



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

Biennial Report: 2014-2015

Massachusetts Enhanced Emissions and Safety Test Inspection and Maintenance Program

April 3, 2017

**BIENNIAL REPORT
MASSACHUSETTS ENHANCED EMISSIONS AND SAFETY TEST
INSPECTION AND MAINTENANCE PROGRAM
2014-2015**

1. Introduction

This report has been prepared for the U.S. Environmental Protection Agency (EPA), in compliance with the requirements of 40 CFR 51.366 (e). The information in this report covers the reporting period of calendar years 2014 and 2015, and supplements the program information that is contained in the 2014 and 2015 Annual Reports (these reports are available on the Mass Vehicle Check Program web site:

http://massvehiclecheck.state.ma.us/about_publications.html).

The Massachusetts Inspection and Maintenance (I&M) Program is an important tool for improving air quality in the Commonwealth. The program also ensures that Massachusetts cars are safe to drive. The program was established in M.G.L. c. 111, §§142J and 142M, c.21A, §§2(28) and 16, and c. 90, §§7A, 7V, 7W, 7X, 7Y, 7Z, 20 and 31. Implementing regulations were initially adopted in January 1999 by the Massachusetts Department of Environmental Protection (MassDEP) at 310 CMR 60.02, and the Massachusetts Department of Transportation's Registry of Motor Vehicles Division (RMV) at 540 CMR 4.00-4.09.

The Massachusetts I&M Program is designed to balance three goals:

- *Pollution reductions* - Vehicles with high emission levels (or in unsafe operating condition) must be identified and repaired using test equipment appropriate for today's high-tech vehicles.
- *Motorist convenience* – The test must be as convenient as possible for Massachusetts motorists.
- *Fitting in with the automotive service industry* – Attractive business opportunities must be provided to the program's private sector partners: the inspection stations and repair shops that test and fix vehicles.

MassDEP and RMV (the Agencies) jointly administer the Massachusetts Vehicle Check Program. In January 2008, the Commonwealth contracted with Parsons Environmental & Infrastructure Group Inc. (Parsons or Contractor) to manage and implement the I&M Program, including developing and managing the Inspection Station network; developing and implementing inspection protocols; and acquiring, providing, and maintaining inspection station workstations, and data systems. The Contractor also trains inspectors and repairers and provides communications to the public, inspectors, and repairers. The contract covers vehicle inspections starting October 1, 2008.

Emissions and safety inspections are performed through a decentralized network of public inspection stations. Inspection stations and individual inspectors are licensed by RMV. This network is supplemented by stations that are specially licensed to conduct inspections for vehicle fleets.

Since October 1, 2008, the program has employed only on-board diagnostic (OBD) testing for all vehicles required to receive an emissions test, with the exception of diesel vehicles with a Gross Vehicle Weight Rating (GVWR) greater than or equal to 10,000 pounds that are not equipped with OBD. These diesel vehicles receive an opacity test.

To help motorists whose vehicles need emissions repairs, the program includes a network of registered repair technicians who are specially trained to diagnose emissions problems and repair modern vehicles effectively. The Program provides waivers of emission standards if some repairs are completed by a registered repairer, the repair expenditures exceed program requirements, and certain other conditions are met.

For vehicles that failed the emissions test and require replacement of a major (and expensive) component(s) to pass, a one-time economic hardship exemption is available that gives the vehicle owner one year to finance repairs or replace the vehicle.

Table 1 provides statistics describing the Massachusetts Inspection and Maintenance Program “at a glance” in 2014 and 2015.

**Table 1: Summary Statistics: Massachusetts Inspection and Maintenance Program
 2014 and 2015**

	PROGRAM COMPONENT	2014 TOTAL	2015 TOTAL
Vehicles and Inspections	Number of vehicles in the Massachusetts fleet	4.79 million	4.86 million
	Number of unique vehicles tested for safety or for safety and emissions	4,665,843	4,726,485
	Number of unique vehicles receiving an initial emissions test	3,634,521	3,646,618
	Types of emissions tests:		
	OBD	97.5%	97.5%
	Opacity	2.5%	2.5%
	Non-diesel vehicles (e.g., gasoline, natural gas, etc.):		
	• Number that received initial OBD emissions tests	3,513,430	3,520,317
	Number that failed initial OBD emissions tests	213,889 (6.1%)	206,773 (5.9%)
	Diesel vehicles:		
	• Number that received initial OBD emissions tests	29,316	34,371
	• Number that failed initial OBD emissions test	2,545 (8.7%)	3,635 (10.6%)
	• Number that received initial opacity tests	91,775	91,930
• Number that failed initial opacity emissions test	1,478 (1.6%)	1,542 (1.7%)	
Number of Waivers issued	4	4	
Number of Economic Hardship Extensions issued	49	45	
No Known Outcome			
Number of non-diesel vehicles that failed an initial OBD test and did not pass a subsequent retest or obtain a waiver or an economic hardship extension by March 31 of the subsequent year ¹	30,767	26,882	
Percent of non-diesel vehicles receiving an initial OBD test with no known outcome	0.9%	0.8%	
Number of inspection sticker motor vehicle violations issued by state and local police	69,126	60,006	

¹ Vehicles taken off the road have a “known outcome.” Therefore, the raw numbers for no known outcome were adjusted by removing vehicles with expired registrations that had not been renewed by March 31st of the subsequent year.

	PROGRAM COMPONENT	2014 TOTAL	2015 TOTAL
Stations and Inspectors	Inspection Stations		
	• Number of stations inspecting vehicles throughout the period	1,665	1,636
	• Number of RMV site audits of inspection stations (most stations were audited multiple times)	8,215	7,557
	• Number of adverse RMV enforcement actions (license revoked, license suspended, warning)	364	330
	Inspectors		
	• Number of licensed inspectors that performed at least one test during the period	7,019	7,044
	• Number of adverse RMV enforcement actions (license revoked, license suspended, warning)	297	255
	Totals penalties assessed against stations and inspectors	\$200,500	\$106,000
	Amount of penalties stayed (Penalties stayed as long as stations and inspectors comply with all program requirements during the period covered by the settlement)	\$41,000	\$4,000
Number of covert vehicle audits	1,149	1,336	
Number of covert vehicles audits that falsely passed OBD	0	0	
Equipment	Number of OBD equipment audits	6,526	6,151
	Number of OBD Equipment Audits that failed for communications or accuracy	15 (0.2%)	11 (0.2%)
	Number of OBD Equipment Audits that failed for Station Maintenance items (Condition of cables and connectors)	47 (0.7%)	31 (0.5%)

2. Program Changes Implemented in 2014-2015

As required by EPA's regulations² defining biennial reporting requirements, the following summarizes the 2014 and 2015 changes made in program design, funding, personnel levels, procedures, regulations, and legal authority. 2014 and 2015 were the sixth and seventh full calendar years under the current program design. The changes and issues needing to be addressed in this mature program were relatively minor.

Program Design: No changes to program design were made in 2014 and 2015.

Funding: The program funding structure was unchanged for most of 2014 and 2015. The \$29 inspection fee (which was established in regulation in 1999 and covers safety as well as emissions tests) remained in place until July 1, 2014, during which time inspection stations continued to retain \$22.50 of the fee. The remaining \$6.50 was deposited into the Commonwealth's Inspection and Maintenance Trust Account, which is managed by RMV. From this account, Parsons was paid \$1.904 for each of the first 4.4 million "paid" inspections, and \$0.70 for each additional "paid" inspection thereafter.

Starting July 1, 2014 the inspection fee was raised from \$29 to \$35, with the inspection stations retaining \$23.50 of the fee and the remaining \$11.50 deposited into the Commonwealth's Inspection and Maintenance Trust Account.

Parsons continued to be paid \$1.904 for each of the first 4.4 million "paid" inspections, and \$0.70 for each additional "paid" inspection thereafter. The remaining funds were available to MassDEP and RMV for program oversight and management. MassDEP was provided with funds from the Trust Account through an Inter-Agency Service Agreement with RMV, updated annually.

Funding levels from the Inspection and Maintenance Trust for the program continued to be adequate to fund program costs. In FY 2015, Parsons was paid \$8.70 million, RMV's expenditures were \$4.12 million, and MassDEP's expenditures were \$1.52 million. MassDEP expenditures were consistent with expenditures reported in the 2012-2013 biennial report.

Personnel Levels: Staffing levels for the Massachusetts Inspection and Maintenance Program have been generally stable since the program's inception. In FY2015, RMV assigned 38 staff (full time equivalents) to the Program, and MassDEP had 10 staff assigned during the fiscal year. MassDEP staffing was consistent with staffing levels reported in the 2012-2013 biennial report.

Procedures: During 2014 and 2015, the basic OBD and opacity inspection procedures were largely unchanged.

The one substantial change to inspection procedures was in response to readiness issues related to diesel-powered vehicles with advanced emissions controls. These changes are related to the issues that lead to the development of EPA's "Best Practices for Addressing OBD Readiness in IM Testing of Diesel Vehicles Under 14,000 lbs. Gross Vehicle Weight Rating." Because the

² 40 CFR § 51.366 (e)

IM Program does not have software that would allow the implementation of the recommended best practices, MassDEP excluded the following difficult-to-set readiness monitors from readiness determinations for these vehicles:

Model Years	Make/Model	Until mid-April 2015	After Mid-April 2015
2010-2014	All Audi/VW Diesels€	NOx After-treatment	None
2010-2012	Sprinter 2500/3500	None	NMHC Cat
2013-2016	Sprinter 2500/3500	None	Exh. Gas Sensor
2010-2012	Dodge/Ram Cummins	NOx After-treatment	NOx After-treatment
2013-2016	Dodge/Ram Cummins	NOx After-treatment	PM Filter
2014-2016	Fiat 3L V6 Diesels*	None	NMHC Cat

* used in Ram 1500 pickups and Jeep Grand Cherokees

Program Authority (Legislation and Regulations): The Agencies amended the program’s implementing regulations (MassDEP at 310 CMR 60.02, and RMV at 540 CMR 4.00-4.09) to incorporate changes in September 2008, and the updated program started operation on October 1, 2008. A revision to the Massachusetts State Implementation Plan (SIP), reflecting the changes to MassDEP and RMV regulations, was submitted to EPA in June 2009, with a minor revision in November, 2009. The regulatory changes received EPA approval effective March 26, 2013.

In September 2013, MassDEP proposed three changes to 310 CMR 60.02 that would:

1. Remove the out-of-date sections of the regulations that specify requirements that were only in place before the redesigned program started on October 1, 2008;
2. Modify the Kit Car requirements to implement the emissions inspection requirements of Chapter 311 of the Acts of 2010, an Act Relative to the Registration and Inspection of Street Rods and Custom Vehicles, effective April 30, 2011 and allow increased flexibility in how emissions requirements are met; and
3. Modify the requirements for registered repairers to allow repairers with L1 and A9 certifications to repair light and medium duty diesel vehicles (GVWR ≤ 14,000). The current regulations require L1 and L2 certifications.

The public comment period closed November 13, 2013. As of the end of 2015, the final regulation draft was undergoing administrative review.

3. Program Issues Identified and Corrected

During 2014 and 2015, MassDEP and RMV worked with the Contractor to address program issues.

- *Database and Workstation Software Revisions:* During 2014 and 2015, the Agencies worked with the Contractor to implement the following revisions to database and workstation software:
 - improve/upgrade sticker tracking functions;
 - correct fuel-type decoding errors for heavy-duty gasoline vehicles;
 - correct printer errors for certain station reports;
 - allow correction to previous license plate entry when scanning the previous inspection sticker (e.g., replacement of damaged or stolen license plates, or switch to special or vanity plate types);
 - correct MAC referral logic to prevent the registration check from improperly returning an “invalid registration” result;
 - allow monthly updates to the VIN decoder;
 - improve the information printed on Vehicle Inspection Reports (VIRs) for the 10 closest Registered Repair Facilities (RRFs); and
 - enhance vehicle fuel-type entry quality assurance.
- *Problems with OBD Inspections for Specific Vehicle Makes and Models:* Massachusetts continues to monitor the OBD inspection data to identify specific vehicle makes and models that have problems with their OBD inspections. The problems are investigated to determine whether the vehicle or the test equipment was the cause. Problems with the test equipment are resolved via updates to hardware and/or software. The number of vehicles needing an alternative OBD test was reduced to 52 in 2015, down from 131,165 in 2009. Model years, makes, and models of vehicles that received alternative tests in 2015 are presented in Attachment B of the 2015 Annual Report.

In addition, Massachusetts did not start a state-wide registration enforcement program in 2014 and 2015. Responsibility for enforcement against motorists who fail to get their vehicles inspected or fail to pass their inspection is shared by RMV, and local and state police. Since the program’s inception, RMV’s enforcement efforts have focused primarily on ensuring that inspectors and inspection stations properly administer the test, while local and state police have issued citations to motorists found to be driving vehicles without proper inspection stickers.

While state and local police continue to issue tickets for vehicles they find on the road without proper inspection stickers, RMV’s registration enforcement program had not been implemented by the end of 2015.

RMV recognizes the need to have a registration enforcement program to enhance its efforts to ensure that motorists comply with the requirements of the Massachusetts I&M Program. However, in today’s era of unprecedented state resource limitations, RMV’s aging information technology infrastructure cannot support a registration enforcement program while also meeting the data requirements of the other federal programs that RMV works under (which are increasing at unparalleled levels). RMV is continually exploring more cost-effective ways to get this job done in a proficient manner, and is working to replace its primary database (Automated License and Registration System (ALARS)). The replacement is expected to provide significantly more

efficient data processing, which would allow RMV to move forward with the development and implementation of a successful registration enforcement program.

The contract to modernize ALARS was awarded on March 7, 2013, at which time RMV staff began working closely with the ALARS contractor to define the business rules for the modernized database, including the business rules for implementing registration enforcement. During 2014 and 2015, RMV continued to make progress with the ALARS modernization project.

RMV continues to be committed to the registration enforcement requirement and is anxious to see it implemented. At the same time, RMV observes that Massachusetts enjoys a compliance rate that exceeds 90% in database surveys and 94% in actual parking lot surveys, which is similar to the rates found in many other states.

Reports Referenced

- Annual Reports to the U.S. Environmental Protection Agency describing the implementation of the Massachusetts Enhanced Emissions and Safety Test Program for 2000 through 2015 can be found at the program's web site: http://massvehiclecheck.state.ma.us/about_publications.html.
- Biennial Reports to the U.S. Environmental Protection Agency describing the program in 2000-01, 2002-03, 2004-05, 2006-07, 2008-09, 2010-11 and 2012-13 can also be found at the same web site.