

# Stormwater Management

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LOB #375:

## **TRAILS AND WALKWAYS MAINTENANCE**

### **Purpose**

The walkway and pedestrian bridge maintenance program provides maintenance services for the network of sidewalks, asphalt trails, natural trails, ADA ramps, and pedestrian bridges that are within the Department of Public Works and Environmental Services (DPWES) inventory. Other walkways networks that are in Fairfax County are maintained by other entities: VDOT, Fairfax County Park Authority (FCPA), private entities, and Northern Virginia Regional Park Authority.

This LOB provides for the operating expenses of in-house maintenance staff to perform routine and emergency maintenance services as well as for the funding for the support services of the Community Labor Forces (CLF) during their routine maintenance services in the community. Other capital maintenance funding that is directly related to this program is the Emergency Maintenance of Existing Trails project (Fund 30060, Pedestrian Walkway Improvements), which supports capital rehabilitation and emergency repairs that have a larger scope and scale and typically require contractor services.

### **Description**

This LOB provides for the routine maintenance of spot repairs and emergency repairs on the walkways and pedestrian bridges. The current walkway inventory maintained by DPWES includes 237 miles of trails, 427 miles of sidewalks, and 68 bridges. The total walkway network is 664 miles long and it is estimated that 81 miles (12 percent) is less than 10 years old. More than 258 miles (39 percent) is older than 20 years. The value of walkways and pedestrian bridges network is over \$220 million. It should be noted that the inventory has grown significantly during the last 20 years, but maintenance staffing has not increased.

This LOB provides the necessary walkway operating funds for materials, support, equipment, and accrued charges by in-house and CLF crews during maintenance operations. Typical work includes:

- Vegetation clearing along walkways
- Welding repairs on hand rails, guard rails, and pedestrian bridges
- Surface preparation and painting of railings and bridges
- Removal of trip hazards
- Spot structural bridge stabilization
- Carpentry support of pedestrian bridges and retaining walls
- Small area walkway repairs damaged by storms and by trees
- Spot repairs for ADA compliance

In contrast, funds associated with capital maintenance are required for longer walkway repairs, larger bridge replacements and more numerous ADA ramp replacements. These projects may require more time, more resources, special equipment, and/or special skills; thus, this associated fund is used for these contracted services. Also, in-house maintenance crew levels have decreased since the mid-1990s even though the walkway inventory and other County infrastructure have significantly increased. A constant backlog of maintenance work orders does not allow for many large-scale projects to be undertaken by in-house staff.

# Stormwater Management

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There is not one unified section within MSMD that is assigned to manage various transportation assets. Most of the budgeted 5.75 FTE for walkways repair programs is maintenance staff time (5.50 FTE). One part-time engineering position (0.25 FTE) is the only engineering and administrative support that is charged to this walkway program, but this engineering position also supports and manages other programs:

- County roads and service drives
- Commercial Revitalization Districts
- Park and Rides
- Bus shelters
- Plan review for Fairfax Department of Transportation's capital improvement plans

Even though pro-active inspections are required, budget restrictions require inspections to be deferred until walkway failures happen or until complaints are submitted by citizens. Therefore, no inspection FTE positions are budgeted for this program. This LOB is performed with 0/5.75 FTE. The actual FTE time worked on any Agency 87 Transportation program during the year varies and is dependent upon the weather conditions. Snow and flood response takes precedence over the other programs and can result in extended staff time for emergency response.

Funding within Fund 30060, Pedestrian Walkway Improvements, for Emergency Repairs to County Walkways is part of multiple capital funding sources for various infrastructure under the Office of Capital Facilities; however, this fund for capital walkway maintenance is managed and administered by an associate agency - Maintenance and Stormwater Management Division (MSMD). This arrangement allows for one agency to manage the necessary repairs that are both routine and capital rehabilitative in nature. These capital maintenance funds are required for longer walkway repairs, larger bridge replacements and more numerous ADA ramp replacements. Since these projects may require more time, more resources, special equipment, and/or special skills; this capital fund is used for these contracted services and to purchase needed materials, such as concrete. The adopted budget amount for this capital fund has been \$300,000 for the last two fiscal years. The current backlog of walkway emergency repairs is \$2.5 million and another \$5 million for deteriorating walkway sections. These repairs are needed to be done in the short term but the current capital fund amount of \$300,000 does not allow for the replacement considerations for the walkway network that is aging and valued over \$220 million as well as the consideration that the walkway inventory is increasing due to land development donations and Fairfax County Department of Transportation's pedestrian bond (currently \$100 million) initiatives.

Fund 40100, Stormwater Services, includes 23.0 FTE positions related to transportation operations maintenance provided by the Maintenance and Stormwater Management Division. All funding for the transportation-related salary expenses and equipment is recovered from Agency 87, Unclassified Administrative Expenses, in the General Fund.

## Benefits

Walkways play an important role in transportation since they provide a safe path to walk along that is separated from motorized traffic. Depending on speeds of traffic, estimates show and almost 90 percent reduction in the number of crashes (Florida DOT study) when walkways are provided. In addition to the safety of pedestrians, walkways provide additional benefits to the community by:

- Reducing the carbon footprint and providing air quality improvements
- Encouraging exercise as well as other health benefits related to an active and healthy lifestyle
- Providing more social spaces, allowing for easier neighborhood watch viewpoints, and community connectivity
- Improving neighborhood housing values, traffic mitigating benefits, and other business/economic improvement benefits

# Stormwater Management

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## Mandates

This LOB complies with the following laws and mandates:

- Erosion and Sediment Control Program
- Pupil Transportation
- Emergency Management Assistance
- Local Emergency Operations Plan
- Disaster Assistance
- Clean Air Act
- Virginia Pollution Discharge Elimination System Permit
- Uniform Statewide Building Code
- Occupational Safety and Health
- Virginia Public Records Act
- Disclosure of Proffered Cash Payments and Expenditures
- Federal Mass Transportation Grants
- Clean Air Act Amendments of 1990
- Transportation Services for Individuals with Disabilities
- Federal Uniform Administrative Requirements

## Trends and Challenges

During the 2008 LOB review, DPWES reduced their inspection service levels to response only. Often walkways and bridge repairs are deferred due to funding constraints. Most recently, two bridge projects estimated to be \$500,000 in repair costs required several years to accumulate enough funds to pay for the necessary repairs. These delays have put pedestrians at risk and they have required bridge and walkway closures for emergency stop-gap repairs.

The lifecycle rates for asphalt trails are less than 30 years and the lifecycle rates for natural trails are much less than that. Concrete sidewalks have a lifecycle of approximately 50 years depending on the climate and environment issues. Pedestrian bridges are too unique to provide lifecycle estimates, but typically they are not expected to last more than 40 years. The relatively small percent of failure rate is related to the age of the network since the majority of the network is younger than the aforementioned life cycles. However, staff expects with the aging of the overall network, the percent of walkway failures will accelerate. Also, the network is continuing to grow in inventory so the rate of additional capital funding and staffing levels needed to meet the required current level and then keep pace with the cost of construction inflation and the inventory growth; otherwise, the failure rates will be affected.

The current backlog of work on failed walkway sections is more than 10 miles. Also, another 15 miles of walkway sections are deemed deteriorating and will fail in approximately 5 years. To repair the failed sections now, it would cost more than \$2.5 million, and to repair the deteriorating sections in five years it would cost an additional \$5 million.

In summary, deferral of capital reinvestment into the existing walkway systems and the increased inventory from developer donations and Fairfax County pedestrian bond initiatives will lead to sections of walkway that will continue to deteriorate at an accelerated rate. This deferral of capital reinvestment may result in County staff to closing down of unsafe walkways and bridges until funding is available for needed repairs.

# Stormwater Management

## Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
<b>LOB #375: Trails and Walkways Maintenance</b>			
<b>FUNDING</b>			
<u>Expenditures:</u>			
Operating Expenses	\$368,697	\$332,330	\$360,000
Total Expenditures	\$368,697	\$332,330	\$360,000
Total Revenue	\$0	\$0	\$0
<b>POSITIONS</b>			
Authorized Positions/Full-Time Equivalents (FTEs)			
<u>Positions:</u>			
Regular	0 / 0	0 / 0	0 / 0
Total Positions	0 / 0	0 / 0	0 / 0

## Metrics

Metric Indicator	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
Total inventory of maintained walkways (in Miles Per FTE)	113.7	115.1	115.5	115.5	115.5
Renewal Rate (Percentage)	0.05%	0.05%	0.13%	0.13%	0.13%
Replacement Cycle (In Years)	2,200	2,200	733	733	733

The current capital reinvestment comes solely from Emergency Maintenance of Existing trails program (\$300,000/year via Fund 30060, Pedestrian Walkway Improvements). Thus, the current replacement cycle of walkways is the walkway network value divided by capital reinvestment fund amount (\$220,000,000 / \$300,000 per year), which equals more than 733 years.

To consider a very optimistic life cycle rate of 100 years, which is double the industry expectation of 50 years of the most durable pedestrian infrastructure (concrete sidewalks), it would require the capital maintenance funding to be increased to \$2.2 million per year. It should be noted that the renewal rate of 1 percent is not the industry standard, rather it is a range from 1 percent - 5 percent depending on the type of infrastructure and its current condition. The current renewal rate is computed by dividing the capital maintenance funding (\$300,000) by the current value of walkway network (\$220,000,000) and then multiplying it by 100 for a renewal percentage of 0.13 percent. This overall metric is similar to the replacement cycle and both metrics are overarching to the core sustainable issues for this transportation infrastructure. If capital reinvestment and staffing are not improved, the pedestrian walkway investment will become a serious risk liability.

The staffing has not increased since the mid-1990s, but the inventory has increased; thus, the current miles of walkways per FTE have steadily increased since the 1990s. This trend is not recommended when the transportation system is already strained with rush hour gridlock.

$$1995 = \frac{\text{WALKWAY (MILE)} = 250}{\text{FTE} = 5.75} = 43.5 \text{ mile/FTE}$$

$$2015 = \frac{\text{WALKWAY (MILE)} = 664}{\text{FTE} = 5.75} = 115.5 \text{ mile/FTE}$$