

Stormwater Management

29-03-Maintenance Operations

Fund/Agency: 001/29	Stormwater Management	
Personnel Services	\$4,279,587	<p>CAPS Percentage of Agency Total</p> <p>A pie chart titled 'CAPS Percentage of Agency Total' is located on the right side of the table. It is divided into two segments: a large blue segment representing 'Maintenance Operations' at 88.4%, and a smaller yellow segment representing 'All Other Agency CAPS' at 11.6%. A legend below the chart identifies the colors: a blue square for 'Maintenance Operations' and a yellow square for 'All Other Agency CAPS'.</p>
Operating Expenses	\$2,595,549	
Recovered Costs	(\$79,228)	
Capital Equipment	\$337,040	
Total CAPS Cost:	\$7,132,948	
Federal Revenue	\$0	
State Revenue	\$0	
User Fee Revenue	\$5,170	
Other Revenue	\$14,027	
Total Revenue:	\$19,197	
Net CAPS Cost:	\$7,113,751	
Positions/SYE involved in the delivery of this CAPS	101/101	

► CAPS Summary

The Maintenance Operations CAPS provides for the maintenance of the County's vast inventory of stormwater facilities, walkways, roadways, commercial revitalization and park-and-ride facilities, public street name signs, and other related infrastructure. In addition, this CAPS provides snow removal and other emergency support services.

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Key accomplishments of the Maintenance Operations over the past year include the following:

- An initial five-year proactive program to inspect, evaluate, and correct critical deficiencies in the County's storm sewer network was completed. Work was completed 1 1/2 years ahead of schedule.
- New business practices were implemented to significantly reduce response time to citizen requests for maintenance services. Over the past two years, initial response to citizen requests within one business day of receipt increased from 67 percent to 95 percent. Final complaint close-out within five business days increased from 81 percent to 95 percent. This occurred in light of a 10 percent increase in maintenance requests during the past year. Feedback via customer service surveys is solicited and analyzed to continuously improve service.
- Partnerships with the Northern Virginia Soil and Water Conservation District, Virginia Department of Forestry, and other groups were established to identify, scope, and implement capital storm drainage improvement projects. These projects include innovative techniques that directly support the desired outcomes of environmental protection and enhancement of community aesthetics. To date, several projects were successfully completed using these techniques.
- A program to encourage planting of stormwater management facilities by homeowner associations (HOAs) has been established in an effort to reforest areas impacted by development. Applications were provided to nearly 1,000 communities surrounding ponds and numerous volunteer tree-planting projects have been successfully completed.

Maintenance Operations in stormwater management systems are extremely dynamic and will continue to change as a result of changing mandatory regulations and ongoing trends in Fairfax County. Listed below are a few of the key trends that will have a significant impact on Maintenance Operations:

- Program inventory increases from land development – Since the mid 1980s, Fairfax County has added approximately 300,000 residents, 45 million square feet of office space, and 110,000 housing units. During this urbanization process, Maintenance Operations became responsible for additional stormwater facilities, walkways, roadways, commercial revitalization and park-and-ride facilities, public street name signs, and other related infrastructure inventory. In addition, this massive population growth trend resulted in the construction of facilities such as fire stations and libraries that require increased services from Maintenance Operations staff, including snow removal and other emergency support. In recent years, the budget has not been able to support Storm Drainage, Stormwater Management, and Walkway maintenance programs that require increased services from the Maintenance Operations staff, including snow removal and other emergency support. The past budget allocations to the maintenance programs have not provided commensurate increases in resources (staff, contract funding, equipment, etc.) as the County's infrastructure increased. As such, service level reductions often occur over time as new inventory and responsibilities are added to the program.

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- Regulatory requirements and the emphasis on the environment – In the past, routine infrastructure maintenance was minimally impacted by regulations and/or environmental considerations. However, in 1997, the County received its first five-year Municipal Separate Storm System (MS4) permit as required under the U.S. Environmental Protection Agency's National Pollutant Discharge Elimination System (NPDES) program. This mandated program required enhanced inspection, monitoring, maintenance, and reporting efforts pertaining to the entire Stormwater Facilities infrastructure. Many of the provisions in this permit are being minimally met at this time. With the permit expiring in January 2002, significant additional mandated activities are expected to be included in the renewal permit. The anticipated funding level to meet permit requirements is estimated to be \$3,318,000 in FY 2003. This proposed NPDES permit with associated costs was presented to the Board of Supervisors on July 23, 2001 and was approved for submission.

Stormwater Facilities

Stormwater Management (SWM) consists of a complex network of facilities that control the quantity, quality, and proper conveyance of stormwater runoff. Stormwater quality and quantity are managed through a series of SWM ponds or other devices at approximately 2,900 locations throughout the County. Maintenance Operations is responsible for inspecting and maintaining nearly 1,000 of these facilities. In addition, this CAPS is responsible for inspection and regulatory oversight services for approximately 1,900 privately maintained SWMs. These SWMs mitigate the effects of urbanization by controlling the increased volume of run-off and reducing pollutant loading caused by urbanization. The facilities release treated stormwater run-off at reduced rates into a conveyance system consisting of thousands of miles of storm sewer pipes, channels, and streams. Maintenance Operations maintains approximately 33,000 drainage structures, 1,000 miles of storm sewer, and 2,000 miles of streams.

This is an essential service that directly impacts the health, safety, and welfare of the general public. The proper maintenance of this entire network minimizes structure and roadway flooding, as well as overall degradation of water quality. Work is performed in-house and via contracted services.

The current level of service is provided below. This work is performed using both in-house forces and by contract:

Storm drainage network – (with the goal of keeping the storm drainage system open and flowing to prevent house and roadway flooding)

- Inspect facilities once every five years
- Remove major blockages in drainage system
- Repair safety hazards such as cave-ins and missing manhole covers
- Repair drainage structures where damage impacts functionality

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Stormwater management facilities – (with the goal of keeping SWM facilities’ flood control and pollution treatment aspects functional)

- Inspect public facilities once every year, private facilities once every five years
- Remove blockages at control structure
- Repair safety hazards such as stabilizing dam embankments when earthen structures threatened
- Remove trees and brush from dam embankments and emergency spillways

Perform any maintenance activities required by the Commonwealth of Virginia

The staff year equivalent (SYE) for Stormwater Facilities Maintenance Operations = 65.1 SYE

Walkways

Walkways consist of a network of sidewalks, trails, and pedestrian bridges that provide for non-motorized transportation throughout the County. These facilities have many different identified uses:

- School walkways – these facilities are used by school children walking to and from school. Maintenance Operations maintains approximately 50 miles of school walkways.
- Public street sidewalks – these walkways are used by the general public for intra/inter community travel. Maintenance Operations maintains approximately 300 miles of public street sidewalks.
- Trails – these walkways are constructed in accordance with Fairfax County’s Comprehensive Plan as identified on the Trails Plan. This plan includes bicycle, pedestrian, equestrian, and multi-use trails throughout the County. Maintenance Operations maintains approximately 180 miles of trails.
- Pedestrian bridges – Separate bridges and other structures are often required where walkways intersect with streams. Maintenance Operations currently maintains 64 such crossings.

The current level of service is provided below. This work is performed using both in-house forces and by contract:

Walkways – (with the goal of minimizing major safety deficiencies on a priority basis, such as fallen trees, broken handrails, etc.)

- Inspect facilities once every 2.5 years
- Clear brush from school sidewalks annually
- Repair safety concerns such major trip hazards, vertical drop-offs, damaged handicapped ramps, etc.

Bridges – (with the goal of verifying structural integrity and minimizing safety concerns)

- Inspect bridges once every two years in accordance with National Bridge Inspections Standards
- Repair safety concerns identified during bridge inspections on a priority basis.

The SYE for Walkways Maintenance Operations = 7.0 SYE

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Roadways

The majority of roads in Fairfax County is maintained by the Virginia Department of Transportation (VDOT). However, Fairfax County maintains certain roads not accepted into VDOT's system. Maintenance is performed in accordance with adopted Board of Supervisors policies pertaining to the Road Maintenance and Improvement Program. Roads in this program must serve two or more occupied structures with primary driveway access via the road, or serve as a school bus route or meet other public needs. Currently, there are 55 segments of road totaling 4.2 miles in the program (known as Attachment 1 roads) and another 2.2 miles of roads being processed for eligibility determination (known as Attachment 1A roads). Work is performed in-house and via contracted services.

The current level of service is provided below. This work is performed using both in-house forces and by contract:

- Attachment 1 roads are periodically inspected to determine maintenance needs; Attachment 1A roads are reviewed only upon request by citizens.
- Grading, patching, minor ditching, slope stabilization, vegetation clearing to eliminate obstructions, and drainage structure repair are performed on a prioritized basis.

The SYE for Roadways Maintenance Operations = 2.8 SYE

Commercial Revitalization and Park and Ride Facilities

There are currently four Commercial Revitalization Areas maintained by the Maintenance Operations: Route 1, Annandale, Springfield, and Baileys Crossroads. The Commercial Revitalization program is a Countywide initiative to rehabilitate and enhance commercial centers. Each district includes aesthetic enhancements through streetscape and landscape improvements. There are currently 11 park-and-ride facilities maintained by Maintenance Operations, including six parking lots/structures (Centreville, Herndon-Monroe, Reston East, Reston South, Rolling Valley, and Sully), four Commuter Rail Stations (Backlick Road Station, Burke Center Station, Lorton Station, and Rolling Road Station), and one Bus Transit Center (Tyson's Transit Center). Work associated with the maintenance of these improvements is performed via contract. Maintenance Operations oversees this contract.

The current level of service is provided below. This work is performed using primarily contract labor, with contract oversight by in-house forces:

- Inspect facilities once every month.
- Perform routine grounds, shrub, tree, and flower maintenance at scheduled intervals. This includes trash removal from grounds and containers, mowing, mulching, pruning, pest control, fertilization, watering, and seasonal flower rotation.
- Perform non-routine grounds maintenance and appurtenance repair as required. This includes repair/replacement of bus shelters, street lights, benches, brick pavers, asphalt parking surfaces, drainage facilities, fencing, etc.

The SYE for Commercial Revitalization and Park and Ride Facilities = 2.7 SYE

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Public Street Name Signs

Maintenance of public street name signs to provide for public safety is performed by Maintenance Operations. Public street name signs are required to provide for public safety as required by the Board of Supervisors and the Commonwealth of Virginia. The Countywide public street name sign inventory consists of approximately 34,686 sign installations.

The current level of service is provided below. This work is performed primarily using in-house forces:

- Inspect all signed intersections in Fairfax County once every two years.
- Fabricate and install new or repaired street name signs as needed.

The SYE for Public Street Name Signs Maintenance Operations = 7.1 SYE

Snow Removal and Other Emergency Support Services

Snow response is provided during winter storm emergencies to designated County facilities such as police stations, fire and rescue stations, critical governmental and judicial centers, and non-critical County agencies as resources permit (approximately 160 sites). Non-snow related emergency response is also provided as directed, normally to support County agencies such as the Police Department, Fire and Rescue Department, and the Health Department. This work is required to assist in natural disaster relief operations, hazardous material clean-ups, demolition of unsafe structures, removal of hazardous trees, and other services as requested.

The current level of service is provided below. This work is performed using both in-house forces and by contract:

- Response is based on the County Facility Emergency Snow Removal Plan which established operational procedures and priorities during emergency response.
- During severe snow events or other emergencies, employees are placed on rotating shifts to allow Maintenance Operations to operate on a 24-hour basis until the end of the emergency.

The SYE for Snow Removal and Other Emergency Support Services = 16.4 SYE

Summarization of SYE's in Maintenance Operations

Stormwater Facilities	65.1
Walkways	7.0
Roadways	2.8
Commercial Revitalization and Park and Ride Facilities	2.7
Public Street Name Signs	7.1
Snow Removal and Other Emergency Support Services	16.4
Total	101.1

Funding for Maintenance Operations is primarily provided through Fund 001, General Fund, with supplemental funds provided in Fund 303, County Construction, to identify sidewalk curb cut problems and coordinate with a designated construction contractor to replace them.

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► Method of Service Provision

Maintenance Operations are accomplished through the use of both existing County staff and contracted maintenance services. Routine inventory inspections are currently provided on the cyclical basis as noted above. Approximately 1,800 citizen requests for maintenance operations are received annually, with a goal to provide an initial response within one business day and to close out the request within five business days. Required work that falls within the jurisdiction, level of service, and available resources of the Maintenance Operations is prioritized, scheduled, and completed.

Normal hours of operation for maintenance staff are Monday through Friday, 7:30 a.m. to 4:00 p.m., and office personnel are 8:00 a.m. to 4:30 p.m. House flooding response, snow removal services and other emergency call-outs are responded to on a 24-hour basis, 365 days per year.

► Performance/Workload Related Data

Title	FY 1998 Actual	FY 1999 Actual	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate
Output:					
Inventory:					
Storm drainage System (miles) ⁽¹⁾	4,500	2,200	756	2,206	912
Stormwater Management Facilities ⁽²⁾	887	2,713	941	2,833	979
Walkways/trails (miles)	307	375	408	405	538
Public street name Signs	33,606	33,936	34,186	34,736	34,686
Inspected:					
Storm drainage System (miles)	297	650	87	167	182
Stormwater Management Facilities	509	1,260	941	860	979
Walkways/trails (miles)	119	128	416	189	215
Public street name Signs	32,500	29,088	39,431	25,827	26,015

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Title	FY 1998 Actual	FY 1999 Actual	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate
Efficiency:					
Maintenance cost per:					
Storm drainage System (miles)	\$286	\$558	\$1,993	\$1,917	\$1,772
Stormwater Management Facilities	\$1,163	\$1,168	\$994	\$1,026	\$1,013
Walkways/trails (miles)	\$741	\$547	\$766	\$678	\$741
Public street name Signs	\$9	\$10	\$12	\$11	\$12
Service Quality:					
Percent Inspected:					
Storm drainage System	6.6%	29.6%	11.5%	7.6%	20.0%
Stormwater Management Facilities	57.4%	46.4%	100.0%	33.9%	100.0%
Walkways/trails	38.8%	34.1%	102.0%	46.7%	40.0%
Street name signs	96.7%	85.7%	110.0%	74.4%	75.0%
Outcome:					
Citizen Maintenance Requests per:					
Storm drainage System (100 miles)	12	24	75	73	70
Stormwater Management Facilities (100 Facilities)	9	9	10	9	9
Walkways/trails (100 miles)	14	11	10	8	7
Average response time to repair street name signs (days)	6.9	5.6	3.9	3.9	3.9

¹ Beginning in FY 2000, mileage is based on actual surveys and land records, and inspections measured include those by survey staff only. Prior years' inspections included those submitted through maintenance requests as well.

² FY 2000 actual inventory and inspection data reflects only County-maintained facilities. Prior years' data include private facilities as well.

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► Mandate Information

This CAPS is Federally or State mandated. The percentage of this CAPS' resources utilized to satisfy the mandate is 76 - 100%. The specific Federal or State code and a brief description of the code follows:

Federal

- Public Law PL-566
- 1972 Federal Pollution Control Act
- 40 CFR Parts 122-124, 504 (Amendments to the 1987 Clean Water Act requiring National Pollutant Discharge Elimination System (NPDES) Permits for stormwater discharges)
- Clean Water Act Section 404 (Wetlands Law & Regulations)
- 44 CFR Parts 59-77 (Floodplain Management and Protection Regulations)
- Federal Clean Air Act of 1990; 28 CFR 35
- 49 CFR parts 27,37 & 38; 23 CFR 650 & Subpart C; Public Law-596
- 29 CFR 1910, 1926, 1928

State

- Code of Virginia 10.1-603 et seq (VA Stormwater Management Law), 15.1-510 and 62..1-11 Department of Conservation and Recreation Regulation VR 215-02-00
- Code of Virginia 10.1-560 et seq (VA Erosion and Sediment Control Law)
- VA Soil and Water Conservation Board Regulation VR 625-02-00
- Code of Virginia 10.1-2100 (Chesapeake Bay Preservation Act)
- Code of Virginia 10.1-604 et seq.
- Code of Virginia 32.1-13; 62.1-13.5, VR 680-15-02 (VA Water Control Board 401 Water Protection Permit Regulations)
- Code of Virginia 11-35 et seq; Code of VA 15.1-641
- Code of Virginia 15.1-379, 15.1-459
- Code of Virginia 46.2-1305
- Code of Virginia 46.2-1312
- Code of Virginia 15.1-446.1
- Code of Virginia 33.1-225.3
- Code of Virginia 33.1-193 & 194

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- Code of Virginia 10.1-658
- Code of Virginia 15.1-11 & 11.01
- Code of Virginia 15.1-510 & 62.11
- Dept of Conservation Board Regulation VR 625-02-00
- Code of Virginia 2.1-340.1 et seq.
- Code of Virginia 40.1-1; 40.1-2.1 & 40.1-22
- Code of Virginia 11-35 et seq.
- Code of Virginia 15.1-38.1

► User Fee Information

Subsubject Code	Fee Title	FY 2002 ABP Fee Total
0636	Street Sign Fabrication Fee	\$5,170
Current Fee		Maximum Allowable Fee Amount
\$100 for single-blade sign \$185 for double-blade sign		N/A
Purpose of Fee:		
The County sets this fee to recover the direct cost of fabrication of public street name signs that are purchased by developers. The Maintenance and Stormwater Management Division evaluates sign costs annually and adjusts the fee as necessary.		
Levy Authority	Requirements to Change the Fee	Year Fee Was Last Adjusted
VA Code Section 15.1-379 & 459; 46.2-1305 & 1312.	No ordinance changes required to modify this fee	1996
Other Remarks:		