

OFFICE OF THE STATE INSPECTOR GENERAL

**Virginia Department of Transportation
Snow Removal**

Performance Audit
June 2022



Michael C. Westfall, CPA
State Inspector General
Report No. 2022-PA-003



COMMONWEALTH OF VIRGINIA
Office of the State Inspector General

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June 22, 2022

The Honorable Glenn Youngkin
Governor of Virginia
P.O. Box 1475
Richmond, VA 23219

Dear Governor Youngkin,

The Office of the State Inspector General completed an audit of the Virginia Department of Transportation's Snow Removal process. The final report is attached.

OSIG would like to thank VDOT Commissioner Stephen C. Brich and his staff for their cooperation and assistance during this audit.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael C. Westfall".

Michael C. Westfall, CPA
State Inspector General

CC: The Honorable Jeff Goettman, Chief of Staff to Governor Youngkin
The Honorable Rebecca Glover, Deputy Chief of Staff & Communications Director
The Honorable W. Sheppard Miller III, Virginia Secretary of Transportation
The Honorable Terry L. Austin, Chair, House Transportation Committee
The Honorable David W. Marsden, Chair, Senate Transportation Committee
Stephen C. Brich, Commissioner, Virginia Department of Transportation
Bradley Gales, Director, VDOT Assurance and Compliance Office
Staci Henshaw, Auditor of Public Accounts

HIGHLIGHTS

Snow Removal

What OSIG Found

Shortage of Contractors

Sufficient contractor resources are not available to assist the Virginia Department of Transportation (VDOT) for snow removal. For five of the six area headquarters (AHQs) reviewed, the Office of the State Inspector General noted shortages in the upper levels of snow removal mobilization plans - Level 4 and Level 5. With additional requirements such as workers compensation insurance and automatic vehicle locator (AVL) monitoring devices, for example, VDOT has experienced a reduction in the number of contractors interested in meeting these requirements.

Improper Insurance Verification

VDOT did not always obtain, verify and record documentation that a contractor's equipment had proper insurance coverage before the contractor used that equipment in snow removal operations.

Validation of Contractor Equipment

There is little to no validation that trucks reporting for snow removal services were the same trucks that were pre-approved to perform those services prior to the current snow season.

VDOT management concurred with all findings and plans to implement corrective actions by December 15, 2022.

Why OSIG Performed This Audit

On February 16, 2018, the former superintendent of VDOT's Burke Area Headquarters was sentenced to prison for his participation in a bribery scheme that brought in \$11 million over five years. This audit was conducted in response to that event, with a focus on the snow removal mobilization process.

What OSIG Recommends

- VDOT needs to find a balance between having sufficient resources and working with acceptable levels of risk. As this is a multifaceted issue, OSIG offers facilitating a post-audit brainstorming session with VDOT representatives to address the matter.
- VDOT should obtain, verify and place in the Severe Weather Application System insurance documentation confirming coverage for specific snow removal equipment prior to placing the equipment in service.
- Consideration should be given to leveraging the existing AVL technology to verify equipment is the same as inspected, then conducting physical checks on a random basis to supplement the electronic verification. As this is a multifaceted issue with no simple answer, OSIG is willing to facilitate a post-audit brainstorming session with VDOT representatives to address the matter.



For more information, please contact OSIG at 804-625-3255 or www.osig.virginia.gov

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BACKGROUND

VDOT is responsible for the maintenance of all interstate, primary and secondary roads with the exception of those in Henrico and Arlington counties. For more than 20 years, VDOT has relied on contracted equipment with operators, often referred to as “hired equipment,” to supplement state forces in each of its nine districts.



District maintenance staff, in conjunction with the Central Office Maintenance Division, is responsible for ensuring that VDOT prepares for all winter weather operations, and that the agency conducts all contracting efforts to support winter weather operations according to Virginia procurement laws, policies and guidelines.

Each district is responsible for developing a District Snow Plan that ensures its preparedness and capability to maintain passable roadways consistent with established best practices for typical winter weather events. Each residency office and Interstate Maintenance Office creates a comprehensive snow plan for each of their AHQs or other work areas that engage in snow removal operations. Each district submits its approved snow plan to the Central Office Maintenance Division on a due date prior to the start of the active snow season. The division then uploads all snow plans to the Winter Operations Team Site or another similar shared location.

Each residency office and Interstate Maintenance Office determine the hired equipment needs to supplement state forces. They use a statewide standardized process for contracting with interested parties to provide equipment with an operator to remove snow and ice from VDOT roadways. The contract with the selected parties is standardized and documented on Form M-7B. VDOT documents the snow plan with resources assigned on Form M-41.

SCOPE

OSIG planned an audit of snow removal operations for the 2019-2020 snow season. However, the lack of snow for the season forced OSIG to suspend the audit temporarily with plans to resume in August 2020. OSIG resumed work in August 2020 and made updates to planned audit procedures for the 2020-2021 snow season. After completing the updates, OSIG concluded that conducting the audit during the COVID pandemic would not be practical and any value the audit produced would be limited without reviewing normal snow operations. As such, OSIG suspended the audit until August 2021.

For the 2021-2022 snow season, the audit scope covered VDOT snow removal operations in:

- Salem District's Christiansburg and Blacksburg AHQs for January 15-16.
- Salem District's Hanging Rock and Southwest AHQs for January 28-29.
- Fredericksburg District's Chancellor AHQ for January 15-16.
- Fredericksburg District's Gloucester AHQ for January 21-22.

OSIG is also conducting a related audit on the Fredericksburg I-95 Snow Incident of January 3-4, 2022. OSIG will issue results of that audit in a separate report.

OBJECTIVES

Objectives of this audit were to:

- Determine whether equipment approved/accepted and identified in VDOT snow plans is mobilized in accordance with the plan that was developed.
- Determine whether equipment approved/accepted for snow removal services is the same equipment used during snow events.
- Determine whether insurance coverage is active on vehicles used for snow removal operations.

METHODOLOGY

OSIG conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that OSIG plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for the findings and conclusions based on the audit objectives. OSIG believes that the evidence obtained provides a reasonable basis for the findings and conclusion based on the audit objectives.

OSIG applied various methodologies during the audit process to gather and analyze information pertinent to the audit scope and to assist with developing and testing the audit objectives. The methodologies included the following:

- Reviewing policies and procedures.
- Conducting on-site visits during a sample of snow events.
- Photographing vehicles mobilized for a sample of snow events.
- Comparing the Form M-41 Snow Plan to the Truck Status Event Log Report (Mobilization Report) from VDOT's Severe Weather Application System to determine if mobilization is in accordance with the plan.
- Observing AVL use during the sample of snow events.
- Validating vehicle inspections in Synovia, the system that stores completed vehicle inspection results, for vehicles performing snow removal services during snow events.
- Verifying insurance coverage for contractor vehicles performing snow removal services during snow events.

FINDINGS

FINDING #1 - SHORTAGE OF CONTRACTORS

According to Chapter 6 of the VDOT Maintenance Best Practices manual, the department shall plan for and attempt to promptly and efficiently treat and remove snow and ice from all highway systems or make them passable as soon as possible. This is considered an emergency activity and is intended to maintain roadway assets while ensuring the safety of the traveling public and year-round use of the state highways without undue delays.

In response, each VDOT district creates a snow plan to ensure preparedness and consistency during the snow season. VDOT defines mobilization levels, including what equipment is needed and available for each level of response. Contractors are required to maintain insurance on their equipment. Except for heavy off-road equipment, the contractor should have an operating AVL installed. As additional requirements such as workers compensation insurance and AVL monitoring devices have become necessary, VDOT has experienced a reduction in the number of contractors interested in meeting these requirements.

A sufficient number of contractors is not available to complete snow plans. OSIG noted shortages in the Level 4 and Level 5 mobilization categories for five of six AHQs reviewed. OSIG observed this at the Chancellor AHQ in the Fredericksburg District and the Christiansburg, Blacksburg, Hanging Rock and Southwest AHQs in the Salem District.

Without sufficient resources at mobilization levels 4 and 5, major snowstorms have the potential to be crippling unless assistance from other parts of the state can fill the gaps. In the event of a major statewide storm, VDOT would not be able to keep up without hiring equipment at costly rates and potentially accepting contractor equipment when that equipment has not been inspected or properly insured.

Recommendation(s):

VDOT needs to find a balance between having sufficient resources and working with acceptable levels of risk. VDOT might need to consider options such as using state employees from other agencies who have commercial driver's licenses or training VDOT staff who do not operate equipment as part of their normal job to operate equipment during snow events. As this is a multifaceted issue, OSIG offers facilitating a post-audit brainstorming session with VDOT representatives to address this matter.

Management Response(s):

VDOT management agrees with the conditions observed and the recommendation as presented.

FINDING #2 - IMPROPER INSURANCE VERIFICATION

The M-7B agreement requires the contractor to provide a Certificate of Insurance and Policy Declarations Pages for Automobile Liability that include the covered vehicle(s) listed on the insurance policy.

Documentation that contractor's equipment has proper insurance coverage was not obtained, verified and recorded in the Severe Weather Application System before that equipment was used in snow removal operations. Insurance documentation maintained in the Severe Weather Application System for four Fredericksburg District, Gloucester AHQ contractors and for two Fredericksburg District, Chancellor AHQ contractors did not list vehicles on the Certificate of Insurance.

According to the Fredericksburg Infrastructure Manager, errors were made in regards to the Gloucester AHQ exceptions resulting in copies filed in the Severe Weather Application System that did not have the vehicles listed, while in Chancellor the vehicles were not listed at all. OSIG follow up with the insurance companies confirmed that four vehicles had no coverage while two other vehicles had coverage that was not documented.

Recommendation(s):

Insurance documentation confirming coverage for specific snow removal equipment should be obtained, verified and placed in the Severe Weather Application System prior to equipment being placed in service.

Management Response(s):

VDOT management agrees with the conditions observed and the recommendation as presented.

FINDING #3 - VALIDATION OF CONTRACTOR EQUIPMENT

VDOT Maintenance Directive: Standardized Winter Operations Planning and Execution establishes the mobilization and demobilization process for snow removal equipment to ensure consistency, transparency, accountability and compliance with best practices. Processes are further defined in the Snow Removal Equipment Services Agreement M-7B, Scope of Services section (A5c) which indicates that equipment photos taken during equipment verification may be used when reporting for operational service to verify the registration, license plate and Vehicle Identification Number.

There is limited to no validation of trucks reporting for snow removal services to ensure they are the same/correct trucks that were approved through the M-7B process to perform the services. No validation of trucks reporting for snow removal services for the January 15 – 16, 2022 snow event at the Fredericksburg District, Chancellor AHQ was observed.

According to the Fredericksburg District Infrastructure Manager, there is no large scale checking of items such as VIN's, insurance and tags, especially in the bigger urban areas since logistics makes this difficult. The District Infrastructure Manager told OSIG that VDOT performs spot checks, but not wholesale checks of every single piece for every storm.

The possibility exists that contractors substitute uninspected vehicles. This increases the risk of accidents. Fredericksburg District Infrastructure Manager commented that in evaluating the cost/benefit impact of this for the current season, there were no accidents related to a contractor with a faulty piece of equipment in the district. Accidents due to driver errors did occur, but these were not due to faulty equipment.

Recommendation(s):

Consideration should be given to leveraging the existing AVL technology to verify equipment is the same as inspected, then conducting physical checks on a random basis to supplement the electronic verification. As this is a multifaceted issue with no simple answer, OSIG is willing to facilitate a post-audit brainstorming session with VDOT representatives to address this matter.

Management Response(s):

VDOT management agrees with the conditions observed and the recommendation as presented.

FINDING #4 - CENTRAL FILING OF SNOW PLANS

The current version of Form M-41 should be available to all levels of management. In accordance with VDOT Maintenance Directive: Standardized Winter Operations Planning and Execution, each district shall submit their approved snow plans to the Central Office Maintenance Division no later than the established submission date of December 1. Snow plans may be submitted as individual files in an email or links to a shared site such as SharePoint or Google Drive. The Central Office Maintenance Division shall collect all district snow plans and upload them to the Winter Operations Team Site or another similar shared location.

M-41 forms obtained from the Central Office for the Salem District Hanging Rock and Southwest AHQs and the Fredericksburg District Chancellor and Gloucester AHQs were outdated. In effect, all levels of management, including those in Central Office, did not have correct information about the snow removal plans and related staffing for the various mobilization levels.

Changes were made at the residency level subsequent to the district offices' submissions to Central Office in the fall. The Fredericksburg District Infrastructure Manager commented that the document sometimes changes because vendors are not signing up on time. Additionally, VDOT receives incomplete documentation that causes vendors to miss the deadlines for signup, and the area headquarters has to continue to work with vendors past the deadline to get enough equipment. Otherwise, there would be additional equipment shortages.

Recommendation(s):

The Maintenance Division or district should update the Winter Operations Team Site or another newly developed central repository with the new versions of Form M-41 after approval by the residencies.

Management Response(s):

VDOT management agrees with the conditions observed and recommendation as presented.

AUDIT RESULTS

This report presents the results of OSIG's Snow Removal Audit. The following audit testing was performed with immaterial, if any, discrepancies noted:

- Determined that AVL is used during the snow events mostly to research and respond to idle alerts and to locate trucks, including re-routing trucks to respond to deteriorating road conditions during the snow events. Management finds this use of the AVL valuable.
- Determined that AHQs were conducting operations in accordance with the most current Form M-41.

Based on the results and findings of the audit test work conducted of snow removal, OSIG concluded that internal controls, as they relate to the audit objectives, were operating properly except as identified in the report findings.

APPENDIX I - MANAGEMENT CORRECTIVE ACTION PLAN

RECOMMENDATION	CORRECTIVE ACTION	DELIVERABLE	ESTIMATED COMPLETION DATE	RESPONSIBLE POSITION
#1. VDOT needs to find a balance between having sufficient resources and working with acceptable levels of risk. VDOT might need to consider options such as using state employees from other agencies who have commercial driver's licenses or training VDOT staff who do not operate equipment as part of their normal job to operate equipment during snow events. As this is a multifaceted issue, OSIG offers facilitating a post-audit brainstorming session with VDOT representatives to address this matter.	<p>VDOT accepts OSIG's offer to facilitating a post-audit brainstorming session.</p> <p>A meeting will be held to include a VDOT statewide stakeholder group with OSIG to review current contractual requirements and brainstorm for potential solutions and review of risks.</p>	Minutes of the meeting(s) that may include action plans, if identified during the meetings.	12/1/2022	Maintenance Division Administrator/Assistant Maintenance Division Administrator
#2. Insurance documentation confirming coverage for	The Maintenance Division will remind	A reminder email will be sent to the	9/1/2022	Maintenance Division Administrator/Assistant

<p>specific snow removal equipment should be obtained, verified and placed in the Severe Weather Application System prior to equipment being placed in service.</p>	<p>the District Maintenance Engineers and Infrastructure Managers of the requirements to confirm coverage for snow removal equipment prior to being placed in service.</p> <p>The Maintenance Division will conduct a random sample review of each District's M7B.</p>	<p>Districts as well as discussed at the District Maintenance Engineer meeting.</p> <p>Random sample results will be provided to each District.</p>	<p>12/15/2022</p>	<p>Maintenance Division Administrator</p>
<p>#3. Consideration should be given to leveraging the existing AVL technology to verify equipment is the same as inspected, then conducting physical checks on a random basis to supplement the electronic verification. As this is a multifaceted issue with no simple answer, OSIG is willing to facilitate a post-audit brainstorming session</p>	<p>VDOT accepts OSIG's offer to facilitating a post-audit brainstorming session.</p> <p>A meeting will be held to include a VDOT statewide stakeholder group with OSIG to review existing AVL and processes and brainstorm for</p>	<p>Minutes of the meeting(s) that may include action plans, if identified during the meetings.</p>	<p>12/1/2022</p>	<p>Maintenance Division Administrator/Assistant Maintenance Division Administrator</p>

with VDOT representatives to address this matter.	potential solutions.			
#4. The Maintenance Division or district should update the Winter Operations Team Site or another newly developed central repository with the new versions of Form M-41 after approval by the residencies.	The Maintenance Division will remind the District Maintenance Engineers and Infrastructure Managers of the requirements to update the M-41 of any changes throughout the season.	A reminder email will be sent to the Districts as well as discussed at the District Maintenance Engineer meeting.	9/1/2022	Maintenance Division Administrator/Assistant Maintenance Division Administrator