

Stormwater Management

LOB #378:

ROADS AND SERVICE DRIVES MAINTENANCE

Purpose

This LOB is the County's road maintenance program for emergency repairs of roads that are not maintained by VDOT, federal agencies, private entities, or other public entities. These private and public entities may include Homeowner Associations (HOAs), Facilities Management Department (FMD), Park Authority, or Schools. This LOB provides for the operating funding of in-house maintenance staff to perform routine and emergency maintenance services as well as support services of the administrative, engineering, maintenance and inspection staff salaries. A capital maintenance fund that is directly related to this program is the Reinvestment/Emergency Repairs to Roads fund, which funds 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 and emergency repairs on roads that are not accepted into VDOT's maintenance system or by other public or by private entities. Unlike service roads maintained by the Park Authority, FMD, or Fairfax County Public Schools that provide specific access for a facility, these roads have public road dedication for the general community access.

A (0.25 FTE) staff member who manages and provides engineering and administrative support for these County roadways is funded through other transportation programs. A small amount of capital funding in the Reinvestment/Emergency Repairs to Roads fund exists for this LOB. All staff that supports this County road inventory is from the Maintenance and Stormwater Management Division, DPWES.

This LOB originally maintained 185 service drive segments (16.5 miles) that were primarily in commercial districts. This inventory has been reduced over the years due to development and further deed research revealed the road dedication was not done. The County also maintains an additional 44 segments (4.5 miles) that are primarily in residential areas under the Fairfax County Road Maintenance Improvement Program (FCRMIP) that follows the terms of Virginia Code § 33.1-225.3.

There are approximately 3 miles that are under County control due to developers defaulting during the land development services. These developer default roads are being maintained and improved by forfeited developer bonds and supplemented by General Funds. Thus, these developer default roads are not part of this LOB. MSMD operation staff provides emergency snow removal under another General Fund program. This program provides for snow removal on all County facilities.

MSMD staff routinely receives service requests for road maintenance on roads that are dedicated as public roads, but have not been inventoried or historically maintained by the County. Some of these roads have been dedicated as public roads over 50 years ago, but their maintenance history is unclear. Staff is in the process of inventorying and assessing their condition. The preliminary research reveals that another approximately 43 miles of dedicated public roads, which have an approximate value of \$232 million, exist, but are not recognized by VDOT as their maintenance responsibility. Thus, these 43 miles may become the responsibility of the County.

Maintenance Functions

This LOB is to provide the necessary operating funds for materials, staff support, equipment, and accrued charges by in-house maintenance staff. Typical work includes:

- Pot-hole repairs
- Rutting repairs and/or grading repairs on gravel roads
- Vegetation clearing to ensure sight distance

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- Debris removal for safe access and health safety
- Spot repairs damaged by storms
- Traffic control sign maintenance
- Ditch and shoulder maintenance
- Slope stabilization
- Guardrail and safety-related repairs

Program Staffing and Funding

This LOB does not have any full-time staff positions or operational funding assigned to it for the necessary maintenance materials, equipment and accrued repair costs. Proactive inspections are a core component of sustaining road infrastructure and this function was eliminated during the 2008 LOB process. Although administrative, engineering, and support staff positions have been eliminated, a transportation engineering position was recently added to MSMD to assist with engineering and administrative support. This position provides 0.25 FTE on roads since this position also supports other programs:

- Walkways and pedestrian bridges
- Commercial Revitalization District
- Park and Rides
- Silver Line Maintenance
- Bus Shelters
- Plan review for Fairfax County Department of Transportation's capital improvement plans

The lack of full-time staffing and funding is not sustainable for this LOB and does not allow for sustaining the roadway investment and community welfare. Also, limited operational funding does not allow for leveraging opportunities with the Community Labor Force (CLF).

Roadway Inventory and Estimated Roadway Value

Maintenance responsibility assigned to this LOB:

- Service Drives 15 miles
 - FCRMIP Roads 5 miles
 - Public Roads Not Maintained By VDOT, etc. 43 miles
- Total = 63 miles

Estimated value of County roadway:

- Service Drives \$118 Million
 - FCRMIP roads \$25 Million
 - Public Roads Not Maintained By VDOT, etc. \$232 Million
- Total = \$375 Million

In summary, there is no operational funding or full time staffing assigned to this LOB. This deferral of maintenance does not allow for sustaining the roadway infrastructure valued at \$375 million. In addition, the ownership or maintenance responsibilities are unclear. Similarly, adjacent properties may or may not be maintaining these roadways for access to their properties.

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Funding within Fund 30010, General Construction and Contributions, for Emergency Repairs to County Roadways is part of multiple capital funding sources for various infrastructure under the Office of Capital Facilities; however, this fund for capital roadway maintenance is managed and administered by MSMD. This arrangement allows for one agency to manage the necessary repairs that are both routine and capital rehabilitative in nature. This capital fund and the operating fund are used to maintain the existing inventoried 20 miles of County roads. An ongoing County roadway inventory and assessment project that was funded through one-time carryover funds have identified an additional 43 miles of County roads that are not within VDOT's maintenance inventory or under private maintenance. The net worth of the 63 miles of County roads are valued at \$375 million. For the last two fiscal years the capital fund for Emergency Road Repairs has been funded at \$150,000. The ongoing inventory and assessment study, identified various needed repairs estimated at \$7.9 million. These preliminary repair estimates do not account for any life cycle replacement costs that are related to expected life cycles of asphalt roadways being 10 to 15 years. These repairs costs are associated with only short-term, required repairs – not the additional costs or recurrent and reinvestments costs that are related to the net value of \$375 million and the life cycle of 15 years. The capital maintenance and reinvestment of \$150,000 per year allows for County roads to be replaced approximately every 2500 years. This deferral of maintenance and reinvestment does not allow for sustaining the roadway infrastructure valued at \$375 million dollars.

This LOB is performed with 0/0.75 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.

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

The County plays an important role in transportation since it provides a means of access for commercial and residential properties. Well-maintained roadways provide for the following benefits to the community:

- Not only vehicular safety, but pedestrian and adjacent property safety is improved
- Well-maintained roads support sustainable communities
- Well-maintained roads allow for efficient access during times of emergencies
- Well-maintained roads improve neighborhood housing values, traffic mitigating benefits, and other business/economic improvement benefits

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

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- 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 administrative, engineering, inspection, and maintenance staff. Complaint inspectors of the walkway and stormwater programs respond to these complaints on a pro-bono basis, which stresses other programs and is not sustainable. Staff members are being borrowed from other programs to engineer and manage emergency repair projects.

The life cycle rates of asphalt roads are variable depending on the quality of materials, design, and environmental issues. Generally, these asphalt roads last 10 to 15 years. Gravel has similar variables; however, gravel roads generally last only 5 to 10 years.

The current backlog of work for all of the 63 miles of public roads that are not maintained by VDOT or other entities are estimated to be:

- | | |
|---------------------------------------|-----------------------|
| • Hazardous roadway segments | \$4.0 Million |
| • Roadways segments in poor condition | \$2.2 Million |
| • Roadways segments in fair condition | <u>\$1.7 Million</u> |
| | Total = \$7.9 Million |

The above repair estimates do not account for replacement costs that are related to lifecycle rates. The above repairs are only estimates of required, current repairs.

The staffing has not increased since 2007 when MSMD started to maintain orphan service drives, but the inventory has significantly increased due to staff's research; thus, the current miles of roadway per FTE have increased dramatically since 2007. This trend is not sustainable while maintaining a viable transportation network.

$$\begin{aligned} 2007 &= \frac{\text{Roadway (MILE)} = 20}{\text{FTE} = 1.0} = 20 \text{ Mile/FTE} \\ 2015 &= \frac{\text{Roadway (MILE)} = 63}{\text{FTE} = 0.25} = 252 \text{ Mile/FTE} \end{aligned}$$

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Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
LOB #378: Roads and Service Drives Maintenance			
FUNDING			
<u>Expenditures:</u>			
Operating Expenses	\$215,270	\$53,349	\$0
Total Expenditures	\$215,270	\$53,349	\$0
Total Revenue	\$0	\$0	\$0
POSITIONS			
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 County roads (in Miles Per FTE)	Not applicable	252	252	252	252
Renewal Rate (Percentage)	0.07%	0.07%	0.04%	0.04%	0.04%
Replacement Cycle (In years)	1,434	1,434	2,500	2,500	2,500

The current roadway maintenance funding comes solely from Reinvestment/Emergency Repairs of Roads program (\$150,000/year via Fund 30010, General Construction and Contributions). Thus, the current replacement cycle of roadways is the roadway network value divided by capital reinvestment fund amount (\$375,000,000 / \$150,000 per year), which equals more than 2,500 years before the network roadway is replaced.

To consider a very optimistic life cycle rate of 50 years, which factors longer-than-expected roadway life cycles, it would require the capital maintenance funding to be increased to \$7.5 million per year. It should be noted that the renewal rate of 2 percent is significantly more than the current rate of 0.04 percent. The current renewal rate is computed by dividing capital maintenance funding (\$150,000) by the current value of roadway network (\$375,000,000) and then multiplying it by 100 for a renewal percentage of 0.04 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 reinvestment and staffing are not improved, the roadway infrastructure will become a liability, rather than an asset.