maximum capacity.

In FY 2024, staff is pursuing a scope to formalize our approach to State of Good Repair for the storm sewer system in support of Flood Action Alexandria. Taking a proactive approach has proven improvement throughout the City's hot spot flooding areas and this expanded approach will be used to develop a more holistic program to perform preventative inspection and maintenance for the storm sewer system as part of the Flood Action Alexandria program.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

N/A

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

LARGE CAPACITY - COMMONWEALTH AVE & E. GLEBE AND ASHBY ST & GLEBE RD

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Four Mile Run Watershed
 REPORTING AREA: Potomac West

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: 50 – 75 years

Large Capacity - Commonwealth Ave & E. Glebe/Ashby St & Glebe Rd													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	47,268,055	34,635,255	12,632,800	-	-	-	-	-	-	-	-	-	12,632,800
Financing Plan													
GO Bonds (Stormwater)	36,377,100	27,057,100	9,320,000	-	-	-	-	-	-	-	-	-	9,320,000
State/Federal Grants	115,200	115,200	-	-	-	-	-	-	-	-	-	-	-
Stormwater Utility Fund	10,775,755	7,462,955	3,312,800	-	-	-	-	-	-	-	-	-	3,312,800
Financing Plan Total	47,268,055	34,635,255	12,632,800	-	-	-	-	-	-	-	-	-	12,632,800

CHANGES FROM PRIOR YEAR CIP

No changes from prior CIP.

PROJECT DESCRIPTION & JUSTIFICATION

This project is for the design and implementation of the top two priority large-scale capital projects to address capacity and flooding issues at the intersection of Commonwealth Avenue and East Glebe Road and Ashby Street and East Glebe Road and the adjoining properties under the Flood Action Alexandria program. In the Four Mile Run Watershed, a series of smaller storm sewer systems converge at the intersections of Commonwealth Avenue and East Glebe Road, and Ashby Street and East Glebe Road. During high intensity storm events, the drainage network becomes over capacity and unable to accommodate heavy discharge from multiple upstream systems in tandem, that creates flooding impacts.

The City has been experiencing widespread flooding due to the increase in high intensity precipitation events associated with climate change and its inherent low-lying nature adjacent to the Potomac. The City’s 2016 City of Alexandria Storm Sewer Capacity Analysis (CASSCA), service requests received through Alex311 during large storm events, and subsequent investigations have identified segments and junctions of the storm sewer system which could be improved to better convey storm flows and help to reduce surface flooding and impacts to properties.

The project concept and design being developed is considering a mixture of storage, capacity, and green infrastructure solutions to provide flood mitigation with consideration of scenarios under varying storm intensities, including more recent flash flooding events, to create design alternatives and cost-benefit estimates for different levels of service based on varying design storms.

The Communications Plan for robust civic engagement includes interaction with the Ad Hoc Stormwater Utility and Flood Mitigation Advisory Group, the City Council, the community, and affected stakeholders to garner input, communicate expectations, and identify and report on project milestone achievements. Tools include but are not limited to a dedicated website with a project progress dashboard, frequent social media updates, inclusion in the Flood Action Alexandria eNewsletter, community meetings, and Council discussions.

Funding in the FY 2021 – FY 2030 CIP identified capacity project funding in FY 2025 and FY 2028 based on earlier planning-level estimates in CASSCA. Adjusted funding in the FY 2022 – FY 2031 CIP identified design funding appropriations in FY 2022 for the full design and FY 2024 for the full construction funding for these projects. The City continues to pursue state and federal grants to accelerate delivery of projects and offset local funding needs to soften proposed Stormwater Utility Fee increases in the 10-Year CIP.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

Eco-City Charter; Strategic Plan; Chesapeake Bay Preservation Plan in the City’s Master Plan; MS4 General Permit; Environmental Action Plan (EAP) 2040; City of Alexandria Storm Sewer Capacity Analysis (CASSCA); Flood Action Alexandria; Northern Virginia Flood Hazard Mitigation Plan

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

LARGE CAPACITY - HOOFFS RUN CULVERT BYPASS

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Northridge / Rosemont
 REPORTING AREA: Northridge / Rosemont

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: 50 – 75 years

Large Capacity - Hooffs Run Culvert Bypass													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	59,315,200	10,787,000	-	16,176,100	32,352,100	-	-	-	-	-	-	-	48,528,200
Financing Plan													
GO Bonds (Stormwater)	59,315,200	10,787,000	-	16,176,100	32,352,100	-	-	-	-	-	-	-	48,528,200
Financing Plan Total	59,315,200	10,787,000	-	16,176,100	32,352,100	-	-	-	-	-	-	-	48,528,200

CHANGES FROM PRIOR YEAR CIP

Funding schedule updated to reflect latest available estimated timeline for project.

PROJECT DESCRIPTION & JUSTIFICATION

This project includes the design and implementation of the third prioritized large stormwater capital project under Flood Action Alexandria which will address capacity and flooding issues associated with the Hooffs Run Culvert by creating a new bypass culvert for Timber Branch to remove that flow from the existing Hooffs Run Culvert. The project concept and design will consider a new bypass culvert to carry flows from Timber Branch, generally along Russell Road to the south, and may include a mixture of storage, capacity, and green infrastructure solutions to provide flood mitigation with consideration of scenarios under varying storm intensities, including more recent flash flooding events, to create design alternatives and cost-benefit estimates for different levels of service based on varying design storms.

In the Timber Branch / Hooffs Run Watershed, the Timber Branch stream enters a culvert near the intersection of W. Glendale and W. Timber Branch Parkway. The culvert is situated along the backyards of the properties fronting W. Glendale Avenue and Summers Drive and W. Glendale Avenue and W. Spring Street and joins the lower portion of the Hooffs Run Culvert near E. Spring Street and leads south near Commonwealth Avenue in a single culvert. During high intensity storm events, the drainage network becomes over capacity and unable to accommodate heavy discharge from multiple upstream systems in tandem, that creates flooding impacts.

The City has been experiencing widespread flooding due to the increase in high intensity precipitation events associated with Climate Change and its inherent low-lying nature adjacent to the Potomac. The City’s 2016 City of Alexandria Storm Sewer Capacity Analysis (CASSCA), service requests received through Alex311 during large storm events, and subsequent investigations have identified segments and junctions of the storm sewer system which could be improved to better convey storm flows and help to reduce surface flooding and impacts to properties.

The Communications Plan for robust civic engagement will include interaction with the Ad Hoc Stormwater Utility and Flood Mitigation Advisory Group, the City Council, the community, and affected stakeholders to garner input, communicate expectations, and identify and report on project milestone achievements. Tools include, but are not limited to, a dedicated website with a project progress dashboard, frequent social media updates, inclusion in the Flood Action eNewsletter, community meetings, and Council discussions.

Funding in the FY 2022 – FY 2031 CIP identified scheduled design funding appropriations in FY 2022 and full construction funding split in two separate fiscal years in FY 2025 and FY 2026 for scheduling of complete construction funding based on the current cost estimate. No grants or external funding has been secured to date; however, the City continues to pursue state and federal grants to accelerate delivery of projects and offset local funding needs to soften proposed Stormwater Utility Fee increases in the 10-Year CIP.

Staff is scheduled to procure consultant-led design services in spring FY 2023 in response to the RFQ for these services.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

ADDITIONAL OPERATING IMPACTS

Eco-City Charter; Strategic Plan; MS4 General Permit; Environmental Action Plan (EAP) 2040; City of Alexandria Storm Sewer Capacity Analysis (CASSCA); Flood Action Alexandria; Northern Virginia Flood Hazard Mitigation Plan

No additional operating impacts identified at this time.

LUCKY RUN STREAM RESTORATION

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: 2601 Gadsby Place
 REPORTING AREA: Beauregard

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: 21-25

Lucky Run Stream Restoration													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	3,791,651	3,791,651	-	-	-	-	-	-	-	-	-	-	-
Financing Plan													
GO Bonds (Stormwater)	2,735,000	2,735,000	-	-	-	-	-	-	-	-	-	-	-
State/Federal Grants	668,720	668,720	-	-	-	-	-	-	-	-	-	-	-
Stormwater Utility Fund	387,931	387,931	-	-	-	-	-	-	-	-	-	-	-
Financing Plan Total	3,791,651	3,791,651	-	-	-	-	-	-	-	-	-	-	-

CHANGES FROM PRIOR YEAR CIP

No changes from prior CIP.

PROJECT DESCRIPTION & JUSTIFICATION

Urban Stream Restoration is one of the major strategies in the City's Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan and referenced in the City's Eco-City Alexandria Environmental Action Plan 2040 to reduce pollution and address the Bay TMDL mandates enforced through the City's Municipal Separate Storm Sewer System (MS4) permit. However, more importantly, the project seeks to stabilize critical infrastructure and the channel, restore ecological habitats, and remove invasive vegetation and replanting with native vegetation as a sample of the planned co-benefits. The exposed portion of the sanitary sewer located along the existing stream bank is planned to be buried and that portion of the stream will be relocated farther away from the sewer.

Lucky Run was identified as being in poor condition, making it a prime candidate for a stream restoration project. The Lucky Run Stream Restoration includes multiple benefits, such as being a cost-effective strategy to address the City's pollution reduction requirements, stabilizing the critical sanitary sewer infrastructure, addressing accelerated erosion of the stream banks, and enhancing the Resource Protection Area (RPA). The project will also include major rehabilitative maintenance of the Lucky Run Pond under the BMP agreement stating that the City will perform maintenance for this regional facility to ensure proper functioning and the ability to continue claiming pollutant removal credits for the Pond as noted in the City's Phase 1 Bay TMDL Action Plan.

Initial project schedule delay was due to challenges with public engagement during the COVID-19 public health emergency and the need for more engagement with the community. Staff held a work session with City Council at the April 27, 2021 legislative meeting. At the work session, City Council instructed staff to perform soil analysis tests on the stream using the updated Expert Panel protocol, while proceeding with the Lucky Run project. The City is currently working to procure a construction contractor to complete the restoration and rehabilitation work.

The City has been awarded a \$668,720 grant from the state through the Stormwater Local Assistance Fund (SLAF) by leveraging an equivalent amount of funding from the Stream and Channel Maintenance project to fund this project. This reduced the original City contribution by half of the original estimated amount for the stream restoration portion of the project. However, changes to the schedule due to COVID and increases in costs requires additional available funding from the MS4-TMDL Water Quality Improvements program to supplement the initial funding. Design is completed and construction procurement will be concluded in FY 2023, with an anticipated completion in early 2024.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

City of Alexandria Municipal Separate Storm Sewer System (MS4) General Permit, Program Plan, and Year 5 Annual Report; City's Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan; Strategic Plan; Eco-City Charter; Environmental Action Plan; Green Infrastructure Program

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

MS4-TMDL COMPLIANCE WATER QUALITY IMPRV.

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: 30+ Years

MS4-TDML Compliance Water Quality Improvements													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	22,330,000	6,105,000	800,000	1,800,000	2,050,000	1,750,000	2,000,000	2,575,000	1,500,000	1,000,000	1,750,000	1,000,000	16,225,000
Financing Plan													
GO Bonds (Stormwater)	9,528,401	2,575,401	-	-	-	-	-	1,703,000	1,500,000	1,000,000	1,750,000	1,000,000	6,953,000
Stormwater Utility Fund	12,801,599	3,529,599	800,000	1,800,000	2,050,000	1,750,000	2,000,000	872,000	-	-	-	-	9,272,000
Financing Plan Total	22,330,000	6,105,000	800,000	1,800,000	2,050,000	1,750,000	2,000,000	2,575,000	1,500,000	1,000,000	1,750,000	1,000,000	16,225,000

CHANGES FROM PRIOR YEAR CIP

Planned funding reduced in FY 2024 due to available balances and current capacity to execute projects; Funding added for FY 2033.

PROJECT DESCRIPTION & JUSTIFICATION

The Virginia Department of Environmental Quality (DEQ) issued the City's current Municipal Separate Storm Sewer System (MS4) Permit on July 1, 2013 that mandates City-specific stormwater nutrient and sediment reduction targets for the Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan required and enforced through three 5-year MS4 permit cycles. Accordingly, the permit requires the City to implement stormwater treatment best management practices (BMPs) sufficient to achieve 5% of the reduction targets during the first 5-year permit (2013-2018), to achieve an additional 35% or 40% of total reduction targets during the second 5-year permit (2018-2023) by 2023, and the remaining 60% or 100% of the reductions on or before the end of the third permit cycle (2023-2028), but no later than by 2028.

The City continues planning efforts and identifying projects from the list of strategies in the City's Bay TMDL Action Plan. These plans and options are discussed through the City's Water Quality Workgroup, and through meetings with other internal and external stakeholders. The City completed the Chesapeake Bay TMDL Compliance Analysis and Options report (August 2014) that considered options and alternatives for treating stormwater to meet the Bay TMDL regulatory mandates, along with the corresponding planning-level costs to implement these alternatives. These formed the basis of the strategies included in the City's Phase 1 Chesapeake Bay TMDL Action Plan for 5% targets and in the subsequent draft (June 1, 2018) and final Phase 2 Chesapeake Bay Action Plan, dated September 24, 2019, to meet a total 40% of the targets. The Phase 3 Bay TMDL Action Plan is due at the beginning of the 2023-2028 MS4 permit. This budget is based on funding that can be used to implement a diverse mix of strategies to include retrofit of regional stormwater management facilities, implementation of Green Infrastructure as stormwater quality retrofits of City facilities and right-of-way retrofits, and urban stream restoration. Funding is used as specific projects are identified and developed to achieve these reductions.

Strategies implemented during the second permit cycle (2018 - 2023 permit) have already exceeded the Strategic Plan goal of 45% reductions by 2022 for a total of approximately 70% through June 30, 2022 to move towards more aggressive reductions to meet 100% of the current required reductions as mandated no later than 2028. Permit requirements and other regulatory expectations are adjusted with each successive MS4 permit and with each iteration of the state's Watershed Implementation Plan (WIP). The state is currently implementing the Phase III WIP (WIP III) with plans to develop a Phase IV WIP (WIP IV) likely in the 2025-2027 timeframe.

(Continued on Next Page)

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

City of Alexandria Municipal Separate Storm Sewer System (MS4) Permit, Program Plan, and Year 5 Annual Report; City's Chesapeake Bay TMDL Action Plan; T&ES Strategic Plan; Eco-City Charter; Eco-City Action Plan

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

MS4-TMDL Compliance Water Quality Imprv. (continued)

This project funds separate, discrete projects once identified and moved to the design phase. Past completed projects include the Lake Cook Retrofit and Ben Brenman Pond Retrofit and the upcoming Lucky Run Urban Stream Restoration. Potential new projects may include the following:

Potential City Properties for Retrofit	Estimated Pollutant Reductions (lbs./yr.)		
	TN	TP	TSS
Maintenance Facility / Lockett Field	11	2	1,496
TES / Recreation Operations	8	1	1,113
Traffic Control Shop	3	1	485

Potential Right-of-Way Projects	Estimated Pollutant Reductions (lbs./yr.)		
	TN	TP	TSS
Braddock Rd - North of I-395	12	2	1,547
Braddock Rd - South of I-395	27	4	3,537
King St - North of I-395	8	1	1,053
King St - South of I-395	21	3	2,480
Edsall Rd	9	1	1,078
Yoakum Pkwy	9	1	1,027

NPDES / MS4 PERMIT

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: Varies

NPDES / MS4 Permit													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	2,760,600	1,150,000	-	171,700	173,500	175,200	177,000	178,700	180,500	182,200	185,900	185,900	1,610,600
Financing Plan													
Cash Capital	250,000	250,000											
GO Bonds (Stormwater)	185,900											185,900	185,900
Stormwater Utility Fund	2,324,700	900,000		171,700	173,500	175,200	177,000	178,700	180,500	182,200	185,900		1,424,700
Financing Plan Total	2,760,600	1,150,000		171,700	173,500	175,200	177,000	178,700	180,500	182,200	185,900	185,900	1,610,600

CHANGES FROM PRIOR YEAR CIP

Planned funding reduced in FY 2024 due to available balances and current capacity to execute projects; Funding added for FY 2033.

PROJECT DESCRIPTION & JUSTIFICATION

This project provides funding for the data collection, inspection and enforcement, public education and outreach, public involvement and citizen participation, GIS mapping, development of water quality action plans, BMP database management, and reporting activities associated with implementation of the programs required by the National Pollution Discharge Elimination System (NPDES) permit regulations administered by the Virginia Department of Environmental Quality (DEQ) through the Virginia Stormwater Management Program (VSMP) General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Storm Water from Small Municipal Separate Storm Sewer Systems (MS4) per 9VAC25-890 et. seq.

The MS4 general permit has a duration of 5-year cycles that requires the City to develop, implement and enforce an MS4 Program Plan to reduce discharges of pollutants from the MS4, protect water quality, and satisfy the appropriate requirements of the Clean Water Act.

The City was originally issued General Permit VAR040057 on July 8, 2003, and the most recent permit was issued on November 1, 2018 and is effective through October 31, 2023. Each successive permit contains increased regulatory requirements which necessitate more resources. The 2018 – 2023 MS4 general permit was no exception, with increased requirements for public education and outreach, staff training, revisions to Total Maximum Daily Load (TMDL) plans, implementation of Stormwater Pollution Prevention Plans (SWPPPs), enhanced inspections, and additional reporting. The 2023-2028 follows suit with additional requirements under Pollution Prevention and Good Housekeeping and Post Construction Stormwater Management. The permits also continue to contain increasingly stringent mandates to address the Chesapeake Bay Total Maximum Daily Load (TMDL).

The 2023-2028 MS4 permit is scheduled to be promulgated effective November 1, 2023 with the required MS4 permit registration statement as an application for coverage to include the City’s Phase 3 Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan containing strategies to achieve 100% of the reductions in nutrients and sediment. The general permit requires additional standard operating procedures and new programmatic compliance, with MS4 annual reports covering compliance activities and other permit reporting requirements carried out for each fiscal year. Planned capital projects to meet the Bay TMDL reductions are budgeted as separate, specific projects under the “Stormwater Management” section of the CIP.

Finally, new broad requirements under the Virginia Watershed Implementation Plan Phase III (WIP III) and changes to guidance documents continue to translate into additional compliance activities.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

City of Alexandria Municipal Separate Storm Sewer System (MS4) Permit; MS4 Program Plan; MS4 Annual Report; City's Chesapeake Bay TMDL Action Plan; T&ES Strategic Plan; Eco-City Charter; Eco-City Action Plan

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

PHOSPHORUS EXCHANGE BANK

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: 30+ Years

Phosphorus Exchange Bank													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	-	-	-	-	-	-	-	-	-	-	-	-	-
Financing Plan	-	-	-	-	-	-	-	-	-	-	-	-	-
Stormwater Utility Fund	-	-	-	-	-	-	-	-	-	-	-	-	-
Financing Plan Total	-	-	-	-	-	-	-	-	-	-	-	-	-

CHANGES FROM PRIOR YEAR CIP

No changes from prior CIP.

PROJECT DESCRIPTION & JUSTIFICATION

Virginia Stormwater Management Program (VSMP) regulations, as incorporated into Article XIII of the Alexandria Zoning Ordinance - the Environmental Management Ordinance (EMO) – require properties that undergo development or redevelopment to reduce the amount of phosphorous in stormwater runoff that leaves the site in the post-construction condition. The amount of phosphorus that must be reduced is based upon several factors such as disturbed area, increases in impervious area, land cover types, etc. Owners of development sites may use applicable “offsite compliance options” to meet these requirements pursuant to 62.1-44.15:35 of the Code of Virginia and the attendant VSMP regulations per 9VAC25-870-69 A. The City can ‘exchange’ phosphorus reductions between projects occurring on city-owned properties under the current VSMP regulations.

Small-scale City-funded construction projects and City projects with unfavorable site conditions face difficulties in meeting stormwater management requirements on-site through the installation of stormwater quality structural best management practices (BMPs) due to lack of space and/or cost of construction that make installation infeasible. As such, these projects regularly use offsite compliance options to meet their regulatory phosphorous reduction requirements. Most often, this requirement is met by purchasing nutrient credits from the state’s Nutrient Credit Exchange for practices implemented outside the City within the Potomac River basin. In effect, these purchases send funds outside of the City and provide no benefit to local water quality.

The Transportation and Environmental Services, Stormwater Management Division (T&ES-SWM) created this policy alternative for City projects that allows offsite compliance options that provide benefits to local water quality and keep funds within the City. The policy was developed with input across city agencies, revised given that input, shared and approved by the Virginia Department of Environmental Quality, and executed via signature by the director of Transportation and Environmental Services. This project was initially seeded with \$100,000 to supplement the installation of BMPs that go beyond stormwater quality requirements that may be used on other projects. The project seeding also includes five (5) pounds of phosphorus that may be purchased by other City departments for small capital projects where installation of BMPs are not feasible.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

City of Alexandria Municipal Separate Storm Sewer System (MS4) Permit, Program Plan and Year 5 Annual Report; City's Chesapeake Bay TMDL Action Plan; T&ES Strategic Plan; Eco-City Charter; Eco-City Action Plan

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

SMALL-MIDSIZE STORMWATER MAINTENANCE PROJECTS

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 1
 ESTIMATE USEFUL LIFE: Varies

Small-Midsize Stormwater Maintenance Projects													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	8,952,900	1,081,300	613,900	649,100	685,900	724,400	765,800	809,100	854,200	901,400	922,900	944,900	7,871,600
Financing Plan													
GO Bonds (Stormwater)	1,844,230			437,300	462,030								1,844,230
Stormwater Utility Fund	7,108,670	1,081,300	613,900	211,800	223,870	724,400	765,800	809,100	854,200	901,400	922,900		6,027,370
Financing Plan Total	8,952,900	1,081,300	613,900	649,100	685,900	724,400	765,800	809,100	854,200	901,400	922,900	944,900	7,871,600

CHANGES FROM PRIOR YEAR CIP

Funding added for FY 2033.

PROJECT DESCRIPTION & JUSTIFICATION

This project provides annual funding for small and midsize stormwater maintenance projects to accelerate infrastructure repairs beyond maintenance. These small to mid-size stormwater maintenance projects would not be associated with other Spot Improvement projects and would not require in-depth design to mitigate flooding issues.

Typical small to midsize projects include repair/replacement of structure tops, inverts, gutter pans and pipe in the City's 189-mile storm sewer network and over 13,400 associated catch basin structures. Work may also include rehabilitation of pipe with trenchless technology or dig and replace based on the inspection and condition of the pipe. Work may also include cleaning or replacement of components of outfall structures and any other maintenance activity that keeps structures in satisfactory operating condition.

Currently, the City is in the early stages of compiling data from the enhanced inspections. Based on the data that has been collected to date, it is anticipated that the projects will be completed will fall under the following areas:

Cleaning of Structures	50%
Repair of Structures	20%
Replacement of Structures	5%
Replacement of Pipe Sections	15%
Lining of Pipe Sections	10%

It is noted that these percentages may change, based on requests from citizens, findings from City Staff, findings from closed circuit television inspections, and prioritization of work.

This project was recommended by the City's Interdepartmental Flooding Management Task Force and performed under the Flood Action Alexandria initiative. A list of headline progress indicators is under development.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

N/A

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

SPOT PROJECT - HUME AVENUE BYPASS

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Hume Avenue
 REPORTING AREA: Potomac West

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: 11 - 15 Years

Spot Project - Hume Avenue Bypass													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	667,216	667,216	-	-	-	-	-	-	-	-	-	-	-
Financing Plan													
ARPA													
Use of CIP Designated Fund Balance	667,216	667,216	-	-	-	-	-	-	-	-	-	-	-
Financing Plan Total	667,216	667,216	-	-	-	-	-	-	-	-	-	-	-

CHANGES FROM PRIOR YEAR CIP

This project includes amounts approved to be funded by the City’s allocation from the American Rescue Plan Act (ARPA). Subsequently, these ARPA funds were recognized in FY 2023 to replace revenue that was lost due to the pandemic. This resulted in a surplus in FY 2022 that has been assigned in Fund Balance to fund the initiatives that City Council initially identified for use of ARPA funds. In this CIP document, these funds are included in the Prior Appropriations column under Use of CIP Designated Fund Balance.

PROJECT DESCRIPTION & JUSTIFICATION

This project included in the Flash Flooding and Spot Improvements project received funding from the American Rescue Plan Act (ARPA) and is being delivered under the City’s Flood Action Alexandria initiative. Severe urban flash flooding occurred in this area on Hume Avenue during more recent severe storm events. The existing storm sewer trunk line passes through private property where the city has no access easements. Approximately 15 properties are impacted by flooding when this trunk line is surcharged. This storm sewer improvement re-routes a section of storm sewer away from private property to the right-of-way. Hume Ave will be resurfaced, and the curb & gutter will be replaced under the Flood Action Alexandria initiative.

The project will address a section of storm sewer pipe that does not have capacity to pass the city’s 10-year design storm. The project will disconnect the trunk line at the point it enters private property, and the end will be capped. A new trunk line will traverse Dewitt Ave and continue down Hume Ave where it will re-enter the main line serving the area. The pipe on private property will remain in place and continue to serve the adjacent properties that have low yards with inlets connected to the pipe. At a minimum, the bypass pipe system will be designed to handle the 10-year standard design storm. The curb and gutter and pavement will also be replaced in Hume Ave to improve street drainage. However, additional data collection in the Four Mile Run watershed associated with the Commonwealth, Ashby, and E. Glebe large capacity projects that is adjacent to Hume Avenue has identified modeled deficiencies that may arise based on the current scope. Staff is working with the consulting team to explore further scope options to alleviate this modeled flooding for the larger storm events to be consistent with the design storm chosen for the large capacity project. Early cost estimates that expand the scope and extent of this project to the E. Raymond and Commonwealth area that may include another new bypass in that area, has increased the current cost estimate for this project by two-fold to around \$3 to \$5 million, which will be provided by the Storm Sewer System Spot Improvements project.

The neighborhood in this area was part of the Alexandria Flood Action neighborhood outreach program and is currently engaged by staff. Updates to progress is through the city Flood Action website and the Ad Hoc Stormwater Utility and Flood Mitigation Advisory Group.

This project is being designed by a consultant currently under contract.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

Strategic Plan; MS4 General Permit; Environmental Action Plan (EAP) 2040; City of Alexandria Storm Sewer Capacity Analysis (CASSCA); Flood Action Alexandria; Northern Virginia Flood Hazard Mitigation Plan

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

SPOT PROJECT - MT. VERNON CUL-DE-SAC AND ALLEY

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: 10-Block of Mt. Vernon Ave
 REPORTING AREA: Potomac West

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: 11 - 15 Years

Spot Project - Mt. Vernon Cul-de-sac and Alley													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	1,232,784	1,232,784	-	-	-	-	-	-	-	-	-	-	-
Financing Plan													
ARPA													
Use of CIP Designated Fund Balance	1,232,784	1,232,784	-	-	-	-	-	-	-	-	-	-	-
Financing Plan Total	1,232,784	1,232,784	-	-	-	-	-	-	-	-	-	-	-

CHANGES FROM PRIOR YEAR CIP

This project includes amounts approved to be funded by the City’s allocation from the American Rescue Plan Act (ARPA). Subsequently, these ARPA funds were recognized in FY 2023 to replace revenue that was lost due to the pandemic. This resulted in a surplus in FY 2022 that has been assigned in Fund Balance to fund the initiatives that City Council initially identified for use of ARPA funds. In this CIP document, these funds are included in the Prior Appropriations column under Use of CIP Designated Fund Balance.

PROJECT DESCRIPTION & JUSTIFICATION

This project included in the Flash Flooding and Spot Improvements project received funding from the American Rescue Plan Act (ARPA) and is being delivered under the City’s Flood Action Alexandria initiative. The project is primarily within the right-of-way in the 10-block of Mt Vernon Ave, east of Commonwealth Ave. The project will consist of the construction of new inlets, a storm sewer extension up a portion of Mt Vernon Ave with new inlets at the curbs. Another storm sewer extension will be constructed in the alley to reduce nuisance flooding form alley runoff. Check valves will be installed at the connection to the Hooffs Run Culvert to prevent backflow into My Vernon Ave. The neighborhood in this area was part of the Alexandria Flood Action neighborhood outreach program and staff continues to engage with the neighborhood. Updates are provided through the city Flood Action website and the Ad Hoc Stormwater Utility and Flood Mitigation Advisory Group.

Severe urban flash flooding occurs in this area. The existing storm sewer in Mt Vernon Ave is inadequate to pass the local drainage from the city standard 10-year design storm and causes nuisance flooding and compounds severe flooding when the Hooffs Run Culvert is surcharged. This project will improve the local stormwater runoff management and increase the efficiency of moving stormwater through the storm sewers, reducing the frequency of nuisance flooding, and reduce the surcharge flooding from Hooffs Run Culvert during extreme flash flood events.

Funding for project design is through local Stormwater Utility funding, while most of the construction isis funded by American Rescue Plan Act (ARPA) under the Flash Flooding and Spot Improvements project designation.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

Strategic Plan; MS4 General Permit; Environmental Action Plan (EAP) 2040; City of Alexandria Storm Sewer Capacity Analysis (CASSCA); Flood Action Alexandria; Northern Virginia Flood Hazard Mitigation Plan

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

STORM SEWER CAPACITY PROJECTS

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: 11 - 15 Years

Storm Sewer Capacity Projects													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	82,432,218	8,557,218	-	-	15,950,000	15,200,000	13,675,000	6,700,000	6,350,000	4,000,000	7,000,000	5,000,000	73,875,000
Financing Plan													
Cash Capital	949,492	949,492	-	-	-	-	-	-	-	-	-	-	-
GO Bonds (Stormwater)	68,453,400	-	-	-	14,761,800	12,165,000	13,226,600	6,450,000	6,100,000	3,750,000	7,000,000	5,000,000	68,453,400
State/Federal Grants	516,500	516,500	-	-	-	-	-	-	-	-	-	-	-
Stormwater Utility Fund	12,512,827	7,091,227	-	-	1,188,200	3,035,000	448,400	250,000	250,000	250,000	-	-	5,421,600
Use of Stormwater Fund Utility Balance	-	-	-	-	-	-	-	-	-	-	-	-	-
Use of Stormwater Tax Dedication Fund Balance	-	-	-	-	-	-	-	-	-	-	-	-	-
Financing Plan Total	82,432,218	8,557,218	-	-	15,950,000	15,200,000	13,675,000	6,700,000	6,350,000	4,000,000	7,000,000	5,000,000	73,875,000

CHANGES FROM PRIOR YEAR CIP

Funding added for FY 2033.

PROJECT DESCRIPTION & JUSTIFICATION

This project includes the aggressive design and implementation of large-scale capital projects to address capacity and flooding issues. The City has experienced repeated and increasingly frequent flooding from storm events which lead to development of the *City of Alexandria Storm Sewer Capacity Analysis (CASSCA, 2016)*, a multi-year citywide storm sewer analysis and planning-level exercise to identify potential capacity issues and develop prioritized recommendations for improvements to the storm sewer system.

The City experienced four flash flooding events (July 8, 2019; July 23, 2020; September 10, 2020; and August 15, 2021) primarily as a result of climate change-induced severe rain events. Indications are that the City will continue to experience these severe rainfall events more frequently and that these large capital projects can provide a mix of conveyance and storage options to achieve long-term solutions to flooding issues.

The top 11 projects were prioritized based on planning-level cost-benefit analysis. These projects will mitigate flooding for the greatest number of residents, direct investment to areas where the most significant property damage is occurring and provide the greatest overall system benefit.

The prioritization sequence incorporates multiple data points such as the previous storm sewer and capacity analysis (CASSCA, 2016), property impacts documented through Alex311 service requests, refinement of those priorities through recent and ongoing neighborhood engagement meetings, and infrastructure connectivity from a systems perspective. These inputs were used to further prioritize capacity issues compared against reported issues and feedback from neighborhood groups. This prioritization includes a systematic (holistic, watershed) perspective to provide the needed capacity (conveyance and storage as practicable) that must first ensure downstream capacity is adequate before upstream issues can be addressed.

(Continued on next page)

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

ADDITIONAL OPERATING IMPACTS

Eco-City Charter; Strategic Plan; Water Quality Management Supplement to the City's Master Plan; MS4 General Permit; Environmental Action Plan (EAP) 2040; City of Alexandria Storm Sewer Capacity Analysis (CASSCA); Flood Action Alexandria; Northern Virginia Flood Hazard Mitigation Plan

No additional operating impacts identified at this time.

Storm Sewer Capacity Projects (continued)

For these large capacity capital projects that are costly, multi-year projects at the multi-block level, there is a greater level of certainty of project sequencing for the first three to four years. The estimated funding for the top three capacity projects is as follows:

1. Commonwealth Ave and Glebe Road: Design Fully Funded in FY 2022 and Construction Fully Funded in FY 2023. Planning level estimate of \$34 million.
2. Ashby Street and Glebe Road: Design Fully Funded in FY 2022 and Construction Fully Funded in FY 2024. Planning level estimate of \$16 million.
3. Hooffs Run Culvert Bypass: Design Fully Funded in FY 2022 and Construction Fully Funded in FY 2025 and FY 2026. Planning level estimate of \$60 million.

All planning and modeling to date is based on conceptual cost estimates and preliminary assessments, so there is considerable risk that costs could be higher than anticipated. During the feasibility and design of the first three projects, staff will conduct further cost-benefit analysis of including additional flood mitigation and resiliency in the design of these and future capacity projects to determine the potential positive impact of designing these projects beyond the City's 10-year storm design standard. It should be noted that even if the City designs capacity projects for larger, more intense storm events, there is always the risk that an even more significant rain event will occur. In those situations, greater capacity will help, but it cannot eliminate the risk of flooding entirely. If a higher design standard than the 10-year storm is used, and therefore individual projects likely cost far more than projected and afforded in this model, fewer projects will be delivered overall unless additional funding can be provided.

FY 2026 to FY 2033 Projects

Project sequencing initiating from FY 2026 to FY 2033 was based on the same considerations as the earlier projects; however, these may require reprioritization as further cost-benefit analysis, feasibility, and other design considerations become more available. These projects also include funding for potential property acquisition and/or public-private partnerships. The projects for the remaining six years of the capacity project element of the 10-Year Plan will address the following areas:

1. Edison and Dale Streets
2. Dewitt Avenue
3. East Mason Avenue
4. Notabene Drive and Old Dominion Boulevard
5. Mt. Vernon Avenue, East Glendale Avenue, East Luray Avenue, and East Alexandria Avenue
6. East Monroe Avenue and Wayne Street
7. Russell Rd & W. Rosemont Ave
8. Russell Rd & W. Rosemont Ave (south)

The schedule is aggressive, based on generic stormwater construction projects, and intended for financial planning and budgetary purposes only. Until substantial feasibility and design work is completed for each specific project, the schedule and budget will only be estimates that will include significant contingencies. As additional information is collected and the design of each project is further defined, more precise construction schedules and cost estimates can be developed.

The City received an initial Virginia Community Flood Preparedness Fund (CFPF) 50% matching grant of \$516,000 in March 2022 and another 50% matching grant in November 2022 of \$764,000 to accelerate portions of identified issues for the Edison Street and Dale Street area to deliver portions of the Edison and Dale Streets Large Capacity project ahead of the funding schedule of FY 2026 for that project.

STORM SEWER SYSTEM SPOT IMPROVEMENTS

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 1
 ESTIMATE USEFUL LIFE: Varies

Storm Sewer System Spot Improvements													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	60,832,043	17,148,618	2,353,000	4,122,000	4,228,000	4,337,000	4,540,000	4,606,000	4,688,000	4,812,000	4,937,000	5,060,425	43,683,425
Financing Plan													
Cash Capital	3,958,310	3,958,310	-	-	-	-	-	-	-	-	-	-	-
GO Bonds (Stormwater)	29,586,069	7,046,727	-	2,811,600	-	-	1,168,400	3,527,000	1,848,500	3,379,465	4,937,000	4,867,377	22,539,342
Private Capital Contributions	9,927	9,927	-	-	-	-	-	-	-	-	-	-	-
State/Federal Grants	1,250,000	-	1,250,000	-	-	-	-	-	-	-	-	-	1,250,000
Stormwater Utility Fund	26,027,737	6,133,654	1,103,000	1,310,400	4,228,000	4,337,000	3,371,600	1,079,000	2,839,500	1,432,535	-	193,048	19,894,083
Use of Stormwater Fund Utility Balance	-	-	-	-	-	-	-	-	-	-	-	-	-
Financing Plan Total	60,832,043	17,148,618	2,353,000	4,122,000	4,228,000	4,337,000	4,540,000	4,606,000	4,688,000	4,812,000	4,937,000	5,060,425	43,683,425

CHANGES FROM PRIOR YEAR CIP

Planned funding reduced in FY 2024 due to available balances and current capacity to execute projects; Funding added for FY 2033.

PROJECT DESCRIPTION & JUSTIFICATION

This project provides funding for essential capital infrastructure under the Flood Action Alexandria program that provides localized flood mitigation to specific neighborhoods on the lot and block level. These “Spot Improvements” of the City’s storm sewer system are typically small to mid-sized capital projects that alleviate localized drainage and flooding concerns and can be implemented in about 8 to 20 months from the beginning of design to final construction. These projects are typically identified through Alex311 inquiries, field observations, neighborhood engagement meetings, and onsite investigations. Given the more recent intense rainfall events and the impacts to a larger number of properties than typically encountered prior to these new rainfall patterns, the scope and cost of these spot projects may range from \$30,000 to over \$1 million, with many projects trending into six to seven figures.

A list of projects planned for FY 2024 – FY 2025 is included below. Due to the possibility of unexpected or emergency repairs, or if efficiencies can be achieved by staging projects together, the list is subject to change:

FY 2024

- Sanford Street
- 1400 block Ruffner Drive
- Francis Hammond Pkwy & Janneys Lane
- Valley Drive & Crestwood Dr
- E Bellefonte Ave
- 100 block S Jordan St
- George Washington Middle School Detention (accelerated)
- Beverly Dr
- Expanded Hume Avenue Bypass

FY 2025

- 4300 block Loyola Ave
- E Abingdon
- North Morgan St
- Key Drive Unnamed Tributary Channel
- Prince St & Dangerfield
- Hilltop Terr & Southview Terr – Upland Pl
- 100 block E Monroe
- 500 block E Alexandria Ave Storage

City staff continues to identify spot projects to provide improvements in the short to mid-term timeframe while concurrently advancing system capacity upgrades to reduce flooding. Completion of these Spot projects will improve the City’s storm sewer capital infrastructure while mitigating the impacts of localized flooding and drainage issues. Planning efforts related to the more recent flooding events include a wider identification and prioritization of Spot projects for consideration of scheduling and funding based on neighborhood engagement in response to flooding and further investigation of those issues. This includes maintaining and updating the ranking and prioritization for those identified projects. Note that project design is a fraction of the overall cost of the project, with construction making up around 80% of the overall project cost.

Since the further identification of additional projects in response to recent flooding, there are more projects to address than in the past. Given that the identification occurred over the last few fiscal years, many of these newly identified projects are in the design phase and will be moving to the construction phase in the near term.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

Eco-City Charter; Strategic Plan; Water Quality Management Supplement to the City’s Master Plan; MS4 General Permit; Environmental Action Plan (EAP) 2040; City of Alexandria Storm Sewer Capacity Analysis (CASSCA); Flood Action Alexandria; Northern Virginia Hazard Mitigation Plan

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

STORMWATER BMP MAINTENANCE CFMP

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 1
 ESTIMATE USEFUL LIFE: 30+ Years

Stormwater BMP Maintenance CFMP													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	8,148,823	806,000	303,500	1,575,300	1,622,500	317,100	326,600	336,400	346,500	356,900	1,792,200	365,823	7,342,823
Financing Plan													
GO Bonds (Stormwater)	2,861,423								346,500	356,900	1,792,200	365,823	2,861,423
Stormwater Utility Fund	5,287,400	806,000	303,500	1,575,300	1,622,500	317,100	326,600	336,400	-	-	-	-	4,481,400
Financing Plan Total	8,148,823	806,000	303,500	1,575,300	1,622,500	317,100	326,600	336,400	346,500	356,900	1,792,200	365,823	7,342,823

CHANGES FROM PRIOR YEAR CIP

Funding added for FY 2033.

PROJECT DESCRIPTION & JUSTIFICATION

The City is required to inspect and maintain stormwater facility best management practices (BMPs) installed to meet the City's Chesapeake Bay cleanup mandates. The Virginia Department of Environmental Quality (DEQ) issued the City's current Municipal Separate Storm Sewer System (MS4) Permit on November 1, 2018 that mandates City-specific stormwater nutrient and sediment reduction targets for the Chesapeake Bay Total Maximum Daily Load (TMDL) enforced through three 5-year MS4 permit cycles. The previous 2013-2018 MS4 permit required the City to implement stormwater treatment best management practices (BMPs) sufficient to achieve 5% of the reduction targets. The 2018-2023 MS4 permit requires implementation of practices to achieve an additional 35% or 40% of total reduction targets by 2023, and the 2023-2028 cycle requires the City to reduce the remaining 60% or 100%, no later than 2028. Identification of strategies to meet these reductions, which includes the retrofit of large regional ponds, urban stream restoration, and installation of green infrastructure, are included in the City's Chesapeake Bay TMDL Action Plan.

Long-term maintenance of this new infrastructure must be performed to ensure proper functioning and reduce pollution in stormwater runoff to meet the state and federal mandates. This project funds maintenance of Stormwater Best Management Practices (BMPs) implemented throughout the City, with a focus on the maintenance of larger stormwater management capital projects implemented under the Bay TMDL Action Plan:

- Cameron Station Pond Retrofit
- City Facilities Stormwater BMPs
- Green Infrastructure
- Lake Cook Stormwater Management
- Lucky Run Stream Restoration
- MS4-TMDL Water Quality Compliance projects
- Strawberry Run Stream Restoration
- Taylor Run Stream Restoration

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

Bay TMDL Action Plan, MS4 General Permit, Strategic Plan, Environmental Action Plan, Water Quality Management Supplement

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

STORMWATER UTILITY IMPLEMENTATION

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 1
 ESTIMATE USEFUL LIFE: N/A

Stormwater Utility Implementation													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	1,673,200	1,673,200	-	-	-	-	-	-	-	-	-	-	-
Financing Plan													
Cash Capital	1,518,200	1,518,200	-	-	-	-	-	-	-	-	-	-	-
Stormwater Utility Fund	155,000	155,000	-	-	-	-	-	-	-	-	-	-	-
Financing Plan Total	1,673,200	1,673,200	-	-	-	-	-	-	-	-	-	-	-

CHANGES FROM PRIOR YEAR CIP

No changes from prior CIP.

PROJECT DESCRIPTION & JUSTIFICATION

The City Council directed staff in February 2016 to develop the framework of a Stormwater Utility (SWU) to provide a dedicated funding source to more equitably distribute the increasing costs of recent state and federal Chesapeake Bay water pollution reduction mandates that require the implementation of costly infrastructure associated with stormwater management, as enforced through the City’s Municipal Separate Storm Sewer System (MS4) general permit. More recently, funding has been shifted and increased to fund flooding mitigation capital projects and programmatic operations and maintenance under Flood Action Alexandria. Increasing operating and capital costs associated with the mandates exceeded the ½ cent dedication, demanding increasing contributions from the General Fund. Creation of the SWU more equitably apportions the cost obligation and provides a dedicated funding source for the City’s Stormwater Management Program by shifting the burden to those properties that contribute more to stormwater runoff, thus alleviating pressure on the General Fund to support these funding responsibilities.

Following extensive public outreach, the City Council adopted the Stormwater Utility framework at its May 4, 2017 special meeting as part of the FY 2018 Budget. The City began implementing the Stormwater Utility Fee, effective January 1, 2018. First billing was sent May 2018 and second billing in October 2018, with the Real Estate bill. Every May and October thereafter, the Stormwater Utility bill was sent with each Real Estate bill, to fund these mandated stormwater improvements and the stormwater management program in an adequate, sustainable and equitable manner.

Database management, additional systems development (database modeling, integration and user interfaces), ongoing GIS data management, and other identified needs will continue, to successfully implement the utility. Extensive and ongoing robust public engagement is also key to implementation of the utility. Finally, an update to the Credit Program is currently under review to consider expanding the Credit Program to include flood mitigation practices for partial waivers to property owners for eligible practices.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

City of Alexandria Municipal Separate Storm Sewer System (MS4) Permit; MS4 Program Plan; MS4 Year 5 Annual Report; City’s Chesapeake Bay TMDL Action Plan; T&ES Strategic Plan; Eco-City Charter; Eco-City Action Plan 2040; Flood Action Alexandria

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

STRAWBERRY RUN STREAM RESTORATION

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation & Environmental Services

PROJECT LOCATION: Ft. Williams Parkway
 REPORTING AREA: Seminary Hill

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: 21-25 years

Strawberry Run Stream Restoration													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	1,772,728	1,772,728	-	-	-	-	-	-	-	-	-	-	-
Financing Plan													
Cash Capital	50,000	50,000	-	-	-	-	-	-	-	-	-	-	-
GO Bonds (Stormwater)	625,000	625,000	-	-	-	-	-	-	-	-	-	-	-
State/Federal Grants	800,000	800,000	-	-	-	-	-	-	-	-	-	-	-
Stormwater Utility Fund	297,728	297,728	-	-	-	-	-	-	-	-	-	-	-
Financing Plan Total	1,772,728	1,772,728	-	-	-	-	-	-	-	-	-	-	-

CHANGES FROM PRIOR YEAR CIP

No changes from prior CIP. Contingent on eventual direction of this project and engagement with Virginia Department of Environmental Quality (VDEQ), staff will likely include this project in a future Supplemental Appropriation Ordinance to reduce project budget authority related to the Stormwater Local Assistance Fund (SLAF) grant awarded to this project.

PROJECT DESCRIPTION & JUSTIFICATION

This project includes restoring approximately 900 linear feet of the Strawberry Run stream north of Duke Street and continuing north to the culvert under Fort Williams Parkway. It is bounded by residential development along Taft Avenue, Featherstone Place, and Fort Williams Parkway. When the Taft Avenue development was constructed, stream restoration was completed for a 500-foot section of Strawberry Run just to the north of Duke Street, before the current requirements.

This project was initially identified in the FY 2019 Phase III Stream Restoration and Outfall Rehabilitation Feasibility Study. The Study considered five stream segments for potential restoration projects and five outfalls for potential rehabilitation. The Study prioritized two potential stream restoration projects, with the top two potential projects identified as Strawberry Run and Taylor Run. Partial funding for the Taylor Run project included funding from this project and from the MS4 TMDL Water Quality Improvement CIP project.

The restoration project is proposed to stabilize the stream banks to mitigate erosion and protect nearby private property, repair a stormwater outfall, and provide overall improvement to stream health, while protecting local water quality and mitigating the transport of pollutants to the Chesapeake Bay.

This project was initially identified in the FY 2019 Phase III Stream Restoration and Outfall Rehabilitation Feasibility Study. The Study considered prioritization and identified strategies for five stream segments for potential restoration projects and five outfalls for potential rehabilitation. The Study prioritized two potential stream restoration projects, with the top two potential projects identified along Strawberry Run and Taylor Run. Partial funding for the Strawberry Run project included funding from this project and from the MS4 TMDL Water Quality Improvement CIP project.

City Council has acted on the project as part of the Chesapeake Bay TMDL Action Plan, the Stormwater Local Assistance Fund (SLAF) grant application, and through the budget process. The Virginia Department of Environmental Quality (VDEQ) reviewed the concept plan and performed a site walk as part of the SLAF award and has more recently reviewed the current plans. The project team consists of City staff from T&ES, RPCA, DPI and a consultant. A schedule delay was due to challenges with public engagement during the COVID-19 public health emergency and the need for more engagement. Staff has conducted public outreach and engagement via the following: general in-person and virtual public meetings; Parks and Recreation Commission; Environmental Policy Commission (EPC); targeted civic associations; social media posts; providing a 21-day public comment period; written responses; interviews with local news organizations; and a comprehensive, dedicated project webpage.

(continued on next page)

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

MS4 General Permit, Chesapeake Bay TMDL Action Plan, Strategic Plan, Environmental Action Plan 2040, Open Space Plan

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

Strawberry Run Stream Restoration (continued)

Staff held a work session with City Council at the April 27, 2021 legislative meeting. At the work session, City Council instructed staff to perform soil analysis tests on the stream using the updated Expert Panel protocol, to pause the planned stream restoration project for further evaluation and evaluate alternatives to natural channel design in coordination with the EPC. Council instructed staff to return as soon as possible with a planned schedule and summary of impacts. Staff has engaged a neutral third party to facilitate collaboration on alternative designs with a workgroup of stakeholders to consider and reach a consensus on a design alternative that may include doing nothing or stabilizing specific areas. Therefore, the anticipated completion date is to be determined at this time.

The SLAF grant deadline was previously extended by the VDEQ for one year due to COVID impacts. While the VDEQ SLAF award requires the City to have a signed grant agreement by the extended deadline of June 30, 2022, VDEQ has recently stated that the intent of the SLAF grant deadline is to ensure that applicants are making a good faith effort to move projects forward. Upon request, VDEQ granted a SLAF grant extension to December 31, 2022, for the City to have an executed grant agreement. Given that this date has passed without an executed grant agreement, the SLAF grant has effectively been rescinded. At the April 27, 2021, Legislative session, the City Council directed staff to pause the project and collaborate with the community stakeholders on alternatives to the natural channel design approach that could be implemented to meet project goals. To facilitate the collaboration, City staff engaged the neutral third party – the Institute of Engagement and Negotiation (IEN) with the University of Virginia – in July 2021 to begin working with the community on these alternatives. Throughout the engagement, community stakeholders, staff, and consultants have discussed alternative options to meet the project goals of stabilization and reduction of accelerated erosion. While the FY 2019 SLAF grant will likely be rescinded, this does not preclude the City from applying for future SLAF grants. However, the current alternatives to natural channel design being discussed do not meet eligibility requirements to allow the City to reapply for an upcoming SLAF grant.

STREAM & CHANNEL MAINTENANCE

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation and Environmental Services

PROJECT LOCATION: Citywide
 REPORTING AREA: Citywide

PROJECT CATEGORY: 1
 ESTIMATE USEFUL LIFE: Varies

Stream & Channel Maintenance													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	18,104,494	8,310,454	304,000	934,700	962,700	991,600	1,021,400	1,052,000	1,083,600	1,116,100	1,149,600	1,178,340	9,794,040
Financing Plan													
Cash Capital	3,802,125	3,802,125	-	-	-	-	-	-	-	-	-	-	-
GO Bonds	1,487,602	1,487,602	-	-	-	-	-	-	-	-	-	-	-
GO Bonds (Stormwater)	595,238	530,000	-	-	-	-	-	-	-	-	65,238	-	65,238
Private Capital Contributions	230,000	230,000	-	-	-	-	-	-	-	-	-	-	-
Stormwater Utility Fund	11,989,529	2,260,727	304,000	934,700	962,700	991,600	1,021,400	1,052,000	1,083,600	1,116,100	1,084,362	1,178,340	9,728,802
Financing Plan Total	18,104,494	8,310,454	304,000	934,700	962,700	991,600	1,021,400	1,052,000	1,083,600	1,116,100	1,149,600	1,178,340	9,794,040

CHANGES FROM PRIOR YEAR CIP

Planned funding reduced in FY 2024 due to available balances and current capacity to execute projects; Funding added for FY 2033.

PROJECT DESCRIPTION & JUSTIFICATION

This capital maintenance project preserves the capacity for City streams and channels to carry a 100-year floodwater, performs repairs to erosion damage, stream corridor degradation, grade control structures, storm sewer discharge points, and provides for stream stabilization/restoration. Projects may minimize blockages at bridges by removing and thinning excess vegetation and restoring conveyance capacity by removing sediment that accumulates more quickly due to more frequent, intense storm events. Efforts typically include sediment removal, vegetation maintenance, and in Holmes Run and Cameron Run watersheds, often include efforts in smaller tributaries to these streams.

The increasing frequency of climate-change induced intense storm events is requiring increased funding to ensure the conveyance capacity of these waterways as climate resiliency and adaption measures consistent with the City’s Climate Emergency Declaration.

Sediment removal and vegetation maintenance was conducted on Cameron Run in FY 2018 and is planned for FY 2024. Vegetation maintenance for Holmes Run is scheduled to occur in FY 2023. Staff also prioritizes projects on our smaller streams, including Hooffs Run, Taylor Run, Timber Branch, Backlick, and tributaries to larger streams to ensure there are no blockages at road and railroad crossings and that conveyance capacity is maintained. A condition inspection of the Lake Cook Eisenhower Culverts – the discharge culverts from Lake Cook under Eisenhower Avenue to Cameron Run – will take place in FY 2024, along with a schedule for design and maintenance depending on the condition inspection.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

Eco-City Charter; Water Quality Management Supplement to City Master Plan; MS4 General Permit and Program Plan; Chesapeake Bay TMDL Action Plan; Strategic Plan; Flood Action Alexandria

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

TAYLOR RUN STREAM RESTORATION

DOCUMENT SUBSECTION: Stormwater Management
 MANAGING DEPARTMENT: Department of Transportation & Environmental Services

PROJECT LOCATION: Chinguapin and Forest Parks
 REPORTING AREA: Taylor Run

PROJECT CATEGORY: 3
 ESTIMATE USEFUL LIFE: 21-25 Years

Taylor Run Stream Restoration													
	A (B + M)	B	C	D	E	F	G	H	I	J	K	L	M (C:L)
	Total Budget & Financing	Prior Appropriations	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Total FY 2024 - FY 2033
Expenditure Budget	4,685,289	4,685,289	-	-	-	-	-	-	-	-	-	-	-
Financing Plan													
Cash Capital	100,000	100,000	-	-	-	-	-	-	-	-	-	-	-
GO Bonds (Stormwater)	1,867,850	1,867,850	-	-	-	-	-	-	-	-	-	-	-
State/Federal Grants	2,255,000	2,255,000	-	-	-	-	-	-	-	-	-	-	-
Stormwater Utility Fund	462,439	462,439	-	-	-	-	-	-	-	-	-	-	-
Financing Plan Total	4,685,289	4,685,289	-	-	-	-	-	-	-	-	-	-	-

CHANGES FROM PRIOR YEAR CIP

No changes from prior CIP. Contingent on eventual direction of this project and engagement with Virginia Department of Environmental Quality (VDEQ), staff will likely include this project in a future Supplemental Appropriation Ordinance to reduce project budget authority related to the Stormwater Local Assistance Fund (SLAF) grant awarded to this project.

PROJECT DESCRIPTION & JUSTIFICATION

The project along Taylor Run is mainly located in Chinguapin Park, west of King Street in the City. This project will restore a severely degraded section of the stream from below the culvert near the Chinguapin Recreation Center to approximately 1,900 feet downstream. The project goals include stabilizing the stream corridor, stabilizing the sanitary sewer infrastructure that is at risk for failure, and enhancing the flora and fauna of the stream, while addressing Chesapeake Bay pollution mandates.

This project was initially identified in the FY 2019 Phase III Stream Restoration and Outfall Rehabilitation Feasibility Study. The Study considered five stream segments for potential restoration projects and five outfalls for potential rehabilitation. The Study prioritized two potential stream restoration projects, with the top two potential projects identified as Taylor Run and Strawberry Run. Partial funding for the Taylor Run project included funding from this project and from the MS4 TMDL Water Quality Improvement CIP project.

The City Council has acted on this project as part of the Chesapeake Bay TMDL Action Plan, the Stormwater Local Assistance Fund (SLAF) grant application, and through the budget process. The Virginia Department of Environmental Quality (VDEQ) reviewed the concept plan and performed a site walk as part of the SLAF award and has more recently reviewed the current plans. The project team consists of City staff from T&ES, RPCA, DPI and a consultant. Initial project schedule delay was due to challenges with engaging the public during the COVID-19 public health emergency, and the need for more engagement with the community. Staff has conducted public outreach and engagement via the following: general in-person and virtual public meetings onsite; at a virtual meeting with a small group from the Environmental Council of Alexandria, representatives from civic associations, and the community; the Parks and Recreation Commission; Environmental Policy Commission (EPC); targeted civic associations; social media posts; providing a 21-day public comment period; written responses; interviews with local news organizations; and, a comprehensive, dedicated project webpage.

Staff held a work session with City Council at the April 27, 2021, legislative meeting. At the work session, City Council instructed staff to perform soil analysis tests on the stream using the updated Expert Panel protocol, to pause the planned stream restoration project for further evaluation and evaluate alternatives to natural channel design in coordination with the EPC. Council instructed staff to return as soon as possible with a planned schedule and summary of impacts. Staff has engaged a neutral third party to facilitate collaboration on alternative designs with a workgroup of stakeholders to consider and reach a consensus on a design alternative that may include doing nothing or stabilizing specific areas. Therefore, the anticipated completion date is to be determined at this time.

EXTERNAL OR INTERNAL ADOPTED PLAN OR RECOMMENDATION

MS4 General Permit and Program Plan, Chesapeake Bay TMDL Action Plan, Strategic Plan, Environmental Action Plan 2040, Open Space Plan

ADDITIONAL OPERATING IMPACTS

No additional operating impacts identified at this time.

Taylor Run Stream Restoration (continued)

The SLAF grant deadline was previously extended by the VDEQ for one year, due to COVID impacts. While the VDEQ SLAF award requires the City to have a signed grant agreement by the extended deadline of June 30, 2022, VDEQ has recently stated that the intent of the SLAF grant deadline is to ensure that applicants are making a good faith effort to move projects forward. Upon request, VDEQ granted a SLAF grant extension to December 31, 2022, for the City to have an executed grant agreement. Given that this date has passed without an executed grant agreement, the SLAF grant has effectively been rescinded. At the April 27, 2021, Legislative session, the City Council directed staff to pause the project and collaborate with the community stakeholders on alternatives to the natural channel design approach that could be implemented to meet project goals. To facilitate the collaboration, City staff engaged the neutral third party – the Institute of Engagement and Negotiation (IEN) with the University of Virginia – in July 2021 to begin working with the community on these alternatives. Throughout the engagement, community stakeholders, staff, and consultants have discussed alternative options to meet the project goals of stabilization and reduction of accelerated erosion.