State of Rhode Island
Department of Environmental Management

Office of Air Resources

Rhode Island Motor Vehicle Inspection/Maintenance Program

Annual Report - Year 2011
"Data Analysis and Reporting"

submitted
to the

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1. Executive Summary

The Rhode Island Motor Vehicle Inspection/Maintenance (I/M) Program was implemented in January of 2000. An annual report to the EPA is required under 40 CFR Part 51 § 51.366 "Data Analysis and Reporting". This report has been developed to comply with that requirement for the period from January 1, 2011 to December 31, 2011.

The report includes details of the I/M Program activities, including inspection data; description of the enforcement methods employed; outline of quality control and quality assurance program mechanisms used, along with a description of significant events.

The Rhode Island I/M program requires a biennial inspection of subject vehicles in a test-and-repair system. The number of Authorized Inspection Repair Stations (AIRS) has remained steady during the duration of the program, ranging from 287-294 stations. At the end of December, 2011, 289 stations were active in the network, throughout the state, including those at the Division of Motor Vehicles (DMV) and the facility run by SysTech International (SysTech), the Program Manager. Vehicles are tested using one of four methods: on-board diagnostic (OBD) testing including OBD diesel, a transient test (NYTEST with BAR31 trace) or a two-speed idle test. The non-OBD diesel vehicles are tested with a steady-state opacity test.

DMV and the Department of Environmental Management (DEM) are jointly responsible for the administration of the Rhode Island I/M Program. DMV is responsible for the operation of the program and DEM is responsible for the environmental aspects, including the requirement to submit this report. The majority of vehicles tested during 2011 were tested using OBD. Approximately 90% of the fleet was subjected to OBD testing, whereas tailpipe testing has decreased to 10% of the fleet tested.

Significant Events:

- Throughout the year, SysTech and their information Technology (IT) staff continued to work with DMV to address minor changes on the analyzer computer software at the AIRS.

- In May 2011, SysTech announced to DMV and DEM that the Program Manager for Rhode Island's I/M Program was planning on retiring in September 2011. SysTech assigned Frank A. Ofiero as the new Program Manager to oversee SysTech's on-site performance of the I/M Program under the contract with the State.

- During September 2011, an evaluation of program effectiveness using remote sensing was conducted.

- During November 2011, a roadside check was conducted by the DMV and the Local Police to promote compliance with the I/M Program.

- During December 2011, SysTech's parent company, Opus Prodox AB (publ) (Opus Group), signed an agreement with Environmental Systems Products Holdings, Inc. (ESP) to acquire 100% of the shares of ESP.

2. Significant Events

SysTech International Continues to Upgrade and Improve the Analyzers' Computer Software at the AIRS

Throughout the year, SysTech and their information Technology (IT) staff continued to work with DMV to improve the computer software on the analyzers at the AIRS and address minor known issues.

SysTech and their (IT) staff and DMV also worked to improve the procedures for software acceptance testing, in order to eliminate the need for multiple software releases during the year. There were only two upgraded software versions loaded on the analyzers at the AIRS during 2011, (versions 11.01.04 and 11.01.12). SysTech submitted results of acceptance testing for each version of the software to DMV for approval. When the acceptance testing was approved by DMV, SysTech proceeded to load it into the analyzers at the five beta testing AIRS to assure the quality and accuracy of the emissions tests before loading it on the analyzers at the remaining AIRS. The beta testing AIRS tested each version of the software for two weeks. Once the AIRS had successfully tested the upgraded software versions and DMV approved the testing, SysTech proceeded to load the software on the analyzers at the remaining AIRS.

SysTech Appoints New I/M Program Manager

In May 2011, SysTech announced to DMV and DEM that the Program Manager for Rhode Island's I/M Program was planning on retiring in September 2011. SysTech assigned Frank A. Ofiero as the new Program Manager to oversee SysTech's performance of the I/M Program under the contract with the State.

Roadside Evaluation of Program Effectiveness

In September 2011, an evaluation of program effectiveness was conducted using remote sensing. The 2011 on-road study was performed by Envirotest Systems Holdings Corp. of East Granby, Connecticut under a contract with SysTech. The on-road survey data was collected over 9 days from September 12th thru September 21^{st,} 2011, using a RSD-4600 on-road remote sensing device that measured exhaust emissions of vehicles as they drove by. Emissions were successfully measured and registration plates were visible and transcribed from 41,777 vehicles. Over 84% of the registration plates were Rhode Island plates.

The RSD-4600 system measures carbon monoxide (CO), hydrocarbons (HC), oxides of nitrogen (NO_x) and smoke. Average emissions of the on-road light-duty vehicles matched to Rhode Island registrations were 0.10% CO, 15 ppm HC, and 138 ppm NO_x.

The following table indicates the reductions and increases in CO, HC, and NO_x beginning in 1998 thru 2011.

Table I: Roadside Evaluation

Study	Valid Readings	Average CO	Average HC	Average NO_x
1998	36,278	0.49%	166 ppm	1,020 ppm
2001	38,708	0.43%	40 ppm	332 ppm
2002	8,152	0.38%	30 ppm	232 ppm
2003	11,163	0.33%	36 ppm	206 ppm
2004	27,552	0.14%	39 ppm	209 ppm
2006	57,794	0.13%	16 ppm	222 ppm
2007	28,565	0.13%	22 ppm	227 ppm
2008	25,575	0.14%	22 ppm	188 ppm
2009	27,731	0.12%	25 ppm	176 ppm
2010	22,452	0.12%	16 ppm	131 ppm
2011	25,747	0.10%	15 ppm	138 ppm

The results of the 2011 study indicate that the average CO and average HC levels have continued to decreased and the average NO_x has increased slightly during 2011. This slight increase in the NO_x may be attributed to the remaining 10% of the older vehicles still on the road. (see Appendix "A" for Roadside Evaluation of Program Effectiveness Report)

Roadside Check Conducted by DMV and Local Police

During November 2011, a roadside check was conducted by the DMV and Local Police to promote compliance with the I/M Program.

SysTech's Parent Company, Opus Prodox AB (publ) (Opus Group) Acquires 100% of the Shares of Environmental Systems Products Holdings, Inc. (ESP)

During December 2011, SysTech's parent company, Opus Prodox AB (publ) (Opus Group) signed an agreement with Environmental Systems Products Holdings, Inc. (ESP) to acquire 100% of the shares of ESP. The acquisition includes all of ESP's operations in the U.S., Mexico and Canada. This transaction combined the strengths offered by both SysTech and ESP, and will further strengthen SysTech focus on the U.S. vehicle inspection market in their global strategy.

3. Annual Test Data Report

This section reports vehicle inspection data for the period of January 1, 2011 to December 31, 2011. Vehicles subject to the inspection requirement include all light-duty vehicles, 25 years old and newer, up to 8,500 pounds GVWR. Vehicles over 25 years of age are required to undergo inspection but the results relating to emissions are advisory and compliance with the standards is voluntary. New vehicles less than two years old that have not exceeded 24,000 miles are exempt from testing.

The data for this report was submitted by the Program Manager for all the inspection tests performed during 2011. The data was then filtered using a process to eliminate inspection results related to the State's safety inspection program which is performed concurrently with the emissions program. (see Appendix "B" for SysTech Reporting Services)

Initial Test Results

The following table provides a breakdown of initial inspections by test type.

Table II: Initial Test Results

Tests	Total	Pass	Fail	% Fail
Initial OBD Tests	304,485	286,528	17,957	5.90%
Initial Transient Tests	20,543	19,117	1,426	6.94%
Initial Two Speed Idle Tests	11,657	10,074	1,583	13.58%
Initial OBD Diesel	779	751	28	3.59%
Initial Diesel Opacity	195	180	15	7.69%
Total Initial Tests	337,659	316,650	21,009	6.22%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

There were 289 AIRS that participated in the I/M Program during 2011. There were 337,659 vehicles tested in 2011. The number of vehicles that failed the initial test was 21,009. This result is an overall initial failure rate of 6.22%.

Table III: Initial Transient Failure Rate

Program Year	Initial Transient Tests	Initial Transient Failures	% Fail
2000	241,993	15,877	6.56%
2001	314,717	18,524	5.89%
2002	274,456	30,062	10.95%
2003	184,187	24,279	13.18%
2004	116,944	15,924	13.62%
2005	104,041	15,877	15.26%
2006	80,053	10,423	13.02%
2007	63,501	7,451	11.73%
2008	47,941	5,543	11.56%
2009	36,561	3,369	9.21%
2010	29,402	2,696	9.17%
2011	20,543	1,426	6.94%

As the above table indicates, during 2000 and 2001, the transient failure rate was consistent with the anticipated failure rate of 6% projected in the State Implementation Plan (SIP), due to the use of the phase in cut point standards for tailpipe emissions. Beginning in 2002 the anticipated failure rate was projected to

be 15-18%. The failure rate has been lower than anticipated since 2002, except during 2005.

Retest Test Results

Table IV: First Retest Results by Test Type

	Total	Pass	Fail	% Fail
OBD First Retests	15,358	13,945	1,413	9.20%
Transient First Retests	1,217	974	243	19.97%
Two Speed Idle First Retests	1,039	898	141	13.57%
OBD Diesel First Retests	17	16	1	5.88%
Diesel Opacity First Retests	10	9	1	10.00%
Total First Retests	17,641	15,842	1,799	10.20%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

Table V: Subsequent Retest Results by Test Type

	Total	Pass	Fail	% Fail
OBD Subsequent Retests	1,365	1,107	258	18.90%
Transient Subsequent Retests	273	210	63	23.08%
Two Speed Idle Subsequent Retests	197	162	35	17.77%
OBD Diesel Subsequent Retests	0	0	0	0.00%
Diesel Opacity Subsequent Retests	1	1	0	0.00%
Total Subsequent Retests	1,836	1,480	356	19.39%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

First Retest Failure Rates of Transient Tests

Table VI: First Retest Failure Rates of Transient Tests

Program Year	1st Retest Vehicles	Fail	% Fail
2000	28,892	7,982	28%
2001	21,521	3,970	18%
2002	26,234	5,814	22%
2003	24,207	4,431	18%
2004	16,628	2,668	16%
2005	17,397	2,736	16%
2006	12,038	1,830	15%
2007	8,804	1,295	15%
2008	5,026	760	15%
2009	3,026	630	21%
2010	2,320	522	23%
2011	1,217	243	20%

The above table indicates that the failure rate declined after the first year of the program and, except for 2002, continued to decline through 2004. During 2005 it remained the same as 2004 and declined again during 2006 and remained the same thru 2008. During 2009 thru 2011, the failure rate remained high; probably due to the fact these vehicles are the oldest vehicles on the road, making them very difficult to repair.

Transient Tests

The following tables provide a breakdown of the transient test results.

Table VII: Transient Initial Test Results

Transient Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	15,248	14,188	1,060	6.95%
Trucks	5,295	4,929	366	6.91%
Total Transient Initial Tests	20,543	19,117	1,426	6.94%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

Table VIII: Transient First Retest Test Results

Transient Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	877	704	173	19.73%
Trucks	340	270	70	20.59%
Total Transient First Retests	1,217	974	243	19.97%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

Table IX: Transient Subsequent Test Results

Transient Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	189	149	40	21.16%
Trucks	84	61	23	27.38%
Total Transient Subsequent Tests	273	210	63	23.08%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

Two Speed Idle Tests

The following tables provide a breakdown of the two speed idle test results.

Table X: Two Speed Idle Initial Test Results

Two Speed Idle Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	8,384	7,289	1,095	13.06%
Trucks	3,273	2,785	488	14.91%
Total Two Speed Initial Tests	11,657	10,074	1,583	13.58%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

Table XI: Two Speed Idle First Retest Test Results

Two Speed Idle Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	648	565	83	12.81%
Trucks	391	333	58	14.83%
Total Two Speed First Retests	1,039	898	141	13.57%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

Table XII: Two Speed Idle Subsequent Test Results

Two Speed Idle Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	112	95	17	15.18%
Trucks	85	67	18	21.18%
Total Two Speed Subsequent Tests	197	162	35	17.77%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

On-Board Diagnostics Testing

An on-board diagnostic system test is an inquiry of the vehicle's on-board computer. An OBD test is considered a failure when:

- Current Diagnostic Trouble Codes are indicated and the Malfunction Indicator Light (MIL) is commanded or, or
- MY 2001 and newer vehicles, more than one monitor in a vehicle's on board computer is not set as ready; or,
- MY 1996-2000 vehicles, more than two monitors in a vehicle's on-board computer are not set as ready.

If the vehicle's OBD system is not communicating with the RI2007 analyzer, the vehicle shall undergo the appropriate exhaust emissions test.

The following table provides a breakdown of the initial OBD tests.

Table XIII: OBD Initial Test Results

Tests	OBD Total Tests	OBD Pass	OBD Fail	OBD Fail %	MIL Pass	MIL Fail	MIL Fail %	Monitor Ready Pass	Monitor Ready Fail	Monitor Ready Fail %
Passenger Vehicles	201,986	190,460	11,526	5.71%	196,943	4,597	2.28%	194,681	6,859	3.40%
Trucks	102,499	96,068	6,431	6.27%	99,695	2,544	2.48%	98,437	3,802	3.71%
Total	304,485	286,528	17,957	5.90%	296,638	7,141	2.35%	293,118	10,661	3.50%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

Table XIV: OBD First Retest Test Results

Tests	OBD Total Tests	OBD Pass	OBD Fail	OBD Fail %	MIL Pass	MIL Fail	MIL Fail %	Monitor Ready Pass	Monitor Ready Fail	Monitor Ready Fail %
Passenger Vehicles	9,264	8,385	879	9.49%	8,969	268	2.89%	8,632	605	6.53%
Trucks	6,094	5,560	534	8.76%	5,942	140	2.30%	5,695	387	6.35%
Total	15,358	13,945	1,413	9.20%	14,911	408	2.66%	14,327	992	6.46%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

Table XV: OBD Subsequent Retest Test Results

Tests	OBD Total Tests	OBD Pass	OBD Fail	OBD Fail %	MIL Pass	MIL Fail	MIL Fail %	Monitor Ready Pass	Monitor Ready Fail	Monitor Ready Fail %
Passenger Vehicles	874	703	171	19.57%	814	55	6.29%	735	134	15.33%
Trucks	491	404	87	17.72%	463	23	4.68%	427	59	12.02%
Total	1,365	1,107	258	18.90%	1,277	78	5.71%	1,162	193	14.14%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

The following table provides a comparison of the (Non-Diesel) OBD Tests

Table XVI: OBD (Non Diesel) Comparison Chart

Tests	Total Tests	OBD Pass	OBD Fail	OBD Fail %	MIL Pass	MIL Fail	MIL Fail %	Monitor Ready Pass	Monitor Ready Fail	Monitor Ready Fail %
Initial Test										
Passenger	201,986	190,460	11,526	5.71%	196,943	4,597	2.28%	194,681	6,859	3.40%
Truck	102,499	96,068	6,431	6.27%	99,695	2,544	2.48%	98,437	3,802	3.71%
Total	**304,485**	**286,528**	**17,957**	**5.90%**	**296,638**	**7,141**	**2.35%**	**293,118**	**10,661**	**3.50%**
First Retest										
Passenger	9,264	8,385	879	9.49%	8,969	268	2.89%	8,632	605	6.53%
Truck	6,094	5,560	534	8.76%	5,942	140	2.30%	5,695	387	6.35%
Total	**15,358**	**13,945**	**1,413**	**9.20%**	**14,911**	**408**	**2.66%**	**14,327**	**992**	**6.46%**
Subsequent Test										
Passenger	874	703	171	19.57%	814	55	6.29%	735	134	15.33%
Truck	491	404	87	17.72%	463	23	4.68%	427	59	12.02%
Total	**1,365**	**1,107**	**258**	**18.90%**	**1,277**	**78**	**5.71%**	**1,162**	**193**	**14.14%**

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

A total of 304,485 OBD non-diesel vehicles were initially tested using OBD in 2011. This represents 90% of all vehicles tested. The overall initial failure rate was 5.90%. The OBD MIL produced a 2.35% failure rate and monitor readiness accounted for a 3.50% failure rate.

As the above table indicates there were 15,358 OBD non-diesel vehicles re-tested with an overall failure rate of 9.20%. There were 1,365 OBD non-diesel vehicles failing the subsequent test, an overall failure rate of 18.90%.

Diesel OBD Testing

The following tables provide a breakdown of initial diesel OBD tests on passenger vehicles and trucks.

Table XVII: Diesel OBD Initial Test Results

Tests	OBD Diesel Total Tests	OBD Diesel Pass	OBD Diesel Fail	OBD Diesel Fail %	OBD Diesel MIL Pass	OBD Diesel MIL Fail	OBD Diesel MIL Fail %	OBD Diesel Monitor Ready Pass	OBD Diesel Monitor Ready Fail	OBD Diesel Monitor Ready Fail %
Passenger Vehicles	718	692	26	3.62%	694	21	2.92%	715	0	0.00%
Trucks	61	59	2	3.28%	59	2	3.28%	61	0	0.00%
Total	779	751	28	3.59%	753	23	2.95%	776	0	0.00%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

Table XVIII: Diesel OBD First Retest Test Results

Tests	OBD Diesel Total Tests	OBD Diesel Pass	OBD Diesel Fail	OBD Diesel Fail %	OBD Diesel MIL Pass	OBD Diesel MIL Fail	OBD Diesel MIL Fail %	OBD Diesel Monitor Ready Pass	OBD Diesel Monitor Ready Fail	OBD Diesel Monitor Ready Fail %
Passenger Vehicles	16	15	1	6.25%	15	1	6.25%	16	0	0.00%
Trucks	1	1	0	0.00%	1	0	0.00%	1	0	0.00%
Total	17	16	1	5.88%	16	1	5.88%	17	0	0.00%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

Diesel Opacity Testing

The following tables provide a breakdown of initial diesel opacity tests or passenger vehicles and trucks.

Table XIX: Diesel Opacity Initial Test Results

Diesel Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	168	153	15	8.93%
Trucks	27	27	0	0.00%
Total Initial Diesel Opacity Tests	195	180	15	7.69%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

Table XX: Diesel Opacity First Retest Results

Diesel Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	9	8	1	11.11%
Trucks	1	1	0	0.00%
Total First Retests Diesel Opacity Tests	10	9	1	10.00%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

Table XXI: Diesel Opacity Subsequent Retest Results

Diesel Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	1	1	0	0.00%
Trucks	0	0	0	0.00%
Total Subsequent Diesel Opacity Tests	1	1	0	0.00%

(see Appendix "C" for detailed test volume by test type, model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

A diesel opacity test is performed on non-OBD diesel vehicles. A failure occurs when opacity is greater than 20%.

OBD MIL Codes

Table XXII: OBD MIL Codes

OBD Tests	MIL Commanded On **No** Codes Stored (Fail)	MIL Not Commanded On Codes Stored (Fail)	MIL Commanded On Codes Stored (Fail)	MIL Not Commanded On **No** Codes Stored (Pass)
Passenger Vehicles	0	13,275	4,597	183,662
Trucks	0	7,026	2,544	92,666
Total	0	20,301	7,141	276,328

(see Appendix "E" for detailed initial results for OBD MIL codes by model year and vehicle type and Appendix "D" for detailed initial test volume by AIRS, model year and vehicle type)

As the above table indicates there were no OBD vehicles tested that exhibited the MIL on that did not have a code stored. All these vehicles tested had codes stored when the MIL was commanded on. There were 20,301 vehicles tested with the MIL not commanded on and codes were stored. There were 7,141 vehicles tested with the MIL commanded on and the codes were stored. There were 276,328 vehicles that were tested with the MIL not commanded on, and no codes were stored, which resulted in the vehicle passing the test.

Gas Cap Test

The gas cap test is conducted on all non-OBD vehicles (model year 1995 and older). The following table indicates the results of the gas cap results.

Table XXIII: Initial Fuel Cap Results

Fuel Cap Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	21,778	21,539	239	1%
Trucks	8,482	8,380	102	1%
Total Initial Tests	30,260	29,919	341	1%

(see Appendix "F" for detailed fuel cap results by model year and vehicle type and Appendix "D" for detailed initial test volume by model year and AIRS)

Vehicles with No Know Final Outcome

Table XXIV: Vehicles with No Known Final Outcome

Initial Failure Results	Passenger Vehicles	Truck Vehicles	Total Initial Failures
Tests			
OBD Initial Failure	11,526	6,431	17,957
Transient Initial Failure	1,060	366	1,426
Two Speed Idle Initial Failure	1,095	488	1,583
Diesel OBD Initial Failure	26	2	28
Diesel Opacity Initial Failure	15	0	15
Total Initial Failures			**21,009**
Retest Pass Results			**Total Retest Pass Results**
OBD First Pass Retests	8,385	5,560	13,945
Transient First Pass Retests	704	270	974
Two Speed Idle First Pass Retests	565	333	898
Diesel OBD First Pass Retests	15	1	16
Diesel Opacity First Pass Retests	8	1	9
Total First Retest Pass			**15,842**
Subsequent Pass Results			**Total Subsequent Pass Results**
OBD Subsequent Pass Retests	703	404	1,107
Transient Subsequent Pass Retests	149	61	210
Two Speed Idle Subsequent Pass Retests	95	67	162
Diesel OBD Subsequent Pass Retests	0	0	0
Diesel Opacity Subsequent Pass Retests	1	0	1
Total Subsequent Retest			**1,480**
Totals			
Total Initial Failures	21,009		
First Retest Pass	-15,842		

Subsequent Retest Pass	-1,480		
Total	3,687		
Vehicles Failed in 2011 and re-tested in January, February, March 2012	-524		
Total Vehicles with No Known Final Outcome	3,163		

(see Appendix "G" for summary of vehicles with no known final outcome with model year, test type, vehicle type and vehicle Identification number (VIN) list of unknown vehicle outcome and VIN list of unknown vehicle outcome with 3 months lookup table)

As the above table indicates, there were a total of 21,009 initial vehicle failures during 2011. There were a total of 15,842 vehicles that passed the first retest and a total of 1,480 vehicles that passed a subsequent test, leaving a total of 3,687 vehicles with no known final outcome. However, there were 524 vehicles that failed the inspection during 2011 and were retested during January, February and March (2012) bringing the balance to 3,163 vehicles with no known final outcome.

These 3,163 vehicles may represent vehicles:

- Inspected during 2011, failed and still has not returned for an inspection before April 1, 2012
- have been moved out of Rhode Island, or
- have been scrapped, or are illegally operating with expired inspections

During 2011, the percentage of initially failed vehicles with no known final outcome has been reduced from 19% during 2010 to 15.1% during 2011.

4. Waivers

In Rhode Island, three different types of waivers are available if a vehicle fails the emissions test and a retest. The waiver types are:

- A diagnostic waiver applies to vehicle owners whose vehicles have all emission control devices in place and operating and no additional repairs are reasonably possible or because they are unable to get their vehicle repaired because the necessary emission parts are no longer available or no longer manufactured.

- A repair cost limit waiver is available for vehicle owners if the vehicle failed the emission test and the owner has spent a minimum of $700 on emission-related parts and/or labor (labor must be performed by a CIRT to qualify) and the vehicle still does not pass.

- A repair time delay waiver is available for vehicle owners who can prove financial hardship.

During 2011, there were a total of 137 waivers issued: 87 repair cost waivers, 47 repair time-delay waivers and 3 diagnostic waivers were issued. Of the 137 waivers issued, there were 7 time delay waivers and 1 diagnostic waiver issued during January, February and March 2011, due to the results of vehicles failing its initial test during the previous calendar year (2010) and completing the retest

in the following year (2011). The remaining 129 waivers were issued to vehicles that failed the inspection during 2011. The overall 2011 waiver rate is 0.65%. (see Appendix "H" for Waivers)

Table XXV: Waivers - Year by Year Comparison

Year	Number of Failed Vehicles	Waivers Granted	Waiver Rate
2000	36,090	1,568	4.30%
2001	21,223	440	2.07%
2002	31,473	219	0.70%
2003	32,152	221	0.69%
2004	28,126	126	0.45%
2005	28,585	151	0.53%
2006	21,923	96	0.44%
2007	18,174	70	0.39%
2008	17,814	53	0.30%
2009	27,241	149	0.55%
2010	24,458	125	0.51%
2011	21,009	137	0.65%

As the above table indicates in 2000, the first year of the I/M program, the waiver rate was slightly above the 3% estimated in the I/M SIP. Since 2001 the waiver rate has remained below 3%, potentially due to the continued training seminars and OBD training, resulting in improved repair effectiveness. Additionally, DMV continues to follow the strict guidelines defined in Rhode Island Motor Vehicle Safety and Emissions Control Regulation No.1, section 1.9.1 Waiver Requirements and Conditions.

5. Average Emission Reductions

Table XXVI:
Average Emissions Reductions after Repairs in 2011
(grams per mile)

	HC	CO	NO_x
Initial Test	4.33	52.65	2.84
Average Emissions After Repairs	0.90	7.68	1.08
Difference	3.43	44.97	1.76
Average Percent Reduction	79.21%	85.41%	61.97%

(see Appendix "I" for average emission reductions after repairs by model year and vehicle type)

The average emissions reduction after repairs is reported as an indicator of the effectiveness of the I/M program. These results indicate that the main objective of the program, to find high emitters and have them repaired, is being fulfilled.

Table XXVII:

Yearly Comparison HC, CO and NO_x Average Emissions Reductions after Repairs

Year	Average HC Reductions	Average CO Reductions	Average NO_x Reductions
2000	68.50%	81.10%	38.50%
2001	70.42%	82.03%	49.32%
2002	70.11%	81.56%	62.59%
2003	72.50%	82.84%	63.20%
2004	72.24%	82.87%	62.04%
2005	72.40%	82.34%	61.19%
2006	72.69%	82.36%	63.13%
2007	75.27%	80.76%	64.83%
2008	73.66%	83.71%	66.34%
2009	90.63%	84.69%	90.41%
2010	88.13%	89.93%	85.87%
2011	79.21%	85.41%	61.97%

The data in Table XXVII indicate that the emissions reductions after repairs for HC and CO has continued to remain high from 2000-2010, and the NO_x reduction has continued to remain high from 2002-2010. The emission reductions are the results of the repairs on the vehicles that have failed. The lower reductions in 2000 and 2001 for NOx indicate that the repair industry was not familiar with repairs for high emissions for the first two years of the I/M Program. During 2011, there was a slight increase for HC, CO and NO_x. This increase may be potentially due to the fact that the transient tests only accounted for only 6.1% of the fleet inspected. There were only 1,426 vehicles that failed an initial transient test (6.94%) and 974 of those vehicles were successfully repaired and passed a retest (80%). The remaining older vehicles on the road are becoming more difficult to locate, making them very difficult to repair.

6. Training

Rhode Island has two levels of technician training in the I/M Program. The first level is the Certified Inspection Technician (CIT). The second level is the Certified Inspection Repair Technician (CIRT).

There are two steps a technician must complete in order to become a CIT. The first step is to complete the training provided by DMV for the safety inspection portion of the I/M Program. The second step required is a four hour course provided by the Program Manager, training the CIT for the emissions inspection portion of the I/M Program. They are required to pass an exam before being

certified. CITs are certified only to perform vehicle safety and emission inspections.

The CITs certification is valid for two years. Re-certification was completed during 2010 and will be offered again during 2012.

CIRTs perform both inspections and repairs for motor vehicle safety and emissions issues. Only CIRTs can perform repairs whose costs qualify for the repair cost waiver. CIRTs are required to first obtain their CIT certification, then pass the RI CIRT written exam or possess an Automotive Service Excellence (ASE) Level 1 Advanced Engine Performance license. If a CIRT does not have their ASE L1 license, they have two years to obtain it to continue certification.

At the end of 2011, there were a total of 1339 active technicians in the network, including CITs and CIRTs.

This continued technician training and certification program, conducted over the years has helped to improve and sustain repair effectiveness as noted by the high level of emissions reductions after repairs as listed in Table XXVII.

7. Quality Assurance

Inspection Network Participation

At the end of December 2011, 289 inspection stations, representing 289 lanes, were in the inspection network throughout the state. The number of Authorized Inspection Repair Stations has remained steady during the duration of the program ranging from 287-294. The continued level of participation is an indicator of the good health of Rhode Island's I/M program.

Audit Types

Auditing continues to provide a direct oversight of the testing process and ensures that accurate quality inspections are being conducted by (AIRS). Overt, covert and computer auditing are employed in the Rhode Island Emissions & Safety Inspection Program. Auditing is conducted by DMV and the Program Manager.

The Program Manger performs: overt visual audits, covert visual audits, covert vehicle audits, gas bench audits, vehicle mass analysis system (VMAS) audits, zero air generator (ZAG) maintenance and covert digital audits including OBD fraud digital auditing with VIN mismatches, OBD readiness monitor mismatches and all OBD parameters. The results of these audits and any irregularities discovered are noted and reported to DMV and DEM via e-mail notifications.

Overt Visual Audits

The overt visual audits consist of checking the reliability of the testing equipment, observation of an inspection, the legibility of the stickers

and missing and or voided stickers. The voided stickers are picked up and stored in a secure location with the Program Manager. If there are stickers missing, the AIRS are required to fill out a police report and submit it to DMV and DMV personnel will follow up on the report.

Covert Visual Audits

The covert visual audits consist of observing a vehicle inspection while unseen and from a distance.

Covert Vehicle Audits

The covert vehicle audits during 2011, involved one undercover auditor and one covert vehicle (2004) Dodge Stratus, that was purchased by SysTech International, the Program Manager.

The DMV and the Program Manager rigged the covert vehicle to fail emissions and safety inspections. The emissions failures were set to fail an on-board diagnostics (OBD) emissions test by removing the Malfunction Illumination Light (MIL) bulb, disabling the (O_2) oxygen sensor to simulate a NO_x failure, and removing the O-ring from the fuel gas cap. The safety failures were set to fail by removing the left headlamp and inducing an exhaust leak at the resonator.

A baseline inspection was conducted by the DMV prior to the covert vehicle audit and compared to the results of the station inspection and a post inspection confirmation audit.

Covert OBD Digital Auditing

The OBD covert digital auditing consists of an analysis of inspection data to uncover any irregularities and unusual testing patterns, including OBD VIN mismatches, OBD readiness monitor mismatches, and all OBD parameters. These inspection tests are scanned daily for any inconsistencies in the data. If any inconsistencies are found, a trigger is set resulting in an e-mail notification to the DEM and DMV for enforcement consideration.

Audit Activity

Overt Audits

The Division of Motor Vehicle and the Program Manager conducts overt visual audits to assure adherence to program procedures and regulations. The audit is a visual performance audit that consists of an observation of test procedures, observation of an inspection, inspection of the workplace, a check of AIRS signage and certificate posting and an examination of testing records. (see Appendix "J" Audit Types)

A total of approximately two thousand five hundred and twenty overt audits were conducted by DMV and the Program Manager during 2011. DMV conducted

approximately 1,320 overt audits and the Program Manager conducted 1,200. There were 21 voided stickers and 81 missing stickers during 2011.

Covert Audits

The Program Manager was required to complete one covert visual audit per year for each station (289) and 50 covert vehicle audits annually.

During 2011, the Program Manager performed one covert visual per station for a total of 288 covert visual audits and 50 covert vehicle audits during the year.

During 2011, there was one AIRS in the network that did not receive a covert visual audit.

The covert vehicle was presented at 50 AIRS. However, the vehicle was turned away twice, once because the AIRS wanted the auditor to leave the vehicle overnight to inspect the vehicle and in the second instance, the dealership refused to inspect the vehicle because the vehicle was not purchased from their dealership.

OBD Digital Auditing

During 2011, the Program Manager performed 508 automated digital audits by scanning the VID (Vehicle Information Database) for any mismatches for OBD VIN, OBD readiness monitor mismatches and all OBD parameters. These inspection tests are scanned daily for any inconsistencies in the data. If any inconsistencies are found, a trigger is set resulting in an e-mail notification to the DEM and DMV for enforcement consideration.

The enforcement on the I/M Program has increased during 2011 as a result of this OBD Digital Auditing.

Gas Bench Audits

During 2011, the Program Manager performed 286 on-site gas bench audits, including an additional 15 (retests) bringing the total to 301 on-site gas bench audits on each analyzer at the AIRS, including the DMV facility, to ensure the integrity and functionality of the gas benches in the equipment. Each facility received a five point (zero, low, mid low, mid high and high) gas bench audit. These audits ensure the integrity and the functionality of the gas benches used during non-OBD inspections. The failure rate was 25%. Failed units were repaired to proper operating conditions.

Vehicle Mass Analysis System (VMAS) Audits

The workstation analyzer and VMAS together provide mass emission measurement capability during non-OBD inspections. The analyzer measures HC, CO, O_2 and NO_x concentrations by drawing samples from inside the vehicle tailpipe and conducting chemical analyses of the samples.

During 2011, the Program Manager performed 286 VMAS maintenance audits at the AIRS. The VMAS tubes were audited and if the equipment needed calibration or replacement, a service call for on-site maintenance was placed. These audits assure the integrity of the non-OBD emissions test.

There were three AIRS that did not receive a VMAS analysis system audit by the Program Manager.

Zero Air Generator (ZAG) Maintenance

During 2011, the Program Manager continued to follow the manufacturer recommendation for the maintenance on the ZAGs at all 288 AIRS, which included the NO_x scrubber, catalytic cylinder, pre-filter element, and the high grade inline particulate filter. This maintenance is performed per manufacture recommendation to ensure the integrity and the functionality of the ZAG to produce "zero air" (for use in equipment calibration for non-OBD inspections).

Audit Results

Verbal warnings are issued for each incident of violation. Formal hearings require an escalation of severity of infractions and documented evidence. During 2011, there were a total of 186 hearings; 88 formal hearings were conducted for the Authorized Inspection and Repair Station (AIRS), 93 formal hearings were conducted for the Certified Inspection Technicians (CITs) as a result of the covert OBD fraud digital auditing and 5 formal hearings were conducted as the results of the Covert Vehicle Audits.

During 2011, there were eight AIRS closed down as a result of overt performance audits, and 67 AIRS that were suspended by the state for violating the conditions of the inspection permit. The Program Manager had a difficult time gaining entrance to these AIRS.

The results of the hearings are as follows:

Table XXVIII: Enforcement Statistics

2011	Total Hearings	9 Days	10 Days	12 Days	15 Days	20 Days	23 Days	28 Days	30 Days
AIRS	88	1	29	1	3	2	1	1	19
CITS	93	1	31	1	2	3	1	1	23
Total Hearings	181								

2011	60 Days	180 Days	1 Year	Re-voked	In-definite	Dis-Missed	Warning Notices	Reheard at Later Date	**Total Suspensions**
AIRS	0	2	0	5	3	1	17	3	**67**
CITS	1	1	1	11	9	0	4	3	**86**
Total Suspensions									**153**

Sixty-seven AIRS were suspended for violating the conditions of the inspection permit

- One was suspended for 9 days
- Twenty-nine were suspended for 10 days
- One was suspended for 12 days
- Three were suspended for 15 days
- Two were suspended for 20 days
- One was suspended for 23 days
- One was suspended for 28 days
- Nineteen were suspended for 30 days
- Two were suspended for 180 days
- Five had their licenses revoked
- Three were suspended indefinitely
- One case was dismissed
- Seventeen were issued a warning for violating the conditions of the inspection permit
- Three cases were scheduled to be reheard at a later date.
- There was one monetary fine issued for $500. to an AIRS

Eighty-six CITs were suspended for conducting improper inspections:

- One was suspended for 9 days
- Thirty-one were suspended for 10 days
- One was suspended for 12 days
- Two were suspended for 15 days
- Three were suspended for 20 days
- One was suspended for 23 days
- One was suspended for 28 days
- Twenty-three were suspended for 30 days
- One was suspended for 60 days
- One was suspended for 180 days
- One was suspended for 1 year
- Eleven had their licenses' revoked
- Nine were suspended indefinitely
- Four were issued a warning notice for violating the conditions of the inspection permit
- Three of the cases were scheduled to be reheard at a later date.

The following table indicates the results of the Covert Vehicle Audits.

Table XXIX: Covert Vehicle Enforcement Statistics

2011	Total Hearings	10 Day Suspension	Official Warning Letters Issued
AIRS	3		3
CITS	2	1	1
Total	5	1	4

During 2011, the Program Manager was scheduled to complete 50 covert vehicle audits. The vehicle was presented at 50 AIRS.

Of the 50 covert vehicle audits performed by the Program Manger, the vehicle was turned away twice, once because the AIRS wanted the auditor to leave the vehicle overnight to inspect the vehicle and, in the second instance, the dealership refused to inspect the vehicle because the vehicle was not purchased from their dealership.

All forty-eight covert vehicle audit inspections failed for emissions and safety as expected, however there were an additional 82 violations found by the auditor during the covert vehicle inspections.

DMV called in three of the AIRS and two of the CITS for formal hearings held on February 22, 2012 for the inspection violations performed during 2011. All three AIRS and one of the CITs were issued a written official warning letter and one CIT was suspended for 10 days.

The DMV also issued 35 official warning letters to the AIRS and 32 official warning letters to the CITS for performing improper covert vehicle inspections, i.e., failure to enter the dashboard MIL result properly, failure to perform the gas cap visual inspection properly, and failure to submit the full Vehicle Inspection Report (VIR) and safety violations. DMV also issued six letters to the AIRS and to the CITS for performing proper inspections in accordance with all the regulations and procedures.

The schedule of penalties calls for a first violation penalty of a minimum of ten day suspension, a second violation requires a minimum of thirty days; the third and subsequent violations are subject to a suspension of authorization to inspect motor vehicles for a minimum of six months for each separate violation. In addition to the suspension penalties the Administrator may, at his discretion, impose a fine of up to $1,000. Reinstatement may be requested by the station owner at the end of a suspension period. The reinstatement shall be at the discretion of the hearing board or the Administrator. (see Appendix "K" DMV Safety and Emissions Control Regulation No. 1, section 1.15)

8. Enforcement

Vehicles Subject to Inspection

As of December 2011, approximately 771,529 light duty vehicles were registered with DMV. The actual number of vehicles requiring inspection during 2011 can be estimated from the total number of vehicles registered. Additionally, because the requirement for inspection exempts vehicles 25 years old and older and vehicles two years old or newer, the number of vehicles subject to inspection in a given year is also impacted. Reviewing the registration data as of December 2011, and assuming a 50-50 biennial split, as few as 324,157 and as many as 340,898 vehicles may have been required to be inspected during 2011. Based on data from the Program Manager, 337,659 vehicles were actually inspected, which falls in the range of the estimated total number of vehicles registered.

Table XXX: Vehicles Subject to Inspection

Vehicles Subject to Inspection	**2008**	**2009**	**2010**	**2011**
Registered with DMV	808,468	800,992	777,420	771,529
As few vehicles as:	331,366	333,620	325,657	324,157
As many vehicles as:	354,432	357,705	347,050	340,898
Vehicles Inspected	330,580	335,750	344,505	337,659
Vehicles possibly not in compliance	23,852	21,955	2,545	3,239
Total Percentage	6.7%	6.1%	.74%	.95%

As the above table indicates, the non-compliance rate has decreased significantly since 2008. This is due to the decrease in the number of vehicles registered with the DMV and the number of estimated vehicles required to be inspected; excluding the exempt vehicles. During 2011, it is estimated that as many as 340,898 vehicles were required to be inspected, and there were 337,659 vehicles actually inspected. This leaves an estimated balance of 3,239 (.95%) registered vehicles that possibly bypassed the inspection program in 2011.

These un-inspected vehicles may be parked on the owner's property and are not being used, or may be on the road with expired or fraudulent inspection stickers.
(see Appendix "L" Vehicles Subject to Inspection)

Preventing False Registration by Motorist

The I/M program in Rhode Island covers the entire state, so it is not possible for a vehicle owner to falsely register any vehicle out of the program area. Inspectors are instructed to verify that the fuel type and the gross vehicle weight (GVWR) indicated on the vehicle's registration form are accurate. The inspector will check the information on the label on the inside of the door to see if the correct information can be obtained.

Motorist Enforcement Measures

Sticker Based Enforcement

The inspection sticker has continued throughout the years to be the primary inspection enforcement tool. This highly visible means of recognition allows police agencies to quickly determine a vehicle's compliance status. DMV continues to provide information to the municipal police and the State Police regarding the features of the inspection stickers. Any law enforcement officer or an agent of DMV may demand to inspect any compliance device (sticker) or compliance document (inspection report or waiver) issued through the Rhode Island I/M Program. (see Appendix "K" DMV Safety and Emissions Control Regulation No. 1, section 1.4)

The State Police and municipal police continue to enforce motorists' compliance by pulling vehicles over if an inspection sticker is not valid. During 2011 approximately 12,334 "five-day notice and demand tags" were issued by the police. The notice and demand tags require an inspection be completed within five days. About 79.4% or 9,796 vehicles complied with the five-day notice and demand tags. The DMV suspended the registration of 2,538 vehicles whose owners failed to reply to the notice and demand tags. (see Appendix "M" Notice and Demand form)

During November 2011, there was one road side check conducted in the state by the DMV and the Local Police. During this check there were 89 vehicles found to be out of compliance. There were 34 vehicles found to have invalid inspection stickers and there were a total of 55 safety violations founds. The DMV and the Local Police issued "five-day notice and demand tags" for each vehicle out of compliance. DMV suspended the registration of 40 vehicle owners who failed to reply to the notice and demand tags. Of the 40 vehicles that were suspended 60% eventually complied.

The data for 2011 for the "five day notice and demand tags" has been estimated because DMV did not have the personnel to compile the data records during the year.

Registration Denial

DMV receives data from the Program Manager when vehicles are inspected. Based on DMV records from previous inspections, a notice of action (notice) is mailed out to vehicle owners who have failed to obtain a vehicle inspection when due. The notice indicates the vehicle owner has 30 days to obtain an inspection before the vehicle's registration is suspended. At the end of 30 days, if the vehicle has not passed an inspection based on the daily data submission from the Program Manager, the registration is suspended in the DMV registration database. Due to limitations in DMV's existing data management system, it is not possible to determine the day to day status of these notices. Additionally, it is not possible to know how many notices were mailed each day during 2011; however, we do know that approximately 40,466 notices were outstanding as of the end of December 2011. (see Appendix "N" Notice of Action Form)

When the new state wide computer system is implemented, the registration data will allow us to track the actual number of notices mailed each day and to track the compliance status of these notices.

Enforcement Against, AIRS, Program Manager and DMV Personnel

Program Manager

There were no enforcement actions taken against the Program Manager during 2011.

Inspection Stations and Inspectors

Authorized Inspection and Repair Station (AIRS)

During 2011, a total of seventy AIRS were suspended for violating the conditions of the inspection permit. (see table XXVIII).

DMV held a total of eighty-eight hearings during the year for the AIRS related to the OBD fraud digital auditing and three hearings for the AIRS related to the covert vehicle audits. The AIRS were given an opportunity to review all complaints in their files and to explain why they performed improper inspections. (see Table XXVIII) and (Table XXIX) Enforcement Statistics

Inspectors

During 2011, a total of eighty-eight CITs were suspended for violating the conditions of the inspection permit. (see table XXVIII).

DMV held a total of ninety-three hearings during the year for the CITs related to the OBD fraud digital auditing and two hearings related to the covert vehicle auditing. The CITs were given an opportunity to review all complaints in their files and to explain why they performed improper inspections. (see Table XXVIII) and (Table XXIX) Enforcement Statistics

The Rhode Island Motor Vehicle Safety and Emissions Control Regulation No. 1, section 1.14. allows the withdrawal of the designation as a CIRT or CIT by the State for good cause at any time.

DMV Auditors and Other Personnel

DMV auditors must adhere to specific procedures and follow a checklist when conducting an audit. The work of DMV auditors is scrutinized by their immediate supervisor on a daily basis.

9. Public Outreach

The "RI Emissions Safety Testing" newsletters were produced during June and December 2011, and were distributed to the AIRS throughout the state. The newsletters continue to be an excellent source of information for technicians and

cover a variety of topics including: Fraud and Suspension, Inspection Tips, ISO Certification (International Organization for Standardization) the source of families of quality and environmental management standards, certified training and information on the new software releases. (see Appendix "O" Newsletters)

The network computer system and station computer displays, continue to be used to provide program updates for CIRT exam sessions, training seminars and technical bulletins to the AIRS. The program's website at www.riinspection.com was used during this reporting year to outreach to the general public.

Appendix "A"

Roadside Evaluation of Program Effectiveness

Appendix "B"

SysTech Reporting Services/RI EPA Reports Data

Appendix "C"

Detailed Test Volume by Test Type, Model Year and Vehicle Type for:

- **Initial Vehicle Tests**
- **Failures of Initial Test and Percentages of Total Failures**
- **First Retests by Failure Rate**
- **Subsequent Retest by Failure Rate**
- **OBD (Non-Diesel) Comparison Chart**

Appendix "D"

Initial Test Volume by AIRS, Model Year and Vehicle Type (CD Attached)

Appendix "E"

Detailed Initial OBD Mil Codes by Model Year and Vehicle Type

- **MIL commanded on and no codes are stored**
- **Mil is not commanded on and codes are stored**
- **Mil commanded on and codes are stored**
- **Mil is not commanded on and no codes are stored**

Appendix "F"

Detailed Fuel Cap Test Results by Model Year and Vehicle Type

- **Initial Vehicle Tests**
- **Failures of Initial Test and Percentages of Total Failures**

Appendix "G"

Vehicles with No Known Final Outcome and Summary for:

- **Detailed Initial Failure Results by Model Year, Test Type and Vehicle Type**
- **Detailed Retest Pass Results by Model Year, Test Type and Vehicle Type**
- **Detailed Retest Subsequent Pass Results by Model Year, Test Type and Vehicle Type**

Vehicle Identification Number (VIN) List of Vehicles with No Known Outcome and with 3 Months Lookup Table for:

- **(VIN) Number of Vehicles Tested**
- **Last Test Date**
- **Vehicle Type**
- **Model Year**
- **Type of Fuel**
- **Last Test Type**
- **Last Test Count**
- **Later Pass Date**

Appendix "H"

Initially Failed Vehicles Receiving a Waiver by Model Year, Make and Model

Appendix "I"

Average Emission Reductions after Repairs by Model Year and Vehicle Type

Appendix "J"

<u>Audit Types</u>

- **Covert Vehicle Audits**
- **Covert Visual Audits**
- **Overt Station Visual Audits**
- **DMV Quality Assurance Performance Audits**
- **Gas Bench Audits**
- **Vehicle Mass Analysis System (VMAS) Audits**
- **Digital Auditing**

Appendix "K"

Rhode Island Motor Vehicle Inspection/Maintenance Program Regulation
Division of Motor Vehicles Safety and Emissions Control Regulation No. 1

Appendix "L"

Vehicles Subject to Inspection

Appendix "M"

Notice and Demand Form

Appendix "N"

Registration Denial
Notice of Action Form

Appendix "O"

RI Emissions Safety Testing Newsletters