Office of the Auditor General
Performance Audit Report

Vehicle Fleet and Equipment Management
Michigan Department of Transportation

February 2025

State of Michigan Auditor General
Doug A. Ringler, CPA, CIA

The auditor general shall conduct post audits of financial transactions and accounts of the state and of all branches, departments, offices, boards, commissions, agencies, authorities and institutions of the state established by this constitution or by law, and performance post audits thereof.

The auditor general may make investigations pertinent to the conduct of audits.

Article IV, Section 53 of the Michigan Constitution

Performance Audit

Vehicle Fleet and Equipment Management

Michigan Department of Transportation (MDOT)

Report Number:
591-0415-24

Released:
February 2025

MDOT's Bureau of Field Services, Transportation Systems Management and Operations (TSMO) Division, oversees the department's vehicle and equipment fleet and collaborates with MDOT bureaus, divisions, central and region offices, and transportation service centers (TSCs) to ensure MDOT has the necessary vehicles and equipment to achieve its mission of serving and connecting people, communities, and the economy through transportation. TSMO Division, Fleet Services, provides oversight and guidance to the 7 region offices, 22 TSCs, and 44 garages and repair facilities throughout the State. MDOT's Bureau of Finance and Accounting, Financial Operations Division, is responsible for ensuring capital assets are entered correctly in the Statewide Integrated Governmental Management Applications (SIGMA) as well as ensuring the year-end capital asset certification is complete. MDOT's fleet is made up of approximately 2,300 light-, medium-, and heavy-duty vehicles and approximately 3,000 units of equipment.

Audit Objective	Conclusion
Objective 1: To assess the sufficiency of MDOT's monitoring of its vehicle fleet and equipment.	Sufficient, with exceptions

Findings Related to This Audit Objective	Material Condition	Reportable Condition	Agency Preliminary Response
MDOT did not sufficiently monitor 29% of sampled vehicle travel logs for employees driving State-owned vehicles (Finding 1).	X		Agrees
Vehicle use was underreported for 12 (27%) of 44 light-duty vehicles and for 5 (20%) of 25 medium- and heavy-duty vehicles (Finding 2).		X	Agrees
Preventive maintenance was not timely completed for 828 (20%) of 4,047 vehicle and equipment units, and 71 (59%) of 120 sampled preparedness inspections were not documented (Finding 3).		X	Agrees

Audit Objective	Conclusion
Objective 2: To assess the effectiveness of selected security and access controls over the M5 system.	Moderately effective

Findings Related to This Audit Objective	Material Condition	Reportable Condition	Agency Preliminary Response
MDOT lacked effective processes for granting and removing access, annually recertifying appropriateness of users' roles and permissions, and ensuring the appropriateness of security configuration settings in the M5 system (Finding 4).		X	Agrees

Audit Objective	Conclusion
Objective 3: To assess the effectiveness of MDOT's vehicle fleet and equipment acquisition and disposal process.	Effective

Findings Related to This Audit Objective	Material Condition	Reportable Condition	Agency Preliminary Response
None reported.	Not applicable.		

Audit Objective	Conclusion
Objective 4: To assess the sufficiency of MDOT's efforts to monitor State fuel and procurement card purchases.	Sufficient

Findings Related to This Audit Objective	Material Condition	Reportable Condition	Agency Preliminary Response
None reported.	Not applicable.		

February 19, 2025

Michael D. Hayes, Chair
State Transportation Commission
and
Bradley C. Wieferich, PE, Director
Michigan Department of Transportation
Murray D. Van Wagoner Building
Lansing, Michigan

Chair Hayes and Director Wieferich:

This is our performance audit report on Vehicle Fleet and Equipment Management, Michigan Department of Transportation.

We organize our findings and observations by audit objective. Your agency provided preliminary responses to the recommendations at the end of our fieldwork. The *Michigan Compiled Laws* and administrative procedures require an audited agency to develop a plan to comply with the recommendations and to submit it to the State Budget Office upon completion of an audit. Within 30 days of receipt, the Office of Internal Audit Services, State Budget Office, is required to review the plan and either accept the plan as final or contact the agency to take additional steps to finalize the plan.

We appreciate the courtesy and cooperation extended to us during this audit.

Sincerely,

Doug Ringler
Auditor General

TABLE OF CONTENTS

VEHICLE FLEET AND EQUIPMENT MANAGEMENT

AUDIT OBJECTIVES, CONCLUSIONS, FINDINGS, AND OBSERVATIONS

MONITORING OF VEHICLE FLEET AND EQUIPMENT

BACKGROUND

The Michigan Department of Transportation (MDOT) monitors its vehicle fleet and equipment using key performance metric reports, including asset utilization*, availability* and downtime*, recommended replacement*, scheduled and unscheduled repairs, and preventive maintenance*. These metrics aid in decision-making when operating and managing the fleet and when purchasing replacement assets to ensure the fleet is sufficient to meet MDOT's mission* of serving and connecting people, communities, and the economy through transportation.

MDOT monitors utilization for owned and leased vehicles and equipment using pertinent data sources including the Statewide Integrated Governmental Management Applications* (SIGMA), M5 system* (M5), fuel usage reports, and vehicle travel logs. Also, MDOT monitors owned and leased vehicle usage through biweekly travel logs submitted by the drivers. The driver's supervisor reviews the travel logs to ensure vehicle use is reasonable and appropriate for State business and then submits the travel logs to the Financial Operations Division (FOD) for final review.

Another component of the metrics is maintenance services, which include, but are not limited to, preventive maintenance and preparedness inspections. MDOT's:

- Preventive maintenance includes Type A* and Type B* services and commercial motor vehicle (CMV) inspections:

    o Type A services include items such as oil changes, fluid level checks, and tire pressure checks.

    o Type B services include items such as visual inspections to check lights, safety equipment, windows, and mirrors.

    o CMV inspections are annual inspections for CMVs or trailers over 10,000 pounds and include checks of the brake system, exhaust system, fuel system, lighting devices, steering mechanism, suspension, frame, tires, and windshield wipers, as applicable.

    Type A and B services vary based on the type of vehicle or equipment, as well as the required interval for maintenance.

- Preparedness inspections occur each fall and spring to help ensure its vehicle fleet and equipment are ready for the upcoming season.

See glossary at end of report for definition.

AUDIT OBJECTIVE	To assess the sufficiency of MDOT's monitoring of its vehicle fleet and equipment.

CONCLUSION Sufficient, with exceptions.

FACTORS IMPACTING CONCLUSION

- MDOT participates in a national program to exchange ideas on best practices for fleet management.

- MDOT utilizes key performance metrics to monitor and make decisions regarding its fleet.

- Material condition* related to improving the monitoring of vehicle travel logs (Finding 1).

- Two reportable conditions* related to recording vehicle usage and preventive maintenance and preparedness inspections (Findings 2 and 3).

See glossary at end of report for definition.

FINDING 1

Improvements needed for monitoring vehicle travel logs.

MDOT did not ensure vehicle travel logs were reviewed and maintained for all vehicles. Without reviewing travel logs, MDOT cannot ensure the vehicles were used for State business.

MDOT policy mandates employees assigned certain State vehicles annually to complete a travel log and vehicle assignment verification form. By signing the form, the employee attests to operate the State vehicle in accordance with MDOT's motor vehicle usage guidelines and to submit travel logs each biweekly pay period. The form requires different MDOT levels of approval, depending on the nature of the work assignment. Travel logs must be submitted for all light-duty and select medium-duty vehicles for review and approval by the driver's supervisor, who assesses the reasonableness of vehicle activity. FOD is responsible for ensuring the travel logs are complete.

> MDOT did not have a travel log and vehicle assignment verification form for 65% of sampled vehicles.

Our sample of 55 light-duty to medium-duty vehicles noted MDOT did not have, as applicable:

a. The assigned driver's travel log and vehicle assignment verification form for 35 (65%) of 54 sampled vehicles. For the 19 forms on file, 2 (11%) did not have the appropriate approvals.

b. Travel logs for 70 (29%) of the 244 pay periods reviewed. Out of 174 available travel logs, 16 (9%) were not properly approved.

MDOT informed us this is primarily due to employee turnover and a breakdown in knowledge transfer.

We consider this finding to be a material condition based on the significance of the exception rates identified and MDOT's inability to obtain the travel logs in order to complete compliance reviews and ensure the vehicles were used for appropriate business purposes.

RECOMMENDATION

We recommend MDOT ensure vehicle travel logs are reviewed and maintained for all vehicles.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT agrees with the recommendation.

MDOT is in the process of reviewing its travel log and vehicle assignment verification procedures, forms, processes, and associated monitoring and oversight activities, and will incorporate any needed updates with statewide coordination and implementation by September 30, 2025.

FINDING 2

Improvements needed for vehicle usage recording process.

MDOT needs to improve its process for recording vehicle usage in SIGMA and M5. Doing so will allow MDOT to accurately assess its fleet utilization and replacement needs and maximize the usage costs charged to MDOT activities and projects.

For the light-duty fleet, MDOT policy requires employees to report 80 hours of vehicle usage per pay period in SIGMA (which is at least 2,080 hours per fiscal year and 1,040 hours per fiscal year for seasonal vehicles), whether or not the vehicle is driven 80 hours in a pay period. Medium- and heavy-duty vehicles require usage to be reported at the actual number of hours the unit* was in use or committed to a project and is subsequently unavailable for another use.

Vehicle usage is entered into M5 based on information downloaded from the vendors' fuel system. When a fuel purchase commences, the hours/mileage are recorded at the pump and are tracked for each vehicle in MDOT's fleet. MDOT regularly downloads all vendor transactions for the last 90 days and updates M5 with the vehicle usage data to allow MDOT to assess its fleet utilization and determine future fleet replacement needs.

We reviewed recorded vehicle usage in SIGMA. Also, we compared vehicle usage recorded in M5 with the vendor purchase activity reports. Our review noted MDOT did not:

a. Properly record light-duty vehicle (MDOT owned and leased) usage in SIGMA for 12 (27%) of 44 vehicles in fiscal year 2023. For the 12 vehicles, 15,631 usage hours were not reported, resulting in at least $10,742 of underreported vehicle usage charges. Although the vehicle charges were low, this was for a sample of vehicles.

b. Record medium- and heavy-duty vehicle usage in SIGMA for 5 (20%) of 25 vehicles. MDOT determines hours for these vehicles when an employee reports the actual vehicle usage hours in SIGMA. Because actual usage hours were not recorded in SIGMA, we cannot calculate the vehicle usage charges associated with the vehicles' use or time committed to a project.

c. Properly record vehicle usage in M5 for 16 (33%) of 48 light- (MDOT owned), medium-, or heavy-duty vehicles. We reviewed a total of 174 applicable months of vehicle usage and noted 29 (17%) months did not have accurate usage recorded.

MDOT informed us this is partially due to the inability to obtain and generate usage reports with the transition to SIGMA and due to staff turnover and competing priorities following the COVID-19* pandemic.

See glossary at end of report for definition.

RECOMMENDATION   We recommend MDOT improve its process for recording usage in SIGMA and M5.

AGENCY PRELIMINARY RESPONSE   MDOT provided us with the following response:

MDOT agrees with the recommendation.

MDOT participates and is a leader in the national fleet performance metric initiative with utilization being a key metric. While SIGMA is the primary data source for recording utilization, M5 is one of several tools and metrics MDOT uses in its monitoring and oversight efforts to assess fleet utilization and replacement needs. During the pandemic, due to other critical and essential priorities, resources and functions in the fleet arena needed to be shifted, and in some cases, paused. Post pandemic, MDOT is in the process of reviewing its vehicle and equipment usage reporting process, procedures, and associated monitoring and oversight activities, and will incorporate any needed updates by June 2025 with statewide coordination and implementation by September 30, 2025.

FINDING 3

Improvements needed for vehicle and equipment preventive maintenance and preparedness inspections policies and procedures.

MDOT needs to improve its policies and procedures for completing and documenting vehicle and equipment preventive maintenance and preparedness inspections to ensure its assets are functioning properly and are available for use.

Title 49, Part 396, section 3 of the *Code of Federal Regulations* (CFR)* requires MDOT to inspect, repair, and maintain vehicles and equipment under its control. Also, the *CFR* requires MDOT to inspect CMVs annually. MDOT's established time intervals for Type A services are every 250 usage hours or 365 days and Type B services are every 500 usage hours.

MDOT conducts preventive maintenance on vehicles for items such as oil changes, tire pressure checks, and visual inspections of lights. Preparedness inspections are completed at MDOT garages each fall and spring on vehicles and equipment which are considered most critical to support MDOT's mission and in preparation for the winter and summer seasons and associated operations.

We reviewed preventive maintenance documentation to determine the timeliness and completion of jobs. We also conducted site visits at 9 MDOT locations and requested the preparedness inspection documentation for units included for 3 semiannual preparedness inspection periods covering winter 2022-23, spring 2023, and winter 2023-24. For the 3 semiannual periods, MDOT held a total of 74 preparedness inspections. We reviewed 67 units included in one or more of the respective region or bureau preparedness inspections and noted MDOT did not:

a. Complete or document it completed various preventive maintenance jobs within the established time interval for 828 (20%) of 4,047 vehicle and equipment units, with a total of 1,016 overdue maintenance services. As of June 27, 2024, services ranged from 16 days to 26 years overdue. Specifically:

Service Type	Number (Percentage) of Services Overdue	Total Number of Services	Range of Days to Years Overdue
Type A	354 (22%)	1,605	20 days to 11 years
Type B*	423 (11%)	3,869	20 days to 26 years
CMV	225 (13%)	1,745	16 days to 4 years
Other	9 (5%)	177	70 days to 4 years
Total	1,011 (14%)	7,396	16 days to 26 years

* We did not include 5 overdue maintenance services for 5 pieces of equipment in the table above because the average years overdue is greater than 47 years and would not be an objective representation of the remaining vehicles and equipment.

* See glossary at end of report for definition.

b. Complete or document it completed the preventive maintenance services for 4 (10%) of 41 sampled units.

MDOT informed us for part a., it did not always maintain records of the service being completed and for parts a. and b., timeliness was impacted by staff changing positions, equipment being in use while the preventive maintenance interval occurred, supply chain issues, and higher priority repairs.

c. Maintain preparedness inspection documentation for 41 (61%) of the 67 units, which represents a total of 71 (59%) undocumented inspections out of the 120 scheduled to take place. Specifically:

Region or Bureau	Number of Sample Units Selected	Number (Percentage) of Inspections With No Documentation	Number of Inspections With Documentation	Total Number of Scheduled Inspections
Bay	12	0 (0%)	23	23
BOBS[1]	7	11 (100%)	0	11
Grand	4	5 (83%)	1	6
Metro	9	9 (56%)	7	16
North[2]	8	7 (54%)	6	13
Southwest	13	14 (58%)	10	24
Superior	8	14 (93%)	1	15
University	6	11 (92%)	1	12
Total	67	71 (60%)	49	120

[1] Bureau of Bridges and Structures.
[2] Indicates two locations were visited in the region. One location had no sample units to review.

d. Complete a work order for 3 (13%) of 23 inspections with noted maintenance issues to be addressed from the 49 documented preparedness inspections.

Although not required, MDOT completes these inspections as part of its long-standing protocol and best practice to prepare, reinforce, and communicate the importance of the functionality, safety, and readiness of the most critical vehicles and equipment in its fleet. As such, MDOT should formalize its protocol and best practice process and document its preparedness inspections.

For parts c. and d., MDOT informed us there are no requirements to maintain the preparedness inspection checklists because these inspections are a best practice and biannual events held at MDOT garages for a portion of the fleet with the objective of collaborating, aligning, and communicating the importance of readiness and safety of the MDOT fleet.

RECOMMENDATION We recommend MDOT improve its policies and procedures for completing and documenting vehicle and equipment preventive maintenance and preparedness inspections.

AGENCY PRELIMINARY RESPONSE MDOT agrees with the recommendation. Given the length of MDOT's preliminary response, the response and our auditor's comments to Finding 3 are presented on page 24.

SELECTED SECURITY AND ACCESS CONTROLS OVER THE M5 SYSTEM

BACKGROUND

M5 is MDOT's asset management system which maintains information for its vehicle fleet and equipment assets. M5 tracks work orders, preventive maintenance schedules, significant performance metrics, and vehicle and equipment usage. As of May 14, 2024, M5 had 165 active privileged and non-privileged users.

Security controls are the management, operational, and technical controls designed to protect the availability, confidentiality*, and integrity* of a system and its information.

Access controls* limit or detect inappropriate access to computer resources, thereby protecting the resources from unauthorized modification, loss, and disclosure. For access controls to be effective, they should be properly authorized, implemented, and maintained.

AUDIT OBJECTIVE

To assess the effectiveness* of selected security and access controls over M5.

CONCLUSION

Moderately effective.

FACTORS IMPACTING CONCLUSION

- A few security configuration parameters were implemented in M5 in accordance with State of Michigan (SOM) technical standards.

- MDOT established and implemented some procedures related to user account authorization in accordance with State policies and standards.

- One reportable condition related to improving security and access controls (Finding 4).

See glossary at end of report for definition.

FINDING 4

Improvements needed for security and access controls over M5.

MDOT did not fully establish and implement security and access controls over M5, which could lead to unauthorized additions, modifications, or the deletion of MDOT assets.

Our review of M5 noted MDOT did not:

a. Ensure access was granted based on the principle of least privilege*. Specifically:

    (1) The access forms for all 165 active users did not require the user to list the level of access requested.

    (2) Inappropriate access to M5 privileged functions was granted to 5 (3%) of 159 active non-privileged users. Subsequent to our review, MDOT removed the privileged functions from the non-privileged users.

b. Document M5 access was requested and approved for 20 (91%) of 22 sampled active user accounts. M5 did not reflect the date user access was created/granted, and MDOT did not implement access forms until February 2023. Therefore, there is no access request documentation prior to this date.

In relation to parts a. and b., SOM Technical Standard 1340.00.20.01 requires State agencies to establish a process to control and document the assignment of access rights based on current job responsibilities and the principle of least privilege.

c. Implement an effective process to remove user access. One (5%) of 21 sampled active user accounts belonged to an employee who left State employment. Subsequent to our review, MDOT removed the user's access.

SOM technical standards state the agency is responsible for maintaining documentation of authorized users from the initial request to the de-registration of users who no longer require access to SOM protected IT resources. Also, agencies are required to timely disable or delete user accounts.

MDOT informed us it periodically cross-checks M5 users against terminated MDOT employees.

d. Configure M5 to automatically disable user accounts after 60 days of inactivity. Twenty (12%) of 165 active users had not logged in for at least 60 days. One (1%) of 165 active users had never logged in after account creation,

See glossary at end of report for definition.

which was greater than 60 days from the date of our review. Further, we were unable to determine if MDOT deactivated users timely after access was no longer required, because M5 does not record a deactivation date.

SOM Technical Standard 1340.00.020.01 requires an information system to automatically disable user accounts after 60 days of inactivity.

MDOT informed us it periodically performs a manual review to disable users who have been inactive for at least one year; however, the review is not documented.

e. Complete semiannual and annual recertifications for all M5 active users. We noted MDOT did not perform recertifications for all 165 M5 active user accounts during the audit period, which includes reviewing the appropriateness of user roles and permissions.

SOM Technical Standard 1340.00.020.01 requires a review of accounts to verify they are still required through a semiannual certification of privileged accounts and annual certification of all other accounts. Also, the Standard requires the agency to periodically reevaluate the access privileges granted to users and to include whether currently enabled access privileges are still necessary to perform the user's current job duties.

MDOT informed us it periodically receives a list of employees who have left MDOT employment and removes user access based on these lists. However, the reviews are not documented and, further, do not include a review of roles and privileges for users who are still employed by MDOT.

f. Monitor the activity of privileged users, which includes the granting, changing, and deleting of user access and adding, modifying, or deleting asset records.

SOM Technical Standard 1340.00.020.01 requires the information system to audit the execution of privileged functions, thus detecting misuse, and in doing so helps mitigate the risk from insider threats.

MDOT informed us this activity was not prioritized to align with the SOM technical standards.

g. Ensure M5 security configurations aligned with SOM technical standards. Because of the confidentiality of these configurations, we did not include the results in this finding. Instead, we provided the detailed results to MDOT management.

MDOT informed us it has not updated the M5 settings to align with SOM technical standards.

RECOMMENDATION

We recommend MDOT fully establish and implement effective security and access controls over M5.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT agrees with the recommendation. MDOT has implemented effective security and access controls over the M5 system, and items a. through e. and item g. were implemented by or before February 2025. Regarding item f. (privileged user access and asset records), because M5 is a commercial off-the-shelf solution, MDOT does not own the source code and cannot perform this functionality. By March 31, 2025, MDOT will coordinate with the vendor to discuss the feasibility of this functionality. Depending on the financial and operational implications, as well as the limited risk exposure, if a system enhancement is not feasible, MDOT will seek Technical Review Board exception approval by April 30, 2025.

ACQUISITION AND DISPOSAL PROCESS

BACKGROUND

Each fiscal year, MDOT's Fleet Services, Transportation Systems Management and Operations (TSMO) Division, collects vehicle and equipment purchase requests from each MDOT bureau and central and region office. The purchase requests are reviewed and prioritized on a Statewide basis. For approved requests, MDOT uses existing Department of Technology, Management, and Budget (DTMB) contracts or submits specifications to DTMB for centralized purchasing services, as outlined in Section 18.1261 of the *Michigan Compiled Laws* (Public Act 431 of 1984, as amended). DTMB then establishes a Statewide contract for MDOT's vehicle and equipment purchases in accordance with the SOM Procurement Policy Manual.

Occasionally, MDOT requires specialized or unique equipment not covered by a Statewide contract. When this happens, MDOT's Contract Services Division (CSD) follows the SOM Procurement Policy Manual to establish a contract and make the purchase. CSD has delegated purchasing and statutory authority.

Once purchased, MDOT coordinates with the vendor to obtain the vehicle or equipment. MDOT then completes any necessary upfit*, tags the unit with a unique identifier, and informs FOD, which records the asset in SIGMA.

Also, Fleet Services identifies when vehicles and equipment need to be disposed of, based on unit condition, age, usage, and other factors. Fleet Services indicates the unit is ready for disposal in M5 and works with DTMB to dispose of the unit in accordance with Section 18.1267 of the *Michigan Compiled Laws*. DTMB notifies MDOT when the unit is sold, Fleet Services updates the disposal information in M5, and FOD enters the disposal information in SIGMA to remove the unit from MDOT's accounting records.

AUDIT OBJECTIVE

To assess the effectiveness of MDOT's vehicle fleet and equipment acquisition and disposal process.

CONCLUSION

Effective.

FACTORS IMPACTING CONCLUSION

- Confirmed the existence of 98% of sampled units during site visits to 9 MDOT locations.

- 98% of units reviewed during site visits to 9 MDOT locations were properly recorded in M5.

- Sampled units purchased during the audit period materially complied with MDOT's procurement process.

- Sampled units disposed of during the audit period complied with MDOT's disposal process.

* See glossary at end of report for definition.

MONITORING OF STATE FUEL AND PROCUREMENT CARD PURCHASES

BACKGROUND

MDOT employees use procurement and fuel cards to purchase vehicle fleet and equipment related items and fuel for MDOT fleet vehicles, respectively. Authorized procurement cardholders must comply with the policies and procedures established in the DTMB Administrative Guide and MDOT's Procurement Card Program manual. Also, MDOT employees who use fuel cards must comply with DTMB's Vehicle and Travel Services Driver Reference Guide. MDOT contracts with a vendor to administer fuel cards for its vehicle fleet.

During our audit period, there were 26,538 vehicle fleet and equipment related procurement transactions totaling $14.5 million and 1,223 fuel card payment transactions totaling $8.4 million.

AUDIT OBJECTIVE

To assess the sufficiency of MDOT's efforts to monitor State fuel and procurement card purchases.

CONCLUSION

Sufficient.

FACTORS IMPACTING CONCLUSION

- All procurement and fuel card transactions sampled complied with policies for allowable purchases and had sufficient supporting documentation and approvals.

- All procurement card cycle reports sampled were reviewed and monitored by MDOT.

- Non-fuel purchase reports sampled for unallowable fuel card purchases were reviewed and monitored by MDOT.

SUPPLEMENTAL INFORMATION

VEHICLE FLEET AND EQUIPMENT MANAGEMENT
Michigan Department of Transportation

Vehicle Fleet Statistics
As of June 12, 2024

		Average Per Unit	
Vehicle Unit Type	Number of Vehicle Units	Unit Age in Years	Number of Miles*
Light-Duty - Leased	769	5	47,721
Light-Duty - Owned	534	13	121,003
Medium-Duty	351	11	94,769
Heavy-Duty	615	13	90,558
Total	2,269	11	88,513

 * Odometer miles recorded over the life of the vehicle.

Source: The OAG created this exhibit using M5 data and information provided by MDOT.

VEHICLE FLEET AND EQUIPMENT MANAGEMENT
Michigan Department of Transportation

Equipment Statistics
As of June 12, 2024

Equipment Unit Type	Number of Equipment Units	Average Unit Age in Years
Aerial equipment	87	13
Attenuator	82	12
ATV and snowmobiles	13	11
Auger truck mounted	14	18
Blaster	19	27
Boat	1	6
Chipper stump/brush	35	17
Compressor	105	19
Concrete mixer	13	38
Concrete saw	9	14
Electric welder	20	21
Excavator	10	9
Forklift	168	13
Generator	42	16
Grader	23	32
Grinder	10	18
Heater	79	14
Hook loader attachment	47	4
Hydraulic crane	28	19
Message boards	275	18
Mower	81	16
Outboard engine	7	27
Portable traffic signal	46	11
Pressure sprayer/tanker trailer	34	21
Roller	6	30
Sewer rodder	11	19
Snowplow	866	17
Spreader	252	14
Sweeper	30	13
Tractor	151	23
Tractor attachment	102	13
Trailer	290	21
Total	2,956	18

Source: The OAG created this exhibit using M5 data and information provided by MDOT.

AGENCY PRELIMINARY RESPONSE

<u>VEHICLE FLEET AND EQUIPMENT MANAGEMENT</u>
Michigan Department of Transportation

<u>Finding 3 Agency Preliminary Response and Auditor's Comments to Agency Preliminary Response</u>

This section contains MDOT's preliminary response to Finding 3 and our auditor's comments providing further clarification and context where necessary.

> **Finding 3:** Improvements needed for vehicle and equipment preventive maintenance and preparedness inspections policies and procedures.

MDOT provided us with the following response:

AGENCY PRELIMINARY RESPONSE	AUDITOR'S COMMENTS TO AGENCY PRELIMINARY RESPONSE
MDOT agrees with the recommendation. Since 2010, MDOT participates and is a leader in the national fleet performance metric initiative through the American Association of State Highway Transportation Officials (AASHTO) and AASHTO's Equipment Management Technical Services Program (EMTSP), and in 2017, MDOT was recognized by AASHTO's Subcommittee on Maintenance for superior effort, dedication, and success of fleet performance metrics and the Fleet Performance Metrics Committee. MDOT was also named to the "100 Best Fleets in the Americas" for seven consecutive years from 2016 to 2022 in large part due to its priority on fleet performance metrics and its monitoring, oversight, and administration of the MDOT vehicle and equipment fleet.	The information provided is outside the audit period, and therefore, the OAG did not validate and conclude on this information.
During the pandemic, due to other critical and essential priorities, resources and functions in the fleet arena needed to be shifted, and in some cases, paused. With respect to preventive maintenance (PM) services, MDOT's priority is on light, medium, and heavy-duty vehicles and trucks that are on the road and have the most impact on the traveling public. Prior to the pandemic, MDOT aligned with PM schedules for these vehicle types on average more than 95% of the time, and for Commercial Motor Vehicles on average more than 98% of the time. Post pandemic, MDOT will continue to prioritize PM services for these vehicle types as well as enhance PM services for other pertinent fleet inventory assets.	The information provided is outside of the audit period, and therefore, the OAG did not validate or conclude on this information.
	In June 2021, the state of emergency executive orders related to the COVID-19 pandemic were rescinded; however, since that time, MDOT did not prioritize PM services for its vehicle fleet or other pertinent inventory assets.
In addition, with respect to inspections and in alignment with the fleet performance metric initiative, MDOT has had a robust process and procedure in place since 2014 that requires pre- and post-trip, commercial vehicle, and periodic inspections, which incorporate PM services and schedules. However, MDOT's inspection procedures do not incorporate the bi- annual preparedness inspection events. This is because these inspection events are geared and focused on the department's priority and commitment in communicating and collaborating on the importance of statewide preparedness for the upcoming winter and construction seasons on behalf of the citizens of the state and the safety of traveling public. As such, the preparedness inspections are more of a visual inspection with abbreviated checklists and include key presentations and safety messages aligning with MDOT's public and media	We did not include pre- and post-trip inspections because they are completed by the driver and not an MDOT mechanic or qualified vendor. Included in our scope were the commercial motor vehicle (CMV) and periodic inspections.
	MDOT acknowledges the importance of the "inspection events" but has not incorporated them into its policies and procedures to require preparedness inspections be completed or documented.
	These checklists contain two comprehensive pages of inspection items related to the vehicle's working condition and include **both** visual and physical inspection to ensure driver safety.

communications while also serving as an important precursor and reinforcement for the required inspections that take place throughout the year. Post pandemic, MDOT plans to reinstate the preparedness inspection process that was paused during the pandemic.

MDOT will review, update, and finalize its inspection and preventive maintenance processes, procedures, and associated monitoring and oversight activities by September 30, 2025.

"Key presentations and safety messages aligning with MDOT's public and media communications while also serving as an important precursor and reinforcement for the required inspections that take place throughout the year" do not contribute to completing and documenting preparedness inspections.

No pandemic-related restrictions currently exist; therefore, it is unclear why MDOT's corrective actions will be made "post-pandemic." The three semiannual preparedness inspection periods we reviewed covered winter 2022-23, spring 2023, and winter 2023-24 and were clearly post-pandemic.

We considered the agency response and based on our comments above, the finding stands as written.

DESCRIPTION

MDOT was organized under Sections 16.450 - 16.458 of the *Michigan Compiled Laws* (sections of the Executive Organization Act of 1965). The State Transportation Commission establishes policy for MDOT and is made up of six members who are appointed by the Governor with the advice and consent of the Senate. The MDOT director, who is appointed by the Governor, is responsible for administering and executing the policies established by the State Transportation Commission. MDOT's mission is serving and connecting people, communities, and the economy through transportation.

Section 18.1213 of the *Michigan Compiled Laws* (Public Act 431 of 1984, as amended) grants MDOT the authority to maintain its own vehicle fleet and garage operations. MDOT's Bureau of Field Services, TSMO Division, oversees the department's vehicle fleet and equipment and collaborates with MDOT bureaus, divisions, central and region offices, and TSCs to ensure MDOT has the necessary vehicles and equipment to achieve its mission. Fleet Services provides oversight and guidance to MDOT's bureaus, divisions, central offices, and the 7 region offices, 22 TSCs, and 44 garages and repair facilities throughout the State. FOD is responsible for ensuring assets are entered correctly into SIGMA and completing the year-end asset certification.

MDOT's fleet is made up of approximately 2,300 light-, medium-, and heavy-duty vehicles, including trucks, snowplows, winter maintenance trucks, passenger cars, and full-size vans and approximately 3,000 units of equipment including excavators, mowers, message boards, generators, and other items (see Exhibits 1 and 2).

Between October 1, 2022 and June 30, 2024, MDOT expended $67.4 million related to its vehicle fleet and equipment.

AUDIT SCOPE, METHODOLOGY, AND OTHER INFORMATION

AUDIT SCOPE

To examine the records and processes related to the management of MDOT's vehicle fleet and equipment. We conducted this performance audit* in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

As part of the audit, we considered the five components of internal control* (control environment, risk assessment, control activities, information and communication, and monitoring activities) relative to the audit objectives and determined all components were significant.

PERIOD

Our audit procedures, which included a preliminary survey, audit fieldwork, report preparation, analysis of agency responses, and quality assurance, generally covered October 1, 2022 through June 30, 2024.

METHODOLOGY

We conducted a preliminary survey to gain an understanding of MDOT's vehicle fleet and equipment management to establish our audit objectives, scope, and methodology. During our preliminary survey, we:

- Interviewed MDOT management and staff to obtain an understanding of their roles and responsibilities.

- Reviewed applicable federal requirements and State laws, policies, procedures, and manuals related to vehicle fleet and equipment.

- Reviewed State Transportation Commission meeting minutes.

- Obtained an understanding of MDOT's key processes and internal control significant to potential audit.

- Reviewed asset and expenditure data between October 1, 2022 and June 30, 2024.

- Analyzed SIGMA and M5 active fleet asset data to ensure reliability and completeness.

- Analyzed high-risk assets under the capitalization thresholds in the State of Michigan Financial Management Guide (Part II, Chapter 21, Section 100).

See glossary at end of report for definition.

- Compiled the number of units and average age and number of miles and hours, as applicable, for MDOT vehicles and equipment (see Exhibits 1 and 2).

OBJECTIVE 1   To assess the sufficiency of MDOT's monitoring of its vehicle fleet and equipment.

To accomplish this objective, we:

- Reviewed the processes and procedures related to vehicle fleet and equipment monitoring, including vehicle usage, travel logs, and maintenance.

- Interviewed Fleet Services staff to gain an understanding of the significant metrics MDOT monitors.

- Randomly sampled 25 of 766 MDOT-leased light-duty vehicles, 25 of 414 MDOT-owned light-duty vehicles, and 5 of 319 MDOT medium-duty vehicles in M5 as of May 14, 2024. We then randomly sampled 5 of 45 biweekly periods between October 1, 2022 and June 30, 2024 to determine whether:

    o   Drivers submitted biweekly travel logs.

    o   Supervisors reviewed biweekly travel logs.

    o   FOD approved the reviewed biweekly travel logs.

- Randomly sampled 25 of 766 MDOT-leased vehicles in M5 as of May 14, 2024 to determine whether usage hours were recorded in SIGMA at 2,080 hours per year and 1,040 hours per year for seasonal vehicles.

- Randomly sampled 25 of 414 MDOT-owned light-duty vehicles in M5 as of May 14, 2024 to determine whether the appropriate usage hours were recorded in SIGMA.

- Randomly sampled 25 of 806 MDOT medium- and heavy-duty vehicles in M5 as of May 14, 2024 to determine whether usage hours were recorded in SIGMA and M5.

- Randomly sampled 41 of 4,047 MDOT vehicles and equipment in M5 as of June 27, 2024 to determine if preventive maintenance was performed.

- Determined the number of vehicle and equipment units with overdue preventive maintenance as of June 27, 2024.

- Judgmentally sampled 9 of 73 MDOT locations and reviewed completed preparedness inspection checklists for 3 consecutive semiannual periods between October 2022 and March 2024.

Our random samples were selected to eliminate any bias and enable us to project the results to the respective populations. Our judgmental samples were selected based on risk and proximity; therefore, we could not project the results to the respective populations.

OBJECTIVE 2

To assess the effectiveness of selected security and access controls over M5.

To accomplish this objective, we:

- Interviewed MDOT's management and staff to obtain an understanding of implemented security and access controls.

- Tested select security and access controls against SOM policy and industry best practices.

- Randomly and judgmentally sampled 22 of 165 active M5 users as of May 14, 2024 to determine if MDOT granted, removed, and recertified users' access according to SOM technical standards.

- Reviewed 160 active M5 users as of May 14, 2024 to determine whether the users were current MDOT employees recorded in the Human Resources Management Network* (HRMN).

- Reviewed last log-in dates for all 165 active accounts in M5 as of May 14, 2024 to verify user accounts were disabled after 60 days of inactivity.

Our random samples were selected to eliminate any bias and enable us to project the results to the respective populations. Our judgmental samples were selected based on risk; therefore, we could not project the results to the respective populations.

OBJECTIVE 3

To assess the effectiveness of MDOT's vehicle fleet and equipment acquisition and disposal process.

To accomplish this objective, we:

- Interviewed MDOT's management and staff to gain an understanding of the processes for acquiring, tagging, and disposing of fleet assets.

See glossary at end of report for definition.

- Randomly and judgmentally sampled 25 of 307 assets purchased through a Statewide DTMB contract between October 1, 2022 and June 30, 2024 to determine whether:

  o The TSMO Division approved the purchase requests.

  o Delivery orders and invoices received proper approvals in SIGMA.

  o Fixed assets were created in SIGMA after the asset was received from the vendor, as applicable.

  o Assets were tracked from receipt through final delivery to the specified MDOT location.

- Randomly and judgmentally sampled 3 of 5 assets purchased through the CSD contract process between October 1, 2022 and June 30, 2024 to determine if:

  o The TSMO Division approved the purchase requests.

  o CSD executed the contracts according to the SOM Procurement Policy Manual requirements.

  o Fixed assets were created in SIGMA after receipt, as applicable.

  o Assets were tracked from receipt through final delivery to the specified MDOT location.

- Judgmentally sampled 9 of 73 MDOT vehicle and equipment assigned locations to conduct site visits and:

  o Randomly sampled 111 of 1,092 assets to determine whether the assets in M5 existed at the assigned location.

  o Reviewed a haphazard sample of 176 assets to identify assets not included in M5.

- Randomly sampled 16 of 163 assets listed as disposed in M5 between October 1, 2022 and June 12, 2024 to determine if:

  o Sale dates and proceeds in M5 matched DTMB's sales notifications.

  o Disposal transactions and sales proceeds were entered into SIGMA, as applicable.

Our random samples were selected to eliminate any bias and enable us to project the results to the respective populations. Our judgmental samples were selected based on risk; therefore, we could not project the results to the respective populations.

OBJECTIVE 4

To assess the sufficiency of MDOT's efforts to monitor State fuel and procurement card purchases.

To accomplish this objective, we:

- Interviewed MDOT Fleet Services and CSD staff to gain an understanding of MDOT's responsibilities regarding procurement and fuel cards.

- Reviewed MDOT's procurement cardholder and supervisor manuals.

- Randomly sampled 45 of 26,538 procurement card transactions between October 1, 2022 and June 30, 2024 to verify purchases were:

  o Appropriate fleet-related business purchases.

  o Within the cardholder's spending limits.

  o Subject to timely supervisory review.

- Randomly sampled 8 of 44 biweekly procurement card cycle reports between the dates of October 1, 2022 and May 25, 2024 to verify the reports were reviewed by MDOT procurement card staff and approved by MDOT's procurement card administrator.

- Reviewed the fuel card vendor's contract to identify MDOT's oversight responsibilities and transaction controls and limits.

- Reviewed 12 fuel card payments totaling $9.9 million and randomly sampled 31 of 1,211 fuel card payment transactions made between October 1, 2022 and June 30, 2024 to determine if the transactions were for fuel and fuel-related products.

- Randomly sampled 3 of 19 DTMB monthly fuel card reports from October 2022 through April 2024 to ensure MDOT followed up with the fuel card user regarding identified non-fuel purchases.

Our random samples were selected to eliminate any bias and enable us to project the results to the respective populations.

CONCLUSIONS

We base our conclusions on our audit efforts and any resulting material conditions or reportable conditions.

When selecting activities or programs for audit, we direct our efforts based on risk and opportunities to improve State government operations. Consequently, we prepare our performance audit reports on an exception basis.

CONFIDENTIAL AND SENSITIVE INFORMATION

Because of the confidentiality of M5 security and access controls, we summarized our testing results for presentation in the report and provided the underlying details to MDOT management.

AGENCY RESPONSES

Our audit report contains 4 findings and 4 corresponding recommendations. MDOT's preliminary response indicates it agrees with all of the recommendations.

The agency preliminary response following each recommendation in our report was taken from MDOT's written comments and oral discussion at the end of our fieldwork. Section 18.1462 of the *Michigan Compiled Laws* and the State of Michigan Financial Management Guide (Part VII, Chapter 4, Section 100) require an audited agency to develop a plan to comply with the recommendations and to submit it to the State Budget Office upon completion of an audit. Within 30 days of receipt, the Office of Internal Audit Services, State Budget Office, is required to review the plan and either accept the plan as final or contact the agency to take additional steps to finalize the plan.

SUPPLEMENTAL INFORMATION

Our audit report includes supplemental information presented as Exhibits 1 and 2. Our audit was not directed toward expressing a conclusion on this information.

GLOSSARY OF ABBREVIATIONS AND TERMS

access controls   Controls protecting data from unauthorized modification, loss, or disclosure by restricting access and detecting inappropriate access attempts.

ATV   all-terrain vehicle.

availability   When a unit is capable of performing, at a minimum, its primary function.

CMV   Commercial Motor Vehicle.

Code of Federal Regulations (CFR)   The codification of the general and permanent rules published by the departments and agencies of the federal government.

confidentiality   Protection of data from unauthorized disclosure.

COVID-19   The disease caused by a coronavirus called SARS-CoV-2. It is a potentially severe illness often characterized by fever, coughing, and shortness of breath. The World Health Organization first learned of the new virus in December 2019.

CSD   MDOT's Contract Services Division.

downtime   When a unit is unavailable and unable to perform its primary function due to a maintenance issue scheduled or unscheduled (i.e., a preventive maintenance service or road breakdown).

DTMB   Department of Technology, Management, and Budget.

effectiveness   Success in achieving mission and goals.

FOD   Financial Operations Division.

Human Resources Management Network (HRMN)   The State's integrated human resources system which processes personnel, payroll, and employee benefits data.

integrity   Accuracy, completeness, and timeliness of data in an information system.

internal control	The plan, policies, methods, and procedures adopted by management to meet its mission, strategic plan, goals, and objectives. Internal control includes the processes for planning, organizing, directing, and controlling program operations. It also includes the systems for measuring, reporting, and monitoring program performance. Internal control serves as a defense in safeguarding assets and in preventing and detecting errors; fraud; violations of laws, regulations, and provisions of contracts and grant agreements; or abuse.
IT	information technology.
M5 system (M5)	MDOT's asset management system.
material condition	A matter, in the auditor's judgment, which is more severe than a reportable condition and could impair the ability of management to operate a program in an effective and efficient manner and/or could adversely affect the judgment of an interested person concerning the effectiveness and efficiency of the program. Our assessment of materiality is in relation to the respective audit objective.
MDOT	Michigan Department of Transportation.
mission	The main purpose of a program or an entity or the reason the program or the entity was established.
performance audit	An audit which provides findings or conclusions based on an evaluation of sufficient, appropriate evidence against criteria. Performance audits provide objective analysis to assist management and those charged with governance and oversight in using the information to improve program performance and operations, reduce costs, facilitate decision-making by parties with responsibility to oversee or initiate corrective action, and contribute to public accountability.
preventive maintenance	A fundamental, planned maintenance activity designed to improve life and avoid any unplanned maintenance activity or breakdown involving a vehicle or piece of equipment, typically performed on a calendar, hour, or mileage interval. These include periodic inspections, Type A and B services, CMV, and other inspections.
principle of least privilege	The practice of limiting access to the minimal level which will allow normal functioning. Applied to employees, the principle of least privilege translates to giving people the lowest level of user access rights they can have and still do their jobs. The principle is also applied to things other than people, including programs and processes.

recommended replacement	A measurement to determine whether an individual vehicle(s) or piece(s) of equipment is within or exceed the expected useful life.
reportable condition	A matter, in the auditor's judgment, less severe than a material condition and falls within any of the following categories: a deficiency in internal control; noncompliance with provisions of laws, regulations, contracts, or grant agreements; opportunities to improve programs and operations; or fraud.
SOM	State of Michigan.
Statewide Integrated Governmental Management Applications (SIGMA)	The State's enterprise resource planning business process and software implementation suite supporting budgeting, accounting, purchasing, human resource management, and other financial management activities.
TSC	transportation service center.
TSMO	Transportation Systems Management and Operations.
Type A service	Preventive maintenance performed every 250 hours or 365 days, including oil changes, fluid level checks, and tire pressure checks.
Type B service	Preventive maintenance performed every 500 hours, including visual inspections to check lights, safety equipment, windows, and mirrors.
unit	Vehicle or equipment asset in MDOT's fleet.
upfit	The act of adding features or components to a vehicle to accommodate MDOT's needs.
utilization	A measurement, typically in hours or miles, to indicate how frequently a vehicle or piece of equipment is used within a given time period (i.e., month, quarter, or year).