



2024 Fleet Performance Metrics Update/Overview

Start of National Performance Metrics

- September 2010 Performance Metrics Discussion/Survey
- September 2012 AASHTO Subcommittee on Maintenance Adopts Resolution 12-03 (Equipment Fleet Management Performance Metrics)



July 2013 Initial Submission for posting on EMTSP web site

What are National Performance Metrics

- Five Key Metrics that help tell the story of your fleet

Utilization (2012)

Preventive
Maintenance (2012)

Availability/Downtime
(2012)

Replacement
Recommended
(2012)

Scheduled vs.
Unscheduled Repairs
(2017)

Utilization (2012)

- A measurement typically in hours or mileage to indicate how frequently a vehicle or piece of equipment is used within a given time period (Month, Quarter, Year).

Fleet Management System Data

Meter Information (Loaded 102 records)

Period	Work Orders	Meter 1 Usage	Meter 2 Usage
202007	1	79	4549
202006	0	75	0
202005	0	7	0
202004	0	0	0
202003	1	81	6021
202002	0	38	0

Unit #	Year	Make	Model	Location	Category	Usage From: 10/1/23 to 4/1/24	Meter Type	Utilization Threshold
044205	2021	WESTERN STAR	4900	5270: BAY REGION-MT. PLEASANT GARAGE-STO	WMT	191	Engine Hours	112.5
044150	2020	WESTERN STAR	4900 SB	5830: BAY REGION-SAGINAW WEST GARAGE-STO	WMT	169	Engine Hours	112.5
044151	2020	WESTERN STAR	4900 SB	5320: BAY REGION-SAGINAW EAST GARAGE-STO	WMT	151	Engine Hours	112.5
044088	2017	INTERNATIONAL	7600	5830: BAY REGION-SAGINAW WEST GARAGE-STO	WMT	148	Engine Hours	112.5
044074	2015	INTERNATIONAL	7600	5270: BAY REGION-MT. PLEASANT GARAGE-STO	WMT	140	Engine Hours	112.5

Preventive Maintenance (2012)

- A fundamental, planned maintenance activity designed to improve life and avoid any unplanned maintenance activity/breakdown involving a vehicle or piece of equipment (typically performed on a calendar/hour/mileage interval).

Heavy Vehicles

Job	# of Jobs	Past Due	Due Soon	% Past Due	% Due Soon
38-PRM-PMA	546	40	34	7.33 %	6.23 %
38-PRM-PMB	546	6	29	1.1 %	5.31 %
38-PRM-PMI	547	36	43	6.58 %	7.86 %
38-PRM-ACH	13	1	0	7.69 %	0 %
Totals	1,652	83	106	5.02 %	6.42 %

Unit / Dept / Component

Unit Number: 036013 2006 CHEVROLET

Job Code: 38-PRM-PMA PM PM A Service

+ Schedule Forecaster History Subjobs

Recurring Interval based on Group

Time: 365 Day(s)

Primary Meter: 5000 Usage

Secondary Meter: Usage

Fuel Consumption:

Earliest Deviation: 10.0 %

Latest Deviation: 10.0 %

Delay parent job while this one is on a WO: ☐

PMI Flag: ☐

036013 2006 CHEVROLET IMPALA

Assignee: Joe Pline (Pool)

Current Meter: 134,854 Miles

Secondary Meter: 1 Hours

Job	Last Date Done	Time Interval	Time Due Date	Time % Due	Meter Last Done	Meter Interval	Meter Next Due	Meter % Due	Action
38-PRM-PMA	2/1/21	365	2/1/22	129.04 %	129,449	5,000	134,449	108.1 %	Overdue Perform Immediately
38-PRM-PMB	3/13/17	NA	NA	NA	107,222	32,000	139,222	86.35 %	

Availability/Downtime (2012)

- **Availability:** When a unit is in-service and capable of performing, at a minimum, its primary function.
- **Downtime:** When a unit is unavailable and unable to perform its primary function due to a maintenance issue scheduled or unscheduled.

52 Hours of Downtime



Downtime = # of Down Hours \div Total Amount of Hours in Period

Reason: P PREVENTIVE/SCHEDUL
 Open: 10/11/2021 10:40:50 ⌚
 Completed: 10/13/2021 15:03:27 ⌚
 Closed: 10/14/2021 11:29:22 ⌚

52 Hours Down \div 720 Hours in Month = 7.2% Down for that month

Heavy Vehicles Availability

Fiscal Period	202010-JUL	202011-AUG	202012-SEP	202101-OCT	202102-NOV	202103-DEC	202104-JAN	202105-FEB	202106-MAR	202107-APR	202108-MAY	202109-JUN	Total Average
Availability	85.83%	84.03%	84.75%	84.93%	84.45%	83.7%	83.7%	83.77%	87.07%	86.36%	85.52%	85.09%	84.94%
Downtime	14.17%	15.97%	15.25%	15.07%	15.55%	16.3%	16.3%	16.23%	12.93%	13.64%	14.48%	14.91%	15.06%

Replacement Recommended (2012)

- A measurement to compare whether an individual vehicle or piece of equipment are within or exceed established criteria (typically in age or miles/engine hours) for the expected life cycle or useful life.

Group #	Unit #	Year	Make	Model	Retention Term (Months)	Months In-Service	Difference (Months)
03-4001	034890	2016	GMC	SIERRA 2500	72	73	-1
03-4001	034891	2016	GMC	SIERRA 2500	72	73	-1
03-4001	034885	2016	GMC	SAVANA	72	72	0
03-4001	034892	2016	GMC	SIERRA 2500	72	72	0
03-4001	034886	2016	GMC	SAVANA	72	71	1
03-3001	033350	2016	GMC	SIERRA 1500	72	70	2

Heavy Vehicles

Average Age (Years): 10.76 **Past Retention:** 239

% Past Retention: 52.18 % **Not Past Retention:** 219

Scheduled vs Unscheduled Repairs (2017)

- Tracking/reporting a metric for scheduled (preventive) versus unscheduled (corrective) repairs is necessary to ensure effective and efficient management of State DOT vehicles and equipment as well as scheduling of preventive maintenance inspections. This metric is interrelated with and impacts other areas such as availability and potential repair costs.

Work Order Visit Reason

Visit Reason	Description
6	BUILDUP/UPFIT
C	CORRECTIVE/UNSCHED
N	NEW UNIT CHECK-IN
P	PREVENTIVE/SCHEDULED

Statewide

Type	# of WO's	Percentage
Corrective	4,148	43.59%
Preventive	5,367	56.41%

Category	Type	# of WO's	Percentage
Light Vehicles	Corrective	453	31.46%
	Preventive	987	68.54%

Category	Type	# of WO's	Percentage
Medium Vehicles	Corrective	454	33.43%
	Preventive	904	66.57%

Category	Type	# of WO's	Percentage
Heavy Vehicles	Corrective	2,057	62.45%
	Preventive	1,237	37.55%

Category	Type	# of WO's	Percentage
Equipment	Corrective	347	42.63%
	Preventive	467	57.37%

Category	Type	# of WO's	Percentage
Non-Self Propelled	Corrective	837	32.08%
	Preventive	1,772	67.92%

NAFA Codes and Groups



- For Each Metric
 - Light Vehicles (NAFA Codes 1 & 2)
 - Medium Vehicles (NAFA Codes 3 through 6)
 - Heavy Vehicles (NAFA Codes 7 & 8)
 - Non-Self Propelled (NAFA Code 0)
 - Off Road and Construction (NAFA Code 9)
 - Overall

6000	19,501- 26,000 GVW			
6400	19,501- 26,000 GVW	Van		
6420	19,501- 26,000 GVW	Van	Cargo	
6421	19,501- 26,000 GVW	Van	Cargo	Standard Van
6422	19,501- 26,000 GVW	Van	Cargo	Step Van
6423	19,501- 26,000 GVW	Van	Cargo	Utility
6424	19,501- 26,000 GVW	Van	Cargo	Hi-Cube
6425	19,501- 26,000 GVW	Van	Cargo	Van Ambulance
6426	19,501- 26,000 GVW	Van	Cargo	Cutaway Ambulance
6427	19,501- 26,000 GVW	Van	Cargo	Aerial
6428	19,501- 26,000 GVW	Van	Cargo	Law Enforcement
6429	19,501- 26,000 GVW	Van	Cargo	Work Center
6700	19,501- 26,000 GVW	Straight Trucks		

Group Number	Sub Activity	Unit Number Range/Plate Number	Description	Hourly Rate	Retention Period (months)
03-0001	8300	03-0002 – 03-0099	TRUCK, 14,001–16,000 GVW (MEDIUM)	\$13.40	120
03-0101	8301	03-0102 – 03-0199	TRUCK, 14,001–16,000 GVW W/ ATTACHMENT (MEDIUM)	\$11.00	96
03-0201	8302	03-0202 – 03-1099	TRUCK, 16,001–19,500 GVW (MEDIUM)	\$8.87	120
03-1101	8311	03-1102 – 03-1199	TRUCK, 19,501–26,000 GVW (MEDIUM)	\$12.02	120
03-1201	8312	03-1202 – 03-1999	TRUCK, 19,501–26,000 GVW W/ ATTACHMENT (MEDIUM)	\$25.47	96

Flat Bed
Dump Bed
Utility Bed



Northeast

- Connecticut (2019)
- Delaware (2021)
- Pennsylvania (2018)
- Massachusetts (2016)
- New Hampshire (2018)
- New Jersey (2018)
- Pennsylvania (2023)
- Vermont (2017)
- Maryland (2018)



Midwest

- Indiana (2017)
- Iowa (2015)
- Kansas (2018)
- Michigan (2024)
- Minnesota (2018)
- Missouri (2021)
- Ohio (2023)
- Oklahoma (2019)
- South Dakota (2017)



Southeast

- Arkansas (2020)
- Florida (2017)
- Kentucky (2018)
- Mississippi (2018)
- North Carolina (2015)
- South Carolina (2015)
- Texas (2016)
- Virginia (2021)
- West Virginia (2017)

Western



- Alaska (2024)
- Arizona (2013)
- California (2019)
- Colorado (2024)
- Hawaii (2016)
- Idaho (2018)
- Montana (2018)
- Nevada (2024)
- New Mexico (2013)
- Oregon (2018)
- Utah (2024)
- Washington (2024)
- Wyoming (2024)

- ☐ Individual metrics by AASHTO region/state
- ☐ Information and Forms section
- ☐ State folders for supporting documentation
- ☐ Access/updates
- ☐ Link - <http://www.emtsp.org/>

EMTSP Website



Equipment Management Technical Services Program



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Equipment Management Technical Services Program (EMTSP)

The EMTSP comprises four regional equipment management partnerships of State Highway Agency (SHA) Equipment Managers and their staffs. The partnerships exist to serve as the comprehensive national resource supporting effective and efficient governmental highway equipment fleet management. For more details on the goals of the program, please visit the [about page](#).



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[SSEM](#)



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 **EMTSP** EQUIPMENT VIDEO LIBRARY

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National Performance Metrics



Partnership Meetings

2023 SSEM Annual Meeting
June 19-22 (Gatlinburg, TN)

2023 MW/NE Joint Annual Meeting
August 21-23 (Bethlehem, PA)

2023 WSEMA Annual Meeting
August 28-31 (Big Sky, MT)

State Contact Lists

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Performance Metrics

Information and Forms

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[DOT National Metric Benchmarking](#)

[Performance Metric Definitions](#)

[NAFA Vehicle Classification System](#)

[DOT National Metrics Contact List](#)

Select Your Region Below

Northeast

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DOT National Metrics Contact List

DOT NATIONAL METRICS CONTACT LIST

STATE	CONTACT			Description of Fleet Management System Used	Updated on 2023-03-20
	NAME	Email	PHONE		COMMENTS
ALABAMA	Stan Carlton	carltons@dot.state.al.us	334-242-6063	In-House	Fleet Manager/Bureau Chief
ALASKA	Brad Bylsma	brad.bylsma@alaska.gov	907-269-0787	Homegrown	Fleet Manager
ARIZONA	Gary Lowe	glowe@azdot.gov	602-712-7284	Asset Works FA	Fleet Manager
ARKANSAS	Danny Keene	Danny.Keene@ardot.gov	501-569-2672	Homegrown	Division Head, Equipment & Procurement
CALIFORNIA	Ron Frank	ron.frank@dot.ca.gov	916-227-9700	AssetWorks - FA	Fleet Manager
COLORADO	Howard Ray	howard.ray@state.co.us	719-251-0308	SAP	Fleet / Equipment Asset Manager
CONNECTICUT	Anthony Uvino	anthony.uvino@ct.gov	860-594-2640	Asset Works - FA	Equipment Repair Manager
DELAWARE	Jamie Kavelak	Jamie.Kavelak@state.de.us	302-760-2400	AssetWorks M5	Business Management Analyst
FLORIDA	Angel Birriel	angel.birriel@dot.state.fl.us	850-410-5517	Homegrown	Fleet Manager
GEORGIA	Jeff Stone	jstone@dot.ga.gov	770-484-3201	AssetWorks FA	State Equipment Management Administrator
HAWAII	Llewellyn Honda	llewellyn.honda@hawaii.gov	808-587-2628	SPRINT GEOTAB G06 "PRO PLAN"	Equipment Supt./Safety Coord.
IDAHO	Kelly Dick	Kelley.dick@itd.idaho.gov	208-334-4456	Agile Assets	Fleet Manager
ILLINOIS	Marty Morris	marty.morris@illinois.gov	217-785-7144	MMIS	Fleet Administration Unit Manager
INDIANA	Gregory Bright	gbright@indot.in.gov	402-202-7441	Asset Works M-5	Statewide Fleet Director
IOWA	Todd Cogdill	todd.cogdill@iowadot.us	515-238-1059	Asset Works FA	Fleet Manager
KANSAS	Tim Cunningham	tim.cunningham@ks.gov	785-296-3853	Homegrown	Fleet Manager
KENTUCKY	Rick Durham	Rick.Durham@ky.gov	502-564-3916	Agile Assets 7.1	Director, Division of Equipment
KENTUCKY	Cas Walling	Cas.Walling@ky.gov	502-564-3916	Agile Assets 7.1	Resource Management Analyst, Equipment
LOUISIANA	Jarrett Lambert	Jarrett.lambert@la.gov	225-935-0248	SAP	Equipment Manager
MAINE	Danielle Brooks	danielle.brooks@maine.gov	207-624-8215	AssetWorks - M5	Fleet Manager
MARYLAND	Rob Dey	rdey@sha.state.md.us	410-582-5529	Maximo 4.1.1	Business Analyst
MASSACHUSETTS	Joseph Suppa	joseph.suppa@dot.state.ma.us	617-366-9207	Fleetio	Director, Office of Fleet Admin and Support

EMTSP Web Site

National Fleet Performance Metrics Form Download

National Fleet Performance Metrics Form

Instructions: Please complete current percentages for each Metrics category. If your State DOT cannot currently capture or report this information please indicate on the form next to the applicable metric. Please submit form and any supporting documentation (with the appropriate file name so it can be readily identified) to EMTSP semi-annually (no later than the 10th of January and July each calendar year).

State:Michigan

Reporting Period:July 2023

Metric Category	%
1. PM Compliance	
Light Vehicles (NAFA Codes 1 & 2):	
Medium Vehicles (NAFA Codes 3 through 6):	
Heavy Vehicles (NAFA Codes 7 & 8):	
Non-Self Propelled (NAFA Code 0):	
Off Road and Construction (NAFA Code 9):	
Overall (computed by summing total units in each category determining a combined percentage):	

Email the completed form to:

ncpp@egr.msu.edu; bannascha@michigan.gov; odohert1@egr.msu.edu; halachof@egr.msu.edu

Submit Form

The submission button only
works in Adobe Reader

- Reporting twice per year in July and January

EMTSP Website

PM Compliance



Light Vehicles
86.27%
NAFA 1-2



Medium Vehicles
93.83%
NAFA 3-6



Heavy Vehicles
97.97%
NAFA 7-8



Non-Self Propelled
96.65%
NAFA 0



**Off Road and
Construction**
96.39%
NAFA 9



Overall
94.77%
NAFA All

Legend

Greater than 90% = **Green**

80%-89% = **Yellow**

Less than 80% = **Red**

Scheduled vs Unscheduled Repairs



Light Vehicles
72.08%
NAFA 1-2



Medium Vehicles
70.79%
NAFA 3-6



Heavy Vehicles
41.93%
NAFA 7-8



Non-Self Propelled
71.23%
NAFA 0



**Off Road and
Construction**
62.02%
NAFA 9



Overall
60.04%
NAFA All

Legend

Greater than 70% = **Green**

50%-70% = **Yellow**

Less than 50% = **Red**

Contact Information

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