

**New York State Department of Environmental Conservation  
Division of Air Resources**

**New York State  
Program Evaluation Report**

**Enhanced Inspection/Maintenance (I/M) Programs:  
NYTEST and NYVIP**

**Period of June 30, 2010 – June 30, 2012**

**October 2012**

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New York State Enhanced Inspection/Maintenance Programs  
Program Evaluation Report for the Period of 6/30/10 - 6/30/12

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## **A. EXECUTIVE SUMMARY**

Biennial long-term program evaluations are required for enhanced I/M programs under 40 CFR Part 51.353(c)(1) of the federal Inspection/Maintenance (I/M) rule. Program evaluation provides a mechanism for I/M jurisdictions to evaluate the effectiveness of their programs, and if appropriate, to make enhancements to operating programs. The New York State Department of Environmental Conservation (DEC) submitted six biennial program evaluations to the United States Environmental Protection Agency (EPA), as dated January 2001, November 2002, October 2004, February 2007, March 2009, and October 2010. This document retains the reporting format used for the past submissions.

DEC and the New York State Department of Motor Vehicles (DMV) jointly administer New York's I/M programs. During the June 30, 2010 to June 30, 2012 evaluation period, New York State operated two enhanced I/M programs, the New York Transient Emissions Short Test (NYTEST) and the New York Vehicle Inspection Program (NYVIP). The NYTEST program formally ended on December 31, 2010, and the last calendar year (2010) of NYTEST emissions inspection data was evaluated as part of this report.

The NYTEST and NYVIP programs have effectively reduced hydrocarbon, carbon monoxide, and nitrogen oxide emissions from applicable motor vehicles through required emissions inspections and proper vehicle maintenance and repair. This report also details the overall progression of New York's enhanced I/M programs.

The following components that have contributed to the effectiveness of NYVIP and NYTEST programs:

1. New York State requires mandatory, statewide (62 counties) emissions inspections on an annual frequency and upon change of ownership. The 53-county "Upstate I/M Area" complies with the Ozone Transport Region (OTR) low enhanced I/M performance standard defined under the Code of Federal Regulations (CFR), Title 40, Chapter I, Subpart S, §51.351(h). The 9-county New York Metropolitan Area (NYMA) complies with the high enhanced performance standard defined under §51.351(f);
2. Through the combination of sticker-based and registration-based denial enforcement (RBE), New York's motorist compliance rate exceeds the minimum performance standard requirements for enhanced I/M programs;
3. Since May 2005, mandatory on-board diagnostic (OBD II) inspections have been required statewide. New York's on-board diagnostics emissions inspection was developed in accordance with EPA's final OBD implementation guidance and 40 CFR Parts 51 and 86. New York outlined the components of the OBD II-based NYVIP program within its March 2006 and July 2009 State Implementation Plan (SIP) revisions;
4. EPA approved the NYTEST transient test relative to the model transient I/M test ("IM240"). NYTEST received 95% of the available credit for hydrocarbon emissions, 99% of the available credit for carbon monoxide emissions, and 99% of the available credit for oxides of nitrogen (NO<sub>x</sub>) emissions. The NYTEST I/M program operated at "final" cutpoints from April 1, 2003 to its termination date.
5. New York State developed a comprehensive diagnostic and repair procedure to insure that vehicles failing the NYTEST transient test received effective, long term repairs. I/M program data confirmed that vehicles failing the NYTEST I/M inspection received repairs that last more than two years;

6. The Departments completed sticker compliance, NYTEST equipment, and program (enforcement) audits to ensure that New York's I/M programs maximize emission reductions; and
7. Since December 2003, the New York City Taxi and Limousine Commission (TLC) has operated a centralized, test-only OBDII inspection facility in Queens (Woodside). Applicable yellow medallion taxi cabs and for-hire livery vehicles are required to receive safety/emissions inspections three times a year.

## **B. BACKGROUND**

The NYTEST I/M program operated from 1998 to 2010 within the 9-County New York Metropolitan Area (NYMA). NYMA includes New York City (Bronx, Kings, New York, Queens, and Richmond Counties), Long Island (Nassau and Suffolk Counties), Rockland County, and Westchester County. The NYTEST program was an enhancement to the existing NY idle testing program previously implemented in 1981. NYTEST I/M featured tailpipe emissions testing for applicable motor vehicles 25 model years old to 2 model years old.

EPA revised the federal I/M regulation to include onboard diagnostic (OBD) emissions inspections in 2001. This change occurred after the NYTEST start date. As an interim measure, optional OBD testing was offered by two of the three NYTEST equipment providers in 2004 and 2005. Beginning in May 2005, statewide mandatory OBD testing was required through the NYVIP equipment. Therefore, from May 2005 to December 2010, licensed inspection stations within NYMA were required to operate both NYTEST and NYVIP equipment.

Beginning in September 2008, NYMA stations were offered the option to participate in the NYTEST "Shared Network" program. This interim program provided a means to balance the reduced need for NYTEST inspections while providing a sufficient number of NYTEST stations for motorist convenience (see discussion under Section C).

Since January 1, 2011, New York State has met I/M requirements and clear air obligations through the statewide NYVIP I/M program. NYVIP features OBD II and low enhanced emissions inspections for applicable vehicles. Presently, there are approximately 3,700 and 6,400 licensed inspection stations operating within NYMA and the Upstate I/M areas, respectively.

Beginning on July 1, 2012, all applicable light-duty diesel vehicles (MY1997 to 2 model years old) have been required to receive statewide OBDII inspections through NYVIP.

Table 1 below provides a summary of the NYVIP and NYTEST I/M programs during Calendar Year 2010:

TABLE 1 : I/M Program Summary (2010)

COMPONENT	NYTEST	NYVIP
Network Type	Decentralized Test-and-Repair	Decentralized Test-and-Repair
Geographic Distribution	9-County NYMA	Statewide (62 Counties)
Test Frequency	Annual / Change of Ownership	Annual / Change of Ownership
Fuel Type	All non-diesel and non-electric fuels	All non-diesel and non-electric fuels
Vehicle Type Coverage	- Light Duty Vehicles and Trucks; - Vehicles >8,500 lbs.	- Light Duty Vehicles & Trucks; - Vehicles 8,501 to 18,000 lbs. (Upstate Only)
Model Year Coverage (Emissions, Test Type)	<u>NYMA</u> a. 25 MYs old to MY1995, and less ≤ 8,500 lbs (NYTEST transient) b. 25 MYs old to 2 MYs old, and >8,500 lbs (NYTEST idle)	<u>NYMA</u> MY1996 to 2 MYs old, and ≤ 8,500 lbs GVWR (OBDII) <u>Upstate</u> 25 MYs old to 2 MYs old (OBDII or low enhanced, determined by MY and GVWR)
Evaporative Emissions	Vehicles subject to NYTEST also received a gas cap integrity (pressure) test.	OBD II (MY1996 to 2 MYs old)

Table 2 below provides a summary of the revised NYVIP I/M program during the period of January 1, 2011 to June 30, 2012:

TABLE 2 : I/M Program Summary (January 1, 2011 to June 30, 2012)

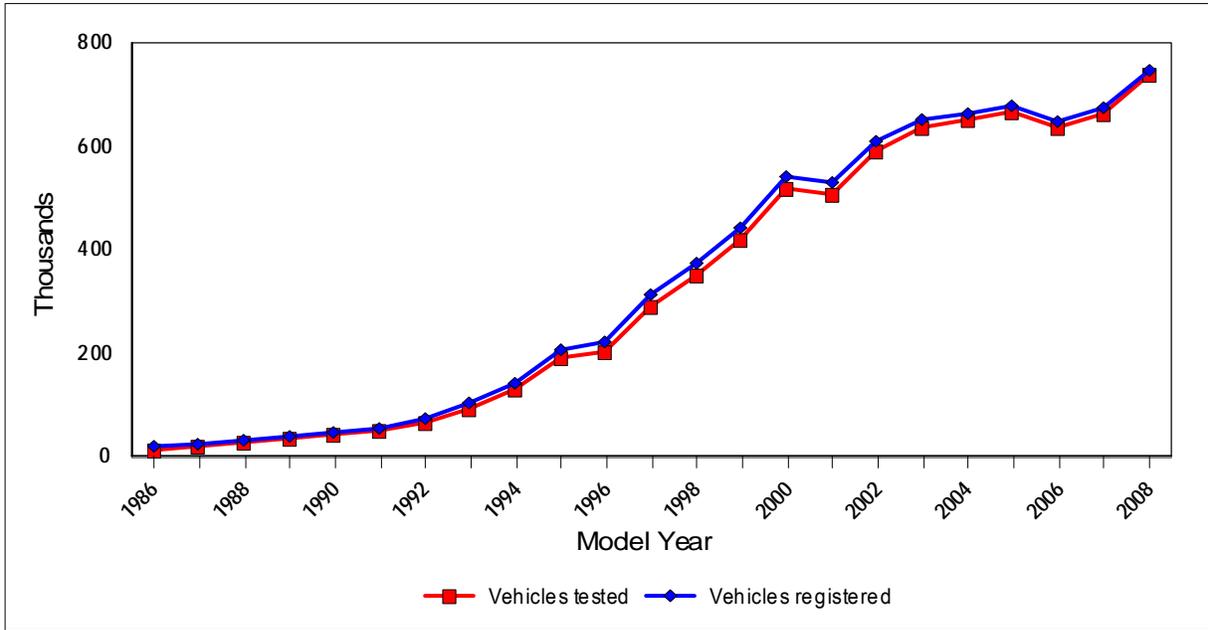
COMPONENT	NYVIP
Network Type	Decentralized Test-and-Repair
Geographic Distribution	Statewide (62 Counties)
Test Frequency	Annual / Change of Ownership
Fuel Type	All non-diesel and non-electric fuels
Vehicle Type Coverage and Emissions Test Type	<u>Light Duty Vehicles &amp; Trucks up to 8,500 lbs GVWR</u> - MY1996 to 2 MYs old: OBD - 25 MYs old to MY1995: low enhanced <u>Medium and Heavy Duty Vehicles, 8,500 lbs up to 18,000 lbs: low enhanced</u>
Model Year Coverage (Emissions)	Statewide 25 MYs old to 2 MYs old
Evaporative Emissions	OBD II

### C. Motorist Compliance

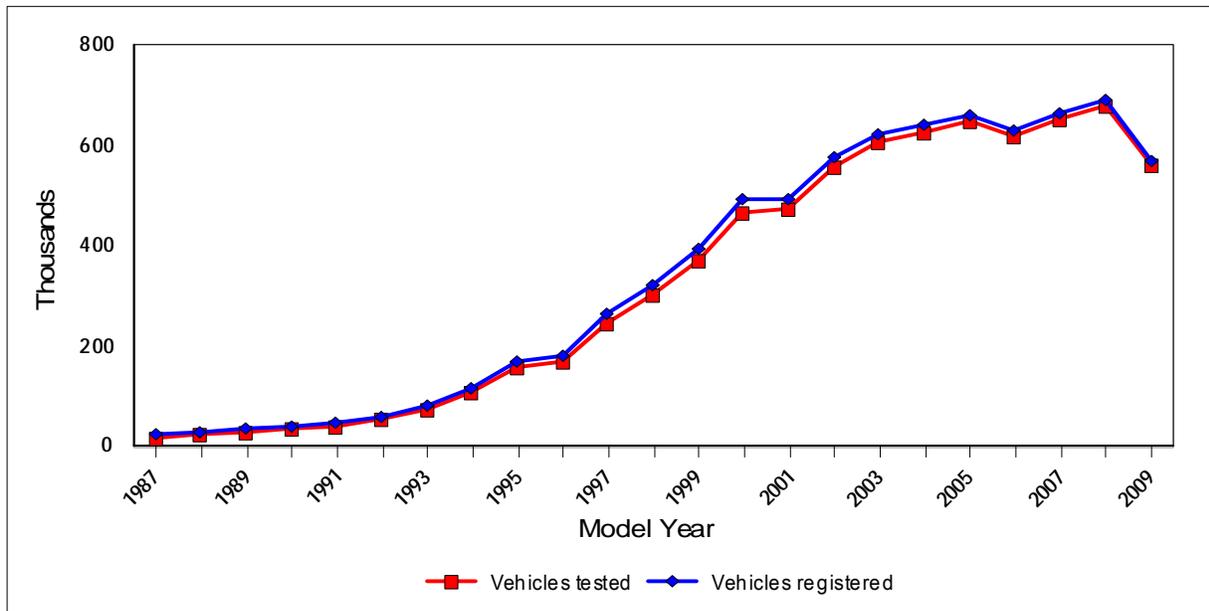
Comparison of Registered Vehicles and Vehicles Receiving Emissions Inspections – Statewide vehicle counts for Calendar Years 2010 and 2011, as derived from the NYS DMV registration database, are presented in Appendix A.

The Departments completed comparisons of the estimated number of emissions inspections (based on DMV registration data) versus actual I/M emissions inspections within the Calendar Year 2010 and Calendar Year 2011 “Enhanced I/M Annual Reports.” The Calendar Year 2010 comparison includes NYVIP and NYTEST emissions inspections, while the Calendar Year 2011 comparison is based solely on NYVIP emissions inspections. The statewide results are presented below as Graphs 1 and 2:

GRAPH 1 : Emissions Applicable Registrations vs. Initial Emissions Inspections  
(Statewide, Calendar Year 2010)



GRAPH 2 : Emissions Applicable Registrations vs. Initial Emissions Inspections  
(Statewide, Calendar Year 2011)



The screening procedure used to determine I/M applicability from DMV registration data is included within Appendix B. Several factors add to the overall uncertainty of this type of comparison:

1. The analysis must screen the registration file to exclude registrations exempt from emissions testing by regulation (i.e., exempt registration codes, vehicle age, vehicle weight, vehicle fuel type, or county of registration);
2. New York State's annual inspection frequency differs from the biennial registration renewal cycle. As such, the comparison must include a "look back" period exceeding 12 months to search for emissions inspections from a fixed registration file date (i.e., "look back" 15 months from DMV registration data collected on March 8, 2011);
3. The statewide vehicle registration file represents New York State's vehicle registrations on the given day that the DMV database query was completed; and
4. The NYVIP inspection software, by design, does not determine emissions test applicability in the same manner as the former NYTEST inspection software. The more recent NYVIP software determines vehicle model year and weight (actually  $\leq 8,500$  lbs GVWR) based on a VIN validation sequence. The NYVIP VIN-decoded data fields are deemed more appropriate/accurate than similar data fields contained within the DMV registration file.

#### NYMA Sticker Compliance:

Statewide sticker compliance surveys provide an independent assessment of motorist I/M compliance based on field audits. DMV conducts quarterly sticker compliance surveys, and Appendix C includes the results for Calendar Years 2010, 2011, and the first two quarters of Calendar Year 2012. The sticker compliance surveys show that the compliance rate for the combined NYTEST/NYVIP programs (2010) and the NYVIP program alone (CY2011, CY2012 Q1/Q2) exceed 96%.

#### **D. NEW YORK TRANSIENT EMISSION SHORT TEST (NYTEST) I/M PROGRAM**

New York completed the following activities related to the NYTEST I/M program until its termination on December 31, 2010:

NYTEST Quality Assurance/Quality Control Checks - New York State required a seven-day calibration period on its NYTEST analyzers. The adequacy of this time period was confirmed during a DEC NYTEST analyzer drift study completed in 2002.

NYTEST Equipment Audit Results - DEC initiated limited equipment audits at NYTEST stations on March 21, 2001. The preliminary audit consisted of several analyzer sampling system checks (including the "S-tube," flex probe tip, filters, and sampling hose), an examination of on-board calibration gases (to insure they were BAR97 certified and within the labeled expiration dates), a gas cap pressure tester functionality check, and a check for the current approved version of software. The main purpose of these limited audits was to insure the overall reliability of sampling systems.

DEC subsequently required a NYTEST software update to allow for a more comprehensive equipment audit. This update mandated changes to include a gas injection audit and the transmission of calibration and audit data through the NYTEST equipment. DEC audit staff commenced the expanded equipment audits beginning on August 1, 2001. The upgraded audit consisted of:

1. a leak check;
2. a check of the sample system flow;
3. a gas analyzer audit with the ability to inject both audit gases and the on-board gases through the sampling system or through the calibration port;
4. a VMAS flow rate audit using a smooth approach orifice;
5. on-board calibration gas check (to insure they are BAR97 certified and not expired); and
6. a gas cap tester functional check

Upon completion of a NYTEST equipment audit, the DEC auditor provides the station manager with a copy of the equipment audit form. This form lists the audit results and any supporting information. When the NYTEST equipment failed an equipment audit, the station manager was given written notice. The notice instructed the inspection station that it could no longer perform inspections until all necessary repairs were completed. The station was required to provide DEC with written documentation of such repairs. If the inspection station failed to document repairs, DEC contacted the station. If proper repairs were not made, DEC requested DMV to place an administrative stop on the inspection station. This prevented the station from conducting further inspections.

DEC equipment audit results for Calendar Years 2008, 2009, and 2010 are presented below in the Table 3. The number of NYTEST stations in business at any time fluctuates during any calendar year. The reported “Total Inspection Stations” include all NYTEST stations that reported inspection data for a given calendar year. DEC’s NYTEST equipment audit criteria can be found in Appendix D.

TABLE 3 : DEC Equipment Audit Results (NYTEST)  
(Calendar Years 2008, 2009, and 2010)

Category	Year 2008		Year 2009		Year 2010	
	Count	%	Count	%	Count	%
Total # of Audits <sup>1</sup>	1,738		1,616		1,256	
# of Stations Passed the Audit	1,135	65.30	969	59.96	794	63.22
# of Stations Failed the Audit	603	34.70	647	40.04	462	36.78
Reason for Audit Failure						
a. Failed Gas Audit	73	4.20	69	4.27	91	7.25
b. Failed Vmas Flow Check	50	2.88	47	2.91	22	1.75
c. Failed Gas Cap Tester	52	2.99	86	5.32	52	4.14
d. Failed On-Board Gas	62	3.57	134	8.29	120	9.55
e. Failed System Flow Check	38	2.19	48	2.97	33	2.63
f. Failed Leak Check	339	19.51	243	15.04	174	13.85
g. Total Number of Shutdowns	87	5.01	115	7.12	51	2.63
Total Inspection Stations	3,903		3,659		3,665	

### **Repair Effectiveness**

**NYTEST Diagnostic and Repair Procedure** - An essential component of any I/M program is to complete effective repairs on those vehicles that fail the required emissions test. In 1996, New York obtained funding under the Congestion Mitigation and Air Quality Control (CMAQ) program to conduct a repair effectiveness study for the NYTEST program. The main objective was to develop a comprehensive diagnostic and repair procedure for vehicles that fail the official NYTEST inspection.

The study design required that vehicles failing EPA's model IM240 transient test be repaired by qualified technicians using two diagnostic and repair procedures. The results from both procedures were evaluated and a single NYTEST diagnostic and repair procedure was finalized. The final procedure was printed on a laminated 2-sheet handout and mailed to all NYTEST inspection stations. A copy of this procedure can be found in Appendix E. Additional information related to the CMAQ repair effectiveness study can be found in the 2002-2004 biennial program evaluation report.

<sup>1</sup> Some inspection stations were audited more than once.

## **NYTEST Emissions Inspection Data**

Software Updates – The Departments periodically required the NYTEST equipment providers to upgrade their inspection software to correct issues or to implement program enhancements. New York State did not require any NYTEST software updates during the program evaluation period. ESP did submit a software revision to resolve a sticker loading issue, and the Departments approved ESP software version 1001 on August 9, 2010.

Effectiveness of NYTEST Repairs - To evaluate the effectiveness of NYTEST I/M repairs, DEC queried the NYTEST inspection database during Calendar Year 2008 for vehicles meeting the following conditions:

1. Vehicles failed their initial NYTEST transient tailpipe inspection;
2. Vehicles were repaired, and repair costs were documented within the inspection record; and
3. Vehicles were found to pass a NYTEST re-inspection.

The initial query yielded 8,693 vehicles meeting the three conditions. The VINs for these vehicles were matched to the following year's database (CY 2009) which resulted in 5,034 matches (i.e., inspection records for 5,034 of the initial 8,693 vehicles were found again). Similarly, the CY 2010 database was queried to identify the same vehicles that initially failed in 2008 that were again tested in 2010. The results, as presented in the Table 4, indicate that the majority of NYTEST repairs were still effective after two years.

TABLE 4: NYTEST I/M Repair Effectiveness

Year	# of Vehicles	Passed HC	Passed CO	Passed NOx
2008	8,693	8,693 (100%)	8,693 (100%)	8,693 (100%)
2009	5,034	4,405 (88%)	4,740 (94%)	4,381 (87%)
2010	3,573	3,192 (89%)	3,391 (95%)	3,227 (90%)

### **NYTEST Average Emissions**

Emissions from Initial Test - DEC queried the NYTEST I/M database to calculate program-wide average emissions from the NYTEST transient (dynamometer) inspection for each calendar year using initial inspections as shown in Table 5 below.

TABLE 5 : NYTEST Average Emissions

Year	# of Tests	Average HC (grams/mile)	Average CO (grams/mile)	Average NOx (grams/mile)
1999	1,931,064	0.54	8.56	1.76
2000	2,969,943	0.39	8.13	1.34
2001	3,153,284	0.34	7.21	1.20
2002	3,274,376	0.35	6.57	1.11
2003	3,291,294	0.34	4.40	0.80
2004	3,015,292	0.29	3.53	0.68
2005	1,330,065	0.36	4.31	0.80
2006	759,521	0.44	5.06	0.87
2007	618,280	0.43	4.87	0.82
2008	506,692	0.42	4.68	0.80
2009	395,760	0.42	4.60	0.78
2010	306,993	0.42	4.61	0.76

Note that mandatory NYVIP OBD II inspections were required in NYMA beginning in May 2005. Many vehicles (light-duty, non-diesel/non-electric, model years 1996 to 2002) previously inspected by NYTEST were instead being inspected through NYVIP. The NYVIP OBDII inspections (Model Years 1996 to 2003, inclusive) completed during Calendar Year 2005 represented the newest (and generally cleanest) component of the previous year's (Calendar Year 2004) NYTEST population. As such, the declining emissions trend observed for NYTEST transient testing from 1999-2004 was impacted by the start of NYVIP OBD II inspections in NYMA. Note also the steady decrease in the number of NYTEST inspections beginning in CY2005.

### **NYTEST Shared Network**

As noted above, the demand for NYTEST tailpipe emissions inspections decreased each year since the start of the NYVIP program in NYMA (May 2005). The consequence of a declining NYTEST population was a corresponding decreased need for NYTEST equipment. The estimated number NYTEST inspections based on DMV registration database and actual NYTEST inspection volumes (initial inspections, idle and transient) are displayed below in Table 6.

TABLE 6 : NYTEST Inspection Volume

County	2006	2007	2008	2009	2010
BRONX	72,319	57,855	46,284	37,027	42,008
KINGS	109,339	87,472	69,977	55,982	58,358
NASSAU	202,515	162,012	129,610	103,688	78,383
NEW YORK	55,206	44,164	35,332	28,265	9,631
QUEENS	185,467	148,374	118,699	94,959	79,641
RICHMOND	51,792	41,434	33,147	26,518	14,827
ROCKLAND	39,779	31,823	25,459	20,367	12,893
SUFFOLK	265,327	212,261	169,809	135,847	105,020
WESTCHESTER	131,512	105,210	84,168	67,334	44,833
Estimated NYTEST Applicable Registrations	1,113,258	890,606	712,484	569,988	455,990
Actual NYTEST (Initial) Inspections	861,405	728,314	644,589	535,132	445,834

\* New York Metropolitan Area Enhanced I/M Program, SIP Revision (June 2009), Table 1.

To address the declining NYTEST population, a “NYTEST Shared Network” was offered as a voluntary program for participating NYMA stations. The NYTEST Shared Network allowed for the orderly reduction in the total number of NYTEST inspection stations. Participating NYTEST stations entered into agreements for the approved referral of NYTEST inspections between nearby stations. The NYS Commissioner of Motor Vehicles, through approval of NYTEST Shared Network applications, controlled the size of the Shared Network to ensure that adequate geographic NYTEST coverage existed to maintain motorist convenience.

DMV completed revisions to the New York State Motor Vehicle Regulations (15 NYCRR Part 79) to implement the NYTEST Shared Network effective September 24, 2008. Table 7 below displays the status of the NYTEST Shared Network as of September 2010. The NYS DMV press release outlining the NYTEST Shared Network is included as Appendix F.

TABLE 7 : NYTEST Shared Network (September 2010)

COUNTY	SENDING STATIONS	RECEIVING STATIONS
Bronx	20	13
New York	4	3
Kings	22	15
Queens	43	33
Richmond	24	17
Westchester	38	32
Rockland	6	6
Nassau	59	47
Suffolk	55	47
<b>TOTAL</b>	<b>271</b>	<b>213</b>

On July 10, 2009, the DEC submitted the proposed State Implementation Plan revision, “New York Metropolitan Area Enhanced I/M Program (June 2009).” This SIP revision outlined the interim NYTEST Shared Network and further proposed to end the NYTEST I/M program on December 31, 2010. The Departments subsequently revised New York State I/M regulations under 6 NYCRR Part 217 and 15 NYCRR Part 79 to reflect a NYVIP only I/M program beginning on January 1, 2011. EPA proposed approval of this SIP revision on September 16, 2011 and noticed the final approval on February 28, 2012.

**E. NEW YORK VEHICLE INSPECTION PROGRAM (NYVIP)**

NYVIP OBD II Implementation - New York State currently requires annual on-board diagnostic testing (OBD II) for applicable vehicles through the statewide NYVIP. New York based the NYVIP OBD II technical specifications in part on the final federal guidance, "Performing Onboard Diagnostic System Checks as Part of a Vehicle Inspection and Maintenance Program" (EPA420-R-01-015, June 2001) and federal I/M regulation. The NYVIP inspection software establishes five possible OBD failure criteria:

1. The vehicle’s Malfunction Indicator Light (MIL) does not illuminate when the ignition is in the key on/engine off (KO/EO) position;
2. The vehicle’s MIL remains illuminated when the ignition is in the key on/engine running (KO/ER) position;
3. Inability to communicate with the vehicle;
4. The vehicle has commanded the MIL On and diagnostic trouble code(s) are reported;
5. The vehicle fails the monitor readiness evaluation.

Since combinations of the failure criteria are possible, close scrutiny is required when evaluating failure rate statistics. For example, a common OBD II failure would include both the “MIL on during KO/ER” visual inspection and the presence of a “diagnostic trouble code (DTC) with the MIL commanded on” criteria.

Statewide Sticker Compliance - DMV conducts quarterly sticker compliance surveys statewide. DMV’s sticker compliance surveys are included as Appendix C. Consistent with past results, the sticker compliance rates for CY 2010, CY 2011, and the first two quarters of CY 2012 exceed 96%.

NYVIP “Data Trigger” Audits - During the development of NYVIP, the Departments defined the content (i.e., data fields) and reporting rules for the electronic OBD II inspection record, or the INSPREC.DAT file. This record is transmitted electronically from the NYVIP stations, through the NYVIP Program Manager, to DEC and DMV. These records serve several purposes. DMV uses these records to insure that motorists comply with the annual inspection requirement via registration denial. These records also form the basis of New York’s annual, biennial, and program evaluation reports. These records are also used for station and certified inspector auditing and enforcement as the INSPREC.DAT file contains information specific to the station, inspector, vehicle, and safety/emissions inspection.

As part of the OBD II inspection, the NYVIP inspection software makes standardized OBD II requests for information. The vehicle, in turn, provides electronic responses that are captured by NYVIP. The type and amount of information reported by each vehicle may vary (i.e., by model year, test type, initial/re-inspection requirements).

The Departments have developed a series of queries to identify possible fraudulent testing during OBDII inspections. Under this design, certain data fields are used by the Departments to identify potentially fraudulent practices without requiring a station visit. These queries are periodically revised, most often to include additional screening criteria for a specific application. These queries have been proven to be highly effective in identifying those stations and inspectors that are completing fraudulent inspections. These efforts have documented the illegal use of electronic simulators and the use of substitute vehicles (“clean scanning”). The resulting data analysis is being used as evidence in DMV and DEC administrative enforcement hearings. The Departments and the New York State Office of the Attorney General have also completed joint investigations during the evaluation period, and these associated press releases are included in Appendix G.

NYVIP Inspection Software Enhancements - The Departments reviewed and approved three separate software updates during the reporting period. NYVIP software versions 0511, 0601, and 0602 were released in March 2010, November 2010, and January 2011, respectively. The following enhancements were provided by these updates:

1. End of NYTEST Program – The NYVIP software was modified to reflect the end of the NYTEST program beginning January 1, 2011.
2. Broadband Option – Beginning January 1, 2011, NYVIP inspection stations were provided the option to use broadband internet rather than dial-up modem to communicate between the NYVIP inspection unit and the NYVIP program manager.
3. Re-print Vehicle Inspection Receipt – Revised software allows the inspection station the capability to re-print any vehicle inspection report (VIR) stored in the unit’s memory.
4. Renew Station License – The inspection facility will have the capability to renew its facility license online thru the NYVIP unit.
5. Make Model Tables – Update the make and model lookup tables.
6. Verify Model Year – Beginning with the 2010 model year, vehicle identification numbers (VINs)

will start “re-using” the model year digit (10<sup>th</sup> character, will have the same value for model year 1980 and 2010 vehicles). The NYVIP software requires verification to determine the correct model year of the vehicle being inspected

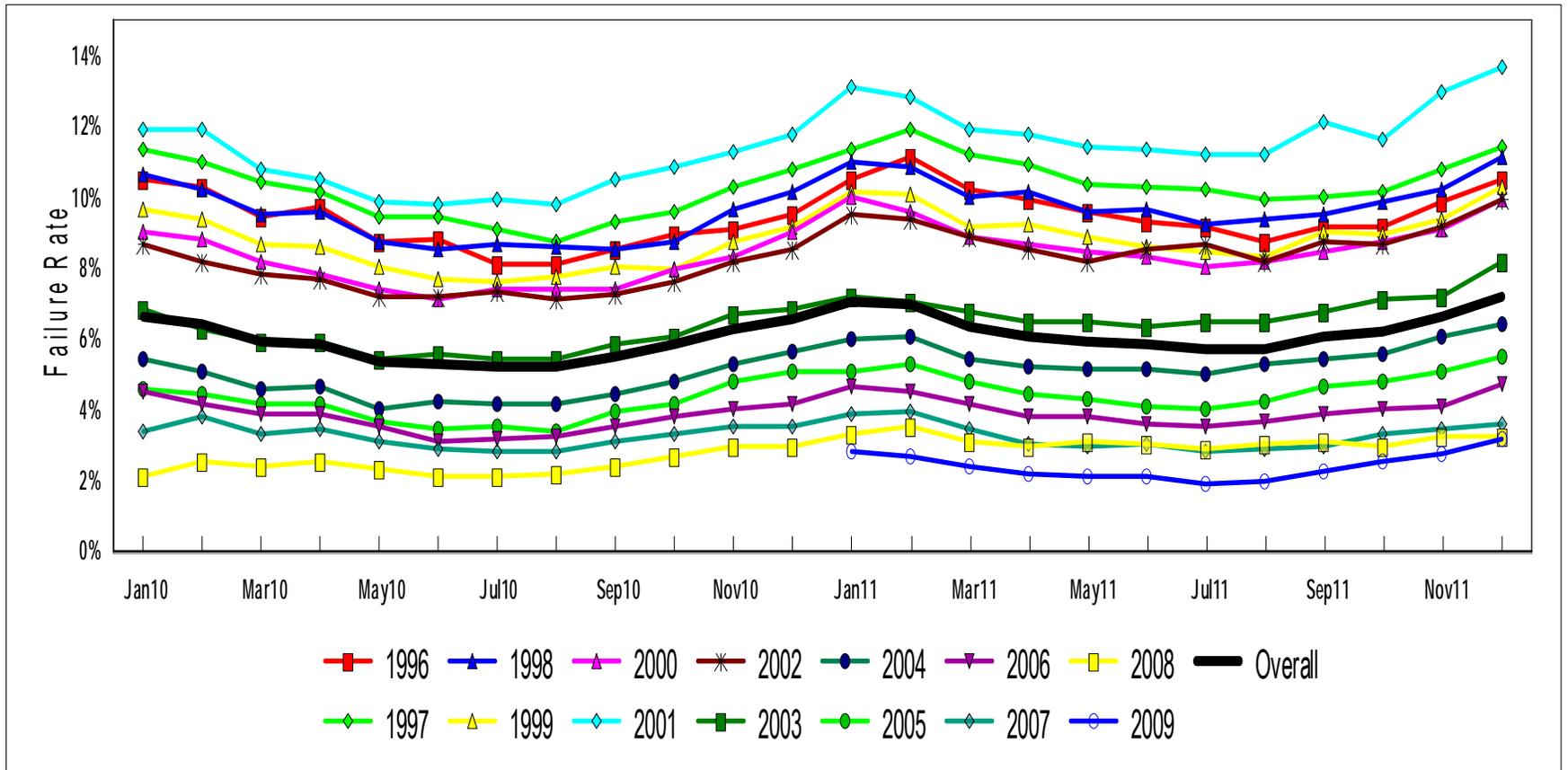
7. Printer Lockout – The NYVIP software checks for any unprinted documents. The analyzer will be locked out until all documents are printed. Some stations had continued to perform inspections without a working printer in violation of the regulations and potentially causing problems for the customer.
8. Station Performance Report – The report now includes additional inspection statistics, such as number of inspections by test type and number passed/failed by each inspector. The report also includes information on the number of waivers and 10-Day Extensions.
9. Unregistered Vehicles – The software should not allow a dealer vehicle to receive a 10 day extension or waiver.
10. Update DMV Regulations – Update the NYVIP unit to reflect the current DMV regulations.

I/M Program Reporting - The Departments monitor the initial inspection failure and waiver rates on a monthly basis. The NYVIP initial OBD II failure rate and waiver rates (statewide) are presented in Graphs 3 and 4, respectively.

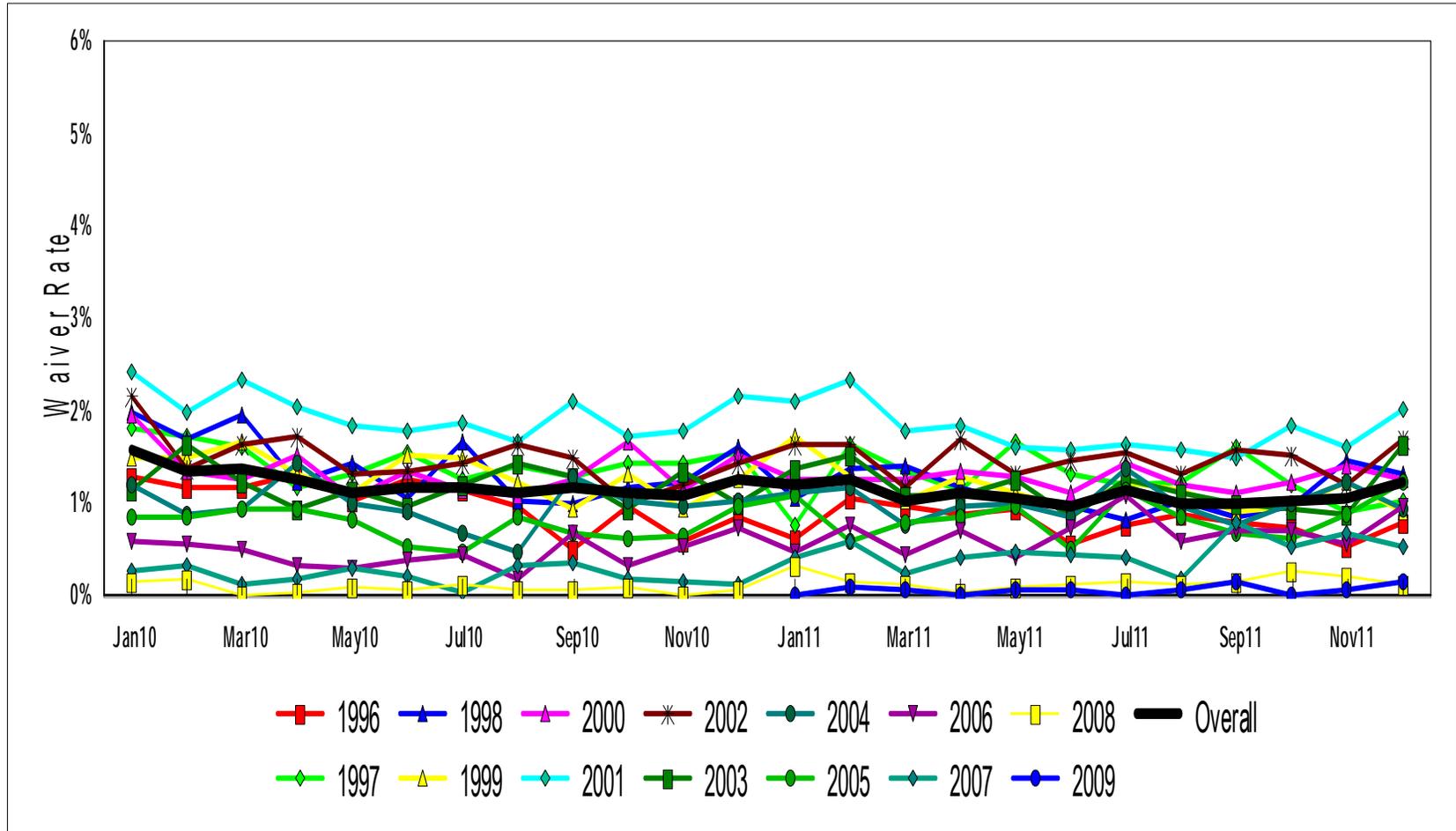
Graph 3 indicates the monthly NYVIP OBD II failure rate for initial inspections during Calendar Years 2010 and 2011. The initial OBD II failure rate averaged 6.05 % during the 2-year reporting period.

Graph 4 displays the monthly statewide NYVIP waiver rate during Calendar Years 2010 and 2011. During this period, the statewide NYVIP waiver rate averaged 1.14%, while the NYMA and Upstate waiver rates were 1.00% and 1.27%, respectively. The NYMA waiver rate reflects waivers authorized by both the NYTEST and NYVIP programs during Calendar Year 2010 only.

GRAPH 3 : NYVIP Statewide OBD II Failure Rate (Initial Inspections)  
(Calendar Years 2010 and 2011)



GRAPH 4 : NYVIP Statewide OBD II Waiver Rate  
(Calendar Years 2010 and 2011)



## **F. NEW YORK CITY TAXI AND LIMOUSINE COMMISSION (TLC)**

Since 1977, yellow medallion taxi cabs operating within New York City have been subject to emissions testing at a frequency of three times per year. The New York City Taxi and Limousine Commission (TLC) upgraded their Woodside (Queens) testing facility and commenced mandatory OBD II inspections for applicable yellow medallion cabs beginning on December 8, 2003. The Departments completed acceptance testing of the TLC test equipment and software from August 2004 to June 2006. The Departments found the TLC inspection program, which includes OBD II, emission control device (ECD), and safety component checks, to be equivalent to New York State requirements (NYVIP). The Departments jointly approved the TLC inspection program on October 4, 2006. This approval is included as Appendix H.

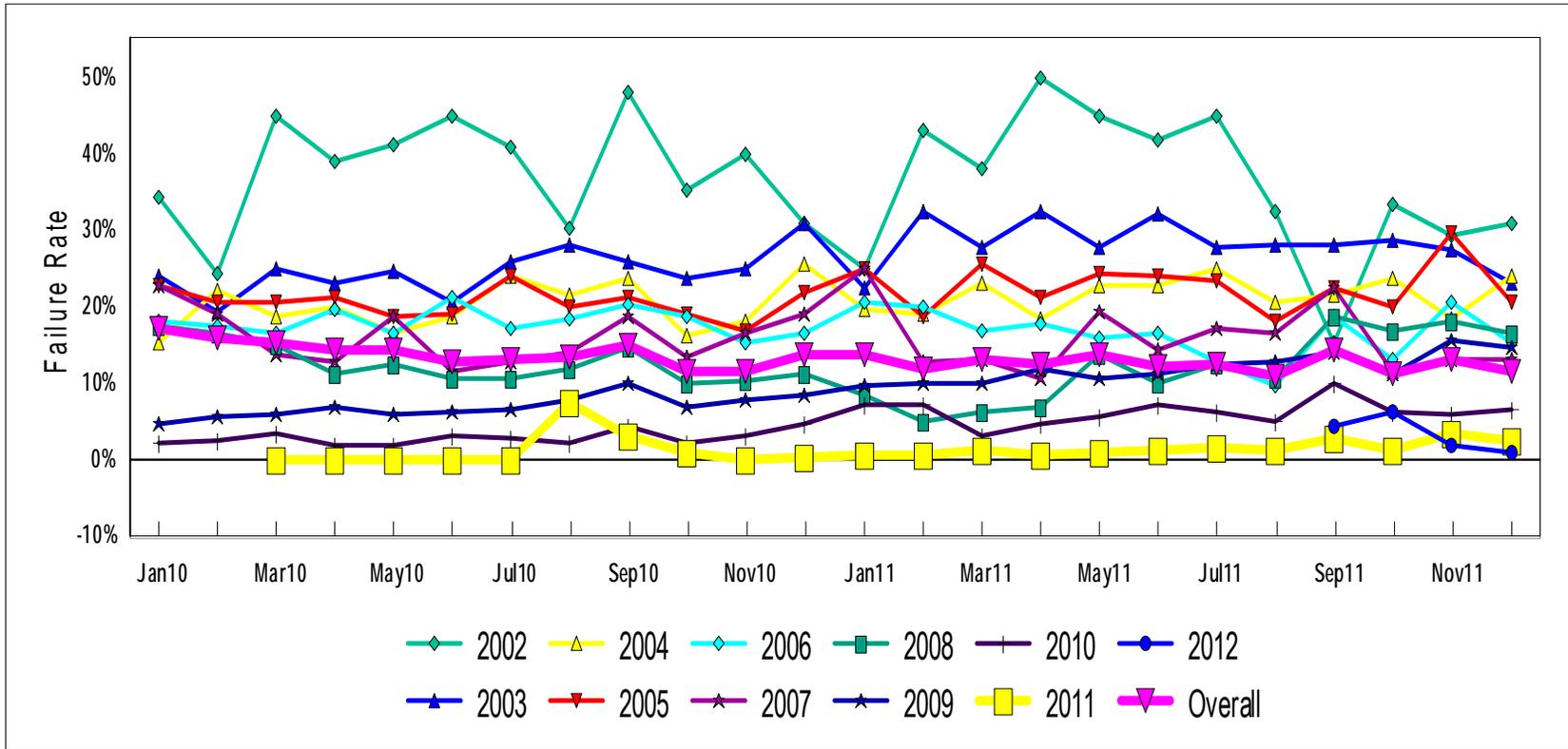
Effective September 1, 2009, TLC required the For-Hire vehicles (FHVs) submitting a new application or a vehicle transfer (i.e., replacement vehicle) to pass a NYS inspection, including an OBD II emissions inspection, at the Woodside test-only facility. As of February 1, 2010, FHV renewal applications were also required to pass a NYS inspection. These FHVs were previously required to receive 3 inspections a year, but the inspections were completed at licensed decentralized testing locations (NYVIP, NYTEST). The TLC now requires applicable FHVs to receive 1 inspection (of the required 6) at the Woodside facility during a 2-year period.

The TLC provides OBDII emissions test results to the Departments on a monthly frequency. A summary table of TLC OBDII inspections during for Calendar Years 2010 and 2011 is provided as Table 8. Graph 5 displays the monthly TLC OBDII failure rate during Calendar Years 2010 and 2011.

Table 8 : New York City Taxi and Limousine Commission (TLC) OBDII Summary

TOTALS				PASSED	FAILED OBD II INSPECTION												
Calendar Year	Model Year	Sample Count	Average Odometer	Pass Count	Fail Count	Average Odometer	Failed	Fail Count	Communication %	Fail Count	KOEO %	Fail Count	KOER %	Fail Count	MIL Command %	Fail Count	Readiness %
2010	1996	6	258,471	3	3	254,995	50.00%	1	16.67%		0.00%	1	16.67%	1	16.67%	2	33.33%
	1997	27	305,818	16	11	333,817	40.74%	2	7.41%		0.00%	1	3.70%	6	22.22%	9	33.33%
	1998	93	307,126	52	41	304,487	44.09%	10	10.75%	6	6.45%	2	2.15%	20	21.51%	16	17.20%
	1999	364	278,163	216	148	287,290	40.66%	34	9.34%	21	5.77%	19	5.22%	80	21.98%	57	15.66%
	2000	804	251,216	525	279	269,051	34.70%	75	9.33%	27	3.36%	28	3.48%	119	14.80%	111	13.81%
	2001	1,032	226,561	544	488	247,991	47.29%	88	8.53%	33	3.20%	35	3.39%	174	16.86%	367	35.56%
	2002	947	264,460	581	366	389,561	38.65%	67	7.07%	24	2.53%	29	3.06%	121	12.78%	264	27.88%
	2003	4,054	212,847	3,060	994	242,221	24.52%	175	4.32%	70	1.73%	74	1.83%	327	8.07%	711	17.54%
	2004	3,565	213,656	2,853	712	228,417	19.97%	145	4.07%	43	1.21%	58	1.63%	199	5.58%	462	12.96%
	2005	5,764	235,491	4,575	1,189	268,186	20.63%	180	3.12%	35	0.61%	109	1.89%	298	5.17%	895	15.53%
	2006	7,330	221,454	6,004	1,326	237,810	18.09%	217	2.96%	33	0.45%	172	2.35%	367	5.01%	939	12.81%
	2007	8,110	176,311	6,789	1,321	199,083	16.29%	182	2.24%	19	0.23%	179	2.21%	382	4.71%	915	11.28%
	2008	12,998	160,187	10,867	2,131	169,937	16.39%	231	1.78%	31	0.24%	304	2.34%	600	4.62%	1,494	11.49%
	2009	10,247	78,183	9,528	719	94,201	7.02%	64	0.62%	7	0.07%	99	0.97%	236	2.30%	539	5.26%
	2010	4,655	33,250	4,512	143	40,922	3.07%	25	0.54%	2	0.04%	20	0.43%	33	0.71%	95	2.04%
	2011	631	11,105	625	6	6,312	0.95%	2	0.32%		0.00%		0.00%		0.00%	4	0.63%
TOTAL		60,627		50,750	9,877		16.29%	1,498	2.47%	351	0.58%	1,130	1.86%	2,963	4.89%	6,880	11.35%
2011	1996	1	388,500	1			0.00%		0.00%		0.00%		0.00%		0.00%		0.00%
	1997	14	291,333	5	9	267,133	64.29%	2	14.29%		0.00%	1	7.14%	4	28.57%	5	35.71%
	1998	47	255,877	32	15	301,579	31.91%	3	6.38%	4	8.51%	3	6.38%	11	23.40%	4	8.51%
	1999	148	255,164	100	48	275,046	32.43%	11	7.43%	5	3.38%	1	0.68%	23	15.54%	22	14.86%
	2000	407	259,966	286	121	301,793	29.73%	28	6.88%	11	2.70%	8	1.97%	54	13.27%	58	14.25%
	2001	579	239,528	327	252	261,749	43.52%	43	7.43%	12	2.07%	32	5.53%	80	13.82%	194	33.51%
	2002	570	214,005	354	216	241,854	37.89%	41	7.19%	9	1.58%	22	3.86%	61	10.70%	165	28.95%
	2003	3,412	240,778	2,436	976	264,079	28.60%	137	4.02%	43	1.26%	117	3.43%	394	11.55%	692	20.28%
	2004	3,039	216,131	2,384	655	237,043	21.55%	103	3.39%	39	1.28%	62	2.04%	232	7.63%	437	14.38%
	2005	3,828	223,130	2,954	874	226,990	22.83%	111	2.90%	33	0.86%	106	2.77%	258	6.74%	652	17.03%
	2006	4,580	231,107	3,807	773	253,334	16.88%	113	2.47%	6	0.13%	116	2.53%	243	5.31%	550	12.01%
	2007	7,058	211,345	5,934	1,124	235,729	15.93%	158	2.24%	22	0.31%	161	2.28%	319	4.52%	793	11.24%
	2008	10,598	198,878	8,928	1,670	220,528	15.76%	142	1.34%	18	0.17%	271	2.56%	522	4.93%	1,217	11.48%
	2009	10,233	147,338	8,996	1,237	158,721	12.09%	63	0.62%	3	0.03%	180	1.76%	380	3.71%	932	9.11%
	2010	8,099	86,910	7,586	513	93,479	6.33%	56	0.69%	8	0.10%	76	0.94%	150	1.85%	380	4.69%
	2011	8,556	38,893	8,399	157	56,732	1.83%	24	0.28%	3	0.04%	17	0.20%	43	0.50%	102	1.19%
	2012	352	10,206	344	8	2,108	2.27%	4	1.14%		0.00%		0.00%		0.00%	4	1.14%
TOTAL		61,521		52,873	8,648		14.06%	1,039	1.69%	216	0.35%	1,173	1.91%	2,774	4.51%	6,207	10.09%

GRAPH 5 : New York City Taxi and Limousine Commission (TLC) OBD II Failure Rate  
(Calendar Years 2010 and 2011)



Note: Model Years 1997 through 2001 vehicles are not included in the above chart.

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APPENDIX A

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(Based on Data Collected from 1/1/2010 to 12/31/2010)

New York Metropolitan Area (9 Counties)										Upstate New York (53 Counties)							
Vehicle Model Year	Total Vehicles	MYR Distribution	Gasoline Powered** Light Duty	Gasoline Powered** Heavy Duty	Diesel Powered Light Duty	Diesel Powered Heavy Duty	Other Fuels*** Light Duty	Other Fuels*** Heavy Duty	Total Vehicles	MYR Distribution	Gasoline Powered** Light Duty	Gasoline Powered** Heavy Duty	Diesel Powered Light Duty	Diesel Powered Heavy Duty	Other Fuels*** Light Duty	Other Fuels*** Heavy Duty	
Pre-1985	20,642	0.44%	19,471	916	237	14	3	1	119,769	2.33%	109,811	7,064	1,998	857	39	0	
1985	6,045	0.13%	5,404	548	83	9	1	0	9,624	0.19%	7,111	1,685	516	311	0	1	
1986	8,347	0.18%	7,436	837	29	45	0	0	12,009	0.23%	9,203	1,688	232	885	0	1	
1987	12,162	0.26%	11,057	992	75	37	0	1	15,112	0.29%	11,946	1,854	321	990	1	0	
1988	14,475	0.31%	13,130	1,293	7	45	0	0	19,039	0.37%	15,020	2,714	40	1,261	2	2	
1989	19,349	0.42%	18,132	1,146	17	51	2	1	22,683	0.44%	18,783	2,449	112	1,337	1	1	
1990	24,880	0.54%	23,787	1,030	15	47	1	0	25,157	0.49%	21,555	2,011	196	1,392	3	0	
1991	29,831	0.64%	28,972	757	53	43	3	3	29,014	0.56%	25,968	1,554	361	1,130	1	0	
1992	39,890	0.86%	38,874	924	32	58	2	0	38,911	0.76%	35,375	1,958	319	1,255	4	0	
1993	54,833	1.18%	53,421	1,292	39	81	0	0	54,613	1.06%	50,014	2,533	310	1,752	3	1	
1994	71,757	1.54%	69,375	2,226	33	116	7	0	78,582	1.53%	72,425	3,531	428	2,189	5	4	
1995	102,585	2.21%	99,076	3,239	76	164	8	2	113,590	2.21%	105,248	4,721	669	2,944	5	3	
1996	110,105	2.37%	107,394	2,556	48	97	7	3	117,299	2.28%	109,958	3,982	582	2,764	9	4	
1997	150,256	3.23%	145,904	4,110	39	180	11	12	166,491	3.24%	155,529	6,414	677	3,854	10	7	
1998	179,054	3.85%	175,082	3,651	57	213	35	16	197,578	3.85%	190,048	3,943	959	2,567	46	15	
1999	214,000	4.61%	207,403	6,207	73	270	40	7	238,469	4.64%	223,053	8,485	1,005	5,865	46	15	
2000	261,386	5.63%	252,745	8,101	27	448	57	8	287,680	5.60%	271,018	9,797	604	6,144	99	18	
2001	257,171	5.54%	248,562	8,154	32	318	96	9	281,099	5.47%	262,285	11,922	1,031	5,680	162	19	
2002	290,683	6.26%	281,831	8,098	196	350	169	39	326,706	6.36%	305,994	12,935	1,303	6,076	362	36	
2003	309,149	6.65%	300,054	8,509	70	295	156	65	350,875	6.83%	327,718	14,862	1,612	6,484	148	51	
2004	309,443	6.66%	301,541	7,394	49	282	152	25	362,968	7.07%	338,983	15,732	1,054	7,007	143	49	
2005	305,801	6.58%	298,878	6,474	64	308	76	1	387,146	7.54%	363,789	13,576	1,416	8,235	110	20	
2006	304,027	6.54%	294,260	9,357	97	282	31	0	364,463	7.10%	338,549	14,270	1,952	9,572	90	30	
2007	350,862	7.55%	344,112	5,932	60	456	89	13	380,467	7.41%	360,098	10,574	906	8,709	177	3	
2008	418,282	9.00%	410,402	7,374	66	262	147	11	413,564	8.05%	390,201	14,438	880	7,840	201	4	
2009	328,525	7.07%	323,741	4,471	126	138	23	26	305,564	5.95%	291,345	10,615	2,086	1,328	183	7	
2010	344,227	7.41%	341,674	2,382	73	17	77	4	320,191	6.23%	308,643	9,578	868	523	489	90	
2011	108,261	2.33%	107,401	850	7	2	1	0	97,617	1.90%	91,018	6,215	114	139	119	12	
Total % of Total	4,645,788	100.00%	4,529,119	108,820	1,780	4,628	1,194	247	5,136,280	100.00%	4,810,688	201,100	22,551	99,090	2,458	393	
			97.49%	2.34%	0.04%	0.10%	0.03%	0.01%			93.66%	3.92%	0.44%	1.93%	0.05%	0.01%	

\* Excluding vehicle types exempted from DMV/DEC I/M Program.

\*\* Including Hybrid Vehicles.

\*\*\* Including CNG, Propane, Flex-Fueled, and Electric Vehicles.

(Based on Data Collected from 1/1/2011 to 12/31/2011)

New York Metropolitan Area (9 Counties)										Upstate New York (53 Counties)							
Vehicle Model Year	Total Vehicles	MYR Distribution	Gasoline Powered**		Diesel Powered		Other Fuels***		Total Vehicles	MYR Distribution	Gasoline Powered**		Diesel Powered		Other Fuels***		
			Light Duty	Heavy Duty	Light Duty	Heavy Duty	Light Duty	Heavy Duty			Light Duty	Heavy Duty	Light Duty	Heavy Duty	Light Duty	Heavy Duty	
Pre-1986	97,430	1.97%	78,229	11,558	2,648	4,898	65	32	135,042	2.54%	103,963	15,329	2,975	12,731	35	9	
1986	11,098	0.22%	8,812	879	334	1,073	0	0	14,031	0.26%	10,306	1,309	594	1,820	2	0	
1987	14,225	0.29%	11,730	866	428	1,200	1	0	16,309	0.31%	12,424	1,436	511	1,937	1	0	
1988	15,416	0.31%	12,920	1,030	227	1,239	0	0	19,655	0.37%	14,992	1,870	362	2,429	2	0	
1989	18,965	0.38%	16,690	804	246	1,222	3	0	21,771	0.41%	17,358	1,548	472	2,393	0	0	
1990	22,630	0.46%	20,128	835	277	1,389	1	0	23,350	0.44%	18,903	1,353	529	2,560	4	1	
1991	26,029	0.53%	23,779	559	336	1,347	7	1	25,286	0.48%	21,475	1,133	530	2,146	1	1	
1992	32,716	0.66%	30,760	478	326	1,146	6	0	32,027	0.60%	28,387	1,178	562	1,893	7	0	
1993	45,035	0.91%	42,613	547	521	1,351	2	1	43,785	0.82%	39,014	1,556	759	2,453	4	0	
1994	60,413	1.22%	57,015	857	497	2,033	11	0	63,109	1.19%	57,362	2,030	848	2,860	5	4	
1995	88,138	1.78%	83,131	1,247	768	2,970	20	2	91,110	1.72%	83,377	2,540	1,265	3,916	8	4	
1996	95,233	1.92%	91,243	931	656	2,391	11	1	96,756	1.82%	89,687	2,361	1,301	3,396	8	3	
1997	134,610	2.72%	128,818	1,755	939	3,079	16	3	141,838	2.67%	132,343	3,372	1,714	4,387	17	5	
1998	161,903	3.27%	156,872	1,326	811	2,845	42	7	172,056	3.24%	164,230	2,796	1,124	3,773	124	9	
1999	199,243	4.02%	190,490	2,486	1,315	4,886	60	6	212,638	4.00%	199,183	4,448	2,438	6,402	147	20	
2000	247,799	5.00%	237,239	3,423	1,234	5,845	54	4	263,277	4.96%	248,857	5,323	2,087	6,814	168	28	
2001	248,132	5.01%	238,621	3,317	1,145	4,967	77	5	263,377	4.96%	248,309	6,168	2,379	6,293	208	20	
2002	285,306	5.76%	275,320	3,613	1,501	4,676	192	4	310,000	5.84%	294,323	5,898	2,960	6,415	385	19	
2003	304,927	6.16%	293,635	4,375	1,579	5,135	105	98	336,497	6.34%	319,137	7,437	3,324	6,358	203	38	
2004	308,765	6.24%	296,184	4,643	1,393	6,402	135	8	351,847	6.63%	332,929	8,695	2,775	7,236	177	35	
2005	305,500	6.17%	292,642	4,406	1,839	6,526	79	8	377,107	7.10%	356,398	8,640	3,000	8,957	91	21	
2006	300,541	6.07%	284,576	6,043	2,188	7,682	41	11	356,293	6.71%	332,827	9,312	3,253	10,678	185	38	
2007	318,060	6.42%	305,196	3,894	1,094	7,754	108	24	369,077	6.95%	349,151	7,072	1,946	10,339	565	4	
2008	319,924	6.46%	307,263	5,014	1,372	6,030	176	69	391,220	7.37%	369,229	10,549	1,923	9,127	387	5	
2009	288,785	5.83%	281,091	2,448	1,866	3,211	121	48	295,077	5.56%	281,777	6,705	1,910	4,515	143	27	
2010	392,003	7.92%	384,007	2,524	2,051	3,208	150	63	345,920	6.51%	332,841	6,146	2,676	3,932	131	194	
2011	435,005	8.78%	424,939	3,539	3,306	3,093	90	38	390,999	7.36%	369,443	10,799	2,938	7,582	189	48	
2012	174,170	3.52%	169,991	1,043	1,256	1,788	75	17	151,423	2.85%	143,662	3,033	1,357	3,182	111	78	
Total % of Total	4,952,001	100.00%	4,743,934	74,430	32,153	99,386	1,648	450	5,310,877	100.00%	4,971,887	140,036	48,511	146,524	3,308	611	
			95.80%	1.50%	0.65%	2.01%	0.03%	0.01%			93.62%	2.64%	0.91%	2.76%	0.06%	0.01%	

\* Excluding vehicle types exempted from DMV/DEC I/M Program. (trailers, ATVs, motor boats, motorcycles, and locomotives)

\*\* Including Hybrid Vehicles.

\*\*\* Including CNG, Propane, Flex-Fueled, and Electric Vehicles.

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## APPENDIX B

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## **APPENDIX B**

### **Procedure to Sort the DMV Registration File and Matching of Emissions Inspections - I/M Program Evaluation**

1. Obtain a statewide registration database from the NYS DMV (March 6, 2011 and March 11, 2012).
2. Delete registration records associated with "duplicate" VINs to ensure only unique VINs.
3. Delete registration records for vehicles exempt from emissions testing based on registration type code. Delete registration records for those vehicles with a VIN containing less than 17 digits.
4. Delete registration records for those vehicles registered as diesel, electric, "Other," and blank fuel types.
5. Delete registration records for vehicles exempt from emissions testing due to model year. For purposes of this evaluation, remove from consideration the 3 newest MYs using the calendar year of the registration query. For example, given the March 2012 registration run, ignore the 2010, 2011, and 2012 model years. Also remove from consideration vehicles older than 25 model years old. For example, considering the March 2012 registration query, ignore vehicles with a model year of 1986 and older.
6. Delete the registration records for vehicles with a registered weight (actually seating capacity) from "11" - "100", inclusive. This will remove buses with a seating capacity greater than 11 that are inspected by the NYSDOT.
7. Sort the remaining registration records into two tables, Upstate (53 counties) and NYMA (9 counties) using the registration "county code."
8. Remove the registration records for exempt vehicles with a registered weight over 18,000 lbs.
9. The resulting tables represent those vehicles subject to either NYVIP emissions testing based on registration data.
10. Obtain all NYVIP (CY 2011) or NYVIP and NYTEST (CY 2010) emissions inspections completed during roughly the prior 15 months to 2 months after the registration query (i.e., January 1, 2011 to May 12, 2012).
11. Using the unique VINs from the screened Upstate and NYMA registration tables, search the statewide inspection database to "find" a passing emissions test (initial or re-inspection) based on a pass value ("P") as reported within the "Initial Emission Inspection Results" field.
12. Tabulate and graph the inspection vs. registration compliance percentages by model year for each I/M area. Use the registration file for both vehicle MY and I/M area.

## APPENDIX B

### REGISTRATION TYPE CODES

	NYVIP Exempt		Diesel Exempt	
01		VPL		VAN POOL
02		WUG		WORLD UNIVERSITY GAMES
03		JWV		JEWISH WAR VETERANS
04		MCL		MARINE CORP LEAGUE
05		CLG		COUNTY LEGISLATORS
06		CBS		COUNTY BOARD OF LEGISLATORS
07		PPH		PURPLE HEART
08		EDU		EDUCATOR
10		LOC	Y	LOCOMOTIVE <b>Exempt from Diesel Inspection</b>
11		SRF		SPECIAL PASSENGER
12		SRN		SPECIAL PASSENGER (Judges/Officials)
13		GSC		GOVERNOR'S SECOND CAR
14		NYS		NEW YORK SENATE
15		NYA		NEW YORK ASSEMBLY
16		PAS		PASSENGER OR SUBURBAN (Regular)
17		USC		US CONGRESS
18		USS		US SENATE
19	Y	SCL	Y	SCHOOL CAR <b>Exempt, inspected by DOT</b>
20		HIR		HEARSE COACH (Hearse or Hearse Invalid Regular)
21	Y	HIS	Y	HISTORICAL <b>No emissions inspection</b>
22		HIF		SPECIAL REG. HEARSE
23	Y	HSM	Y	HISTORICAL MOTORCYCLE <b>No emissions inspection</b>
24	Y	LUA	Y	LIMITED USE AUTOMOBILE <b>Exempt - Includes Low Speed Vehicles</b>
25		JCA		COURT OF APPEALS
26	Y	SPC	Y	SPECIAL PURPOSE COMMERCIAL <b>No inspection required</b>
27		NYC		NEW YORK COUNCIL
28		JSC		SUPREME COURT (ADJ)
29		MED		MEDICAL DOCTOR
30		JCL		COURT OF CLAIMS
31		GAC		GOVERNOR'S ADDITIONAL CAR
32		CMH		CONGRESSIONAL MEDAL-OF-HONOR
33		SUP		SUPREME COURT JUSTICE
34		CCK		COUNTY CLERK
35	Y	ATV	Y	ALL TERRAIN VEHICLE <b>No inspection required</b>
36	Y	MOT	Y	MOTORCYCLE A <b>No emissions inspection</b>
37	Y	LMA	Y	LIMITED USE MOTORCYCLE-TYPE <b>No emissions inspection</b>
38	Y	LMB	Y	LIMITED USE MOTORCYCLE-TYPE B <b>No emissions inspection</b>
39	Y	LMC	Y	LIMITED USE MOTORCYCLE-TYPE C <b>No emissions inspection</b>
40		ARG		AIR NATIONAL GUARD
41		AYG		ARMY NATIONAL GUARD

42		NLM		NAVAL MILITIA
43		STG		STATE NATIONAL GUARD
44		FPW		FORMER PRISONER OF WAR
45		HAM		HAM OPERATOR
46	Y	FAR	Y	FARM <b>No inspection required</b>
47		BOB		BIRTHPLACE OF BASEBALL
48		VAS	Y	VOLUNTEER AMBULANCE SERVICES
49		SOS		SURVIVORS OF THE SHIELD
50				OMNIBUS (Out-of-State) <b>May be inspected out of state</b>
51		AMB	Y	AMBULANCE <b>Exempt from Diesel Emissions Insp.</b>
52		OMS		(Special) OMNIBUS
53		OMF		(Public Service) OMNIBUS
54		OMT		(Taxi) OMNIBUS
55		OML		(Livery) OMNIBUS
56		OMR		(Regular) OMNIBUS <b>Exempt - Inspected by DOT</b>
57		OMV		(Vanity) OMNIBUS <b>Exempt - Inspected by DOT</b>
58		PHS		PEARL HARBOR SURVIVORS
59		GSM		GOLD STAR MOTHERS
60		CME		CORONER/MEDICAL EXAMINER
61				INTRANSIT PERMIT //
62		DLR		DEALER //
64		MCD		MOTORCYCLE DEALER <b>Plates only, no vehicles, no inspection</b>
65		ATD		ALL TERRAIN DEALER//
66		TRA		TRANSPORTER //
67		RGL		REGIONAL
68		SPO		SPORTS
69		ORG		ORGANIZATIONS
70		IRP		INTERNATIONAL REG.PLAN <b>May be inspected out of state</b>
71				HAM - COMM
72		AGR	Y	AGRICULTURAL TRUCK <b>Exempt from Diesel Emissions Insp.</b>
73		RGC		REGIONAL COMMERCIAL
74		CSP		SPORTS COMMERCIAL
75		ORC		COMMERCIAL ORGANIZATIONS
76		COM		(Regular) COMMERCIAL
77		STA		STATE AGENCIES
78		CHC		(Household Carrier) COMMERCIAL
79				(Agricultural) COMMERCIAL
80		TOW		TOW TRUCK
81		TRC		(Regular) TRACTOR
82		THC		(Household Carrier) TRACTOR
83	Y	ORM		MOTORYCLE HOG <b>No emissions inspection</b>
84	Y	LTR		(Light Trailer) <b>No emissions inspection</b>
85	Y	SEM		(Commercial Semi-Trailer) <b>No emissions inspection</b>
86	Y	TRL		(Regular) TRAILER <b>No emissions inspection</b>
87	Y	HOU		HOUSE OR COACH TRAILER <b>No emissions inspection</b>
88		PSD		POLITICAL SUBDIVISION (Municipal or Thruway)

90	Y	BOT	MOTORBOATS	<b>No inspection required</b>
93	Y	-	SNOWMOBILES	<b>No inspection required</b>

NOTES:

Buses and other vehicles inspected by DOT do not require any inspection under this program, no matter what type of fuel. DOT only performs emissions inspection on Diesel vehicles, no gas emissions inspections

Reg Classes 77 & 88 both include some Special Purpose Commercial vehicles that are exempt from any inspection.

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## APPENDIX C

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**Statewide Sticker Compliance Survey - January 1, 2010 to June 30, 2012**

Year	Vehicles Surveyed per Qtr				Vehicles Surveyed per Year	No Sticker				Improper Sticker				Sticker Expired 30 days or Less				Sticker Expired 31 - 60 Days				Sticker Expired Over 60 Days				Total Non-Compliant	Percent of Non-Compliance								
	1	2	3	4		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr					
2010	2536	2536	2536	2536	10144	4	2	5	3	2	6	1	3	23	48	43	49	14	11	16	13	13	24	15	22					2.21%	3.59%	3.15%	3.55%		
<b>Totals</b>					10144		14				12				163				54			74					317					3.13%			
2011	2536	2536	2536	2536	10144	1	8	5	5	1	0	0	2	22	38	42	38	19	9	10	18	21	17	22	36					2.52%	2.84%	3.12%	3.90%		
<b>Totals</b>					10144		19				3				140				56			96					314					3.10%			
2012	2536	2536	NA	NA	5072	1	1			0	2			24	40			13	12			10	19									1.89%	2.92%	NA	NA
<b>Totals</b>					NA		2				2				64				25			29					122						NA		

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## APPENDIX D

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# Appendix D - NYTEST Equipment Audit Criteria

## Criteria for Equipment Audit Failures

Gas Audit - The audit gases are flowed through the sample system. If the failure criteria is met on the first run, a second run is made through the sample system. If the failure criteria is met on the second run, a run is made through the calibration port with the on-board gases. If the failure criteria is still met the system fails.

Failure Criteria - If any of the concentration readings for the high and low gases exceed 10% of the bottle value or the zero gas values exceed 10 ppm for any gas, the result is a failure.

Vmas Flow Check - The Vmas flow displayed on the equipment is compared to the flow measure by the use of a smooth approach orifice (SAO). The flow is also recorded.

Failure Criteria - If the flow displayed varies by more than 10% of the flow measured using the SAO or if the flow displayed is less than 200 scfm, the system fails.

Gas Cap Tester - The gas cap tester is supplied with a pass master, fail master, and nine adapters for testing. The auditor checks for the presence of all equipment and then performs a gas cap tester calibration.

Failure Criteria - All equipment must be present (tester, pass and fail master caps, nine adapters) and the tester must pass calibration.

On-board Calibration Gas - The calibration gas is required to be BAR97 certified. New York has approved the use of Systech's zero air generator which can be substituted for zero gas. There must be zero, high, and low gas present.

Failure Criteria - All gases must be present (unless zero air is replaced by an approved zero air generator). All gases must be BAR97 approved and the gases must not have expired.

System Flow Check - A flow meter is attached to the end of the sample probe and the flow is measured.

Failure Criterion - The system flow measured must be more than 5 liters/minute.

System Leak Check - A system leak check is performed.

Failure Criterion - The system must pass the leak check.

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APPENDIX E

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# 1 Diagnostic Procedure for Vehicles Failing a Transient Emissions Test

## Helpful Hints:

**In the event of a multiple failure, there may be a common problem:**

- **High HC and CO:** Possible misfire or vehicle not at proper operating temperature. Correct HC failure first.
- **High HC and NOx:** Possible lean condition
- **High HC, CO, and NOx:** If condition **only** appears in the first phase of the drive trace, a possible cause could be that the converter was not at proper operating temperature.

### Step 1: Visual Inspection

- Check for technical service bulletins related to the emission failure.
- Vapor recovery system
- Air filter
- Vacuum leaks, vacuum lines (disconnected, cracked or missing). The use of a vacuum leak detector is recommended.
- Obvious misfire or rough running engine
- Air management system operation
- Converter (damaged, empty or overheated). Correct cause of overheating before replacing converter.

### Step 2: Check Oil Level and Quality

### Step 3: Check Cooling System Level, Operation and Condition

### Step 4: Check MIL Light

- Does MIL or service engine light illuminate with the key on and engine off?
- Is MIL or service engine light on during emissions test? If yes, diagnose code(s) related to failure.

### Step 5: O<sub>2</sub> Sensor Verification

- Is vehicle in fuel-control-at-idle and at time of excessive exhaust emissions? Use lab scope to check O<sub>2</sub> sensor time and voltage.
- When diagnosing a **NOx only failure, do not replace an oxygen sensor that can read full rich and full lean (its complete voltage range) or has a lean bias during idle and cruise speeds.** Repairing this condition (i.e. operating at approx. 350ms) can increase NOx readings. **Correct cause of high NOx first.**

NYS Department of Environmental Conservation/TESTCOM Inc.

## 2 Diagnostic Procedure for Vehicles Failing a Transient Emissions Test

**Step 6: If O<sub>2</sub> Sensor Was Replaced, Verify Operation of New O<sub>2</sub> Sensor.**

**Step 7: Check Catalytic Converter**

- Perform catalytic converter efficiency test.
- If converter tests good, proceed to exhaust gas specific chart.  
If converter tests bad, check for any catalyst damaging condition before replacing catalytic converter.

### **NOx FAILURE PROCEDURE**

**NOx Only Failure: Replacing an oxygen sensor that is allowing the engine to operate rich will not reduce NOx readings.**

#### Check Causes of High Combustion Temperature

- Check operation/function of the EGR system (including passages).
- Check operation/function of ignition timing and advance. Correct the condition before continuing.
- Verify correct operation of emission control systems. Note: Emission systems may have interrelated problems.
- Is the vehicle in fuel control? Correct lean condition only. Correcting a rich condition may increase NOx readings.
- Check for carbon deposits. Perform complete decarbonization as needed.

**When a decarbonization process is performed, driving the vehicle at cruise speeds will help remove carbon deposits that have been loosened during that process.**

#### Check Cooling System

- Coolant level
- Operation of cooling fan
- Operating temperature (limits 185F to 225F)

This Diagnostic/Repair Sequence is generic in nature and may assist technicians in the diagnosis and repair of certain vehicles exhibiting particular excess emissions problems. No warranty of any kind as to the accuracy and effectiveness of this Sequence is made or implied, as its effectiveness will relate in part to the skill level of the using technician, the type of vehicle, and the nature of the problem(s) causing excess emissions.

**NYS Department of Environmental Conservation/TESTCOM Inc.**

### 3 Diagnostic Procedure for Vehicles Failing a Transient Emissions Test

## HC FAILURE PROCEDURE

### Where in the drive trace does HC appear high?

**Near Idle**       **Cruise**       **Acceleration**       **Deceleration**

Perform engine diagnostics on a dynamometer at the same time that the drive trace information shows excessive HC.

- Does engine run rough or miss? Correct condition before continuing.
- Perform engine diagnostics and check for vacuum leaks and proper timing. Over advanced timing can increase HC.
- Run car on dynamometer to detect misfire under load. Perform misfire diagnostics, if possible, at same speed and load that excessive gases show on drive trace.
- Monitor O<sub>2</sub> sensor waveform (using lab scope) during drive cycle to help detect misfire.
- Verify correct operation of related emission control systems. Note: Emission systems may have interrelated problems.
- Does engine run smooth? If not, repeat engine diagnostics including accurate testing for vacuum leaks.

**The use of a vacuum leak detector (one that injects smoke into the engine) may be the most effective method to locate vacuum leaks.**

## 4 Diagnostic Procedure for Vehicles Failing a Transient Emissions Test

### CO FAILURE PROCEDURE

#### Where in the drive trace does CO appear high?

- Near Idle**       **Cruise**       **Acceleration**       **Deceleration**

Perform engine diagnostics on a dynamometer at the same time that the drive trace information shows excessive CO. Some components may operate properly at idle and malfunction at cruise speed or under load.

#### Check Causes of Rich Mixture

- Air filter
- Cooling system: Can engine reach proper operating temperature?
- Check operation/function of the vapor recovery system, which could add unmetered fuel to the engine. Correct the condition before continuing.
- Check operation/function of the fuel delivery system (fuel pressure, float level, etc.).
- Verify correct operation of emission control systems (i.e. proper vacuum to control components such as MAP sensor).
- Is the vehicle in fuel control? Can the oxygen sensor read full rich at idle and at the time of excessive CO emissions? If yes, can O2 sensor be driven lean? **If yes, correct cause of rich mixture.**

**If HC is also excessive, check for misfire.**

**This procedure was developed mainly for vehicles with feedback systems and is designed to assist the technician in locating the cause of excessive exhaust gases in a cost-effective manner. The procedure focuses on the systems and/or components that are related to the failed gas. The success in repairing failed vehicles will depend greatly on the technician's knowledge, access to diagnostic information, vehicle manufacturers' specifications and technical service bulletins, as does any other diagnostic procedure. This procedure does not replace the need for technician training or performing accurate diagnostics but instead helps the technician to determine when to apply that knowledge and eliminates steps not related to the failed gas.**

This Diagnostic/Repair Sequence is generic in nature and may assist technicians in the diagnosis and repair of certain vehicles exhibiting particular excess emissions problems. No warranty of any kind as to the accuracy and effectiveness of this Sequence is made or implied, as its effectiveness will relate in part to the skill level of the using technician, the type of vehicle, and the nature of the problem(s) causing excess emissions.

**NYS Department of Environmental Conservation/TESTCOM Inc.**

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APPENDIX F

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**FOR IMMEDIATE RELEASE:  
Thursday, September 25, 2008**

**CONTACT: (518) 473-7000**

## **DMV ANNOUNCES SHARED NETWORK FOR NYMA EMISSIONS INSPECTIONS**

Commissioner David J. Swarts of the New York State Department of Motor Vehicles (DMV) today announced a new program called the “NYTEST Shared Network” for vehicle emissions inspections in the New York metropolitan area, which includes all of the boroughs of the City, Long Island, and Westchester and Rockland Counties.

The 1990 Federal Clean Air Act requires New York State to conduct an inspection program to help reduce harmful emissions from most gasoline-powered passenger cars and light-duty trucks. The New York Transient Emission Short Test, or NYTEST, is the system for emission testing of vehicles that are model years 1995 or older. Currently, there are approximately 700,000 vehicles in the NYMA New York metropolitan area that require the NYTEST out of a total of more than 4.4 million vehicles registered in the region. But, more importantly, as required by regulation, every State certified inspection station in the New York metropolitan area must have the equipment for doing the NYTEST. Therefore, the “NYTEST Shared Network” concept was created to address the large overcapacity of minimally used inspection equipment available to service the necessary vehicles.

The Shared Network is a voluntary collaboration of inspection stations that have entered into an agreement approved by the DMV where one or more of the entities are not required to do the NYTEST inspection procedure. The Network will consist of facilities being “sending” and “receiving” emissions inspection stations for NYTEST customers. A sending station, which will not have the NYTEST equipment, will advise motorists of a receiving station within a five mile radius that a customer will be recommended to for completion of the emissions inspection. The regulations outline the eligibility criteria and procedures necessary for approval by the DMV to enter into this business partnership. The shared network therefore maximizes resources and reduces costs to service stations, while maintaining high levels of testing availability and customer service.

The NYTEST Shared Network is voluntary for stations, and DMV will control the number of stations allowed to participate to ensure there is an adequate number of stations to serve the public. Consumers may look up the location of inspection stations at a new regulated business look-up webpage available on the DMV web site at <http://www.nysdmv.com/faclookup/default.html>. Consumers need only answer a few questions about their vehicle and where they wish to have the vehicle inspected, and the web site will list the stations who maintain the necessary inspection equipment. We anticipate that most consumers who need this inspection will be able to go to the inspection station that they have used in the past.

The complete text of the new regulatory changes can be found on the DMV web site at: [www.nysdmv.com](http://www.nysdmv.com).

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APPENDIX G

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**For Release: IMMEDIATE**  
Thursday, February 18, 2010

**Contact:** Yancey Roy  
(518) 402-8000

**40 FACILITIES CITED FOR FALSIFYING 20,000+  
VEHICLE EMISSION INSPECTIONS  
DEC and DMV Investigation Finds Simulators Used to Skirt State Law**

New York State Department of Environmental Conservation (DEC) Commissioner Pete Grannis and Department of Motor Vehicles (DMV) Commissioner David J. Swarts today announced that 40 inspection facilities in the downstate region have been cited for issuing more than 20,000 vehicle-inspection certificates for automobiles that were never actually tested for emissions.

To pass a state emissions inspection, a car or truck must be connected to state-approved inspection equipment that reads emissions levels and sends the information directly to a state DMV database. DMV inspectors identified the potential fraud and forwarded the information to DEC investigators. DEC found that inspectors at the 40 cited facilities skirted state law by attaching the inspection equipment to electronic devices that simulate inspections, thereby providing fake data to DMV computers. In 20,773 instances, investigators found that the vehicle of record likely was never tested.

“The intentional flouting of air pollution laws is unacceptable,” Commissioner Grannis said. “Motor vehicles are a major source of harmful air pollution and New York maintains strong vehicle-emission limits in order to protect state residents – especially those living in the densely populated downstate area – from exposure to excessive vehicle emissions. Falsifying inspections is not only illegal but also keeps potentially polluting cars and trucks on the road, undermining the health of New Yorkers.”

“We were pleased to work with our partners at DEC in uncovering this fraud,” Commissioner Swarts said. “Protecting air quality and ensuring that emissions inspections are carried out appropriately are among DMV’s important responsibilities. Violators of inspection procedures should realize that they will be discovered and prosecuted any time that their actions affect the health or safety of the citizens of New York.”

The fake emissions inspections were carried out by facilities located in six counties: 27 in the Bronx, four in New York (Manhattan), four in Suffolk, three in Nassau and one apiece in Westchester and Kings (Brooklyn). DEC sent each of the facilities a “Notice of Violation;” potential fines for violating emissions-testing requirements range from \$375 to \$1,500 for the first offense and up to \$22,500 for each ensuing offense. The notice requires station owners and inspectors to contact DEC by March 10.

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## APPENDIX H

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Department of Motor Vehicles

# STATE OF NEW YORK



Department of Environmental  
Conservation

August 22, 2006

Commissioner Matthew W. Daus  
New York City Taxi and Limousine Commission  
40 Rector Street  
New York, New York 10006

RE: Approval of the New York City Taxi and Limousine Commission (T&LC) On-board Diagnostic (OBD II) Inspection Program

Dear Commissioner Daus:

The New York State Departments of Environmental Conservation (DEC) and Motor Vehicles (DMV) have concluded our evaluation of the on-board diagnostic inspection equipment installed at the T&LC Woodside facility. The T&LC inspection software conducts OBD II inspections of all gasoline and alternative fuel-powered yellow medallion taxicabs that are model year 1996 or newer. The Departments find the T&LC OBD program, as designed by SysTech International, to be functionally equivalent to New York State's on-board diagnostic testing specifications.

DEC and DMV conducted acceptance testing on each of the six T&LC OBD-equipped lanes (lanes 3-8) on June 8, 2006, and have evaluated the resulting inspection records transmitted to both Departments. The TLC OBD equipment was identified as having software version #6.04, OBD II software version #7.21.4, and OBDII hardware interface #OBD2NetHEX57. This configuration complies with state and federal OBD requirements in that a vehicle will fail the OBD inspection if one or more of the following conditions are encountered:

- The malfunction indicator light (MIL) does not light during when the ignition is in the Key On/ Engine Off (KO/EO) position;
- The MIL stays lit when the ignition is in the Key On/Engine Running (KO/ER) position;
- The OBD inspection equipment cannot communicate with the vehicle being tested;
- The MIL is commanded on by the vehicle's power train control module (PCM) and applicable diagnostic trouble code(s) are stored; and
- The vehicle does not meet federal readiness guidance ("Performing Onboard Diagnostic System Checks as Part of a Vehicle Inspection Program, June 2001.")

Unauthorized modifications to either the OBD software or the hardware interface will invalidate this approval.

The following conditions apply to this approval:

1. T&LC staff and SysTech International have agreed to forward "Release Plan Notes" for any proposed software change for DEC's review prior to implementation. For any proposed change that will affect the OBD inspection, the T&LC and its agents must provide written clarification of the proposed change at least 30 days in advance of implementation. The DEC will determine whether the TLC OBD inspection process will require another round of certification testing during this 30 day period.
2. The T&LC will transmit all current OBD inspections to DEC through the established FTP site on monthly intervals, no later than the 15<sup>th</sup> of any month.
3. Data transmission to DMV through the State data manager, SGS TESTCOM, is anticipated on quarterly intervals. The DMV will complete its registration enforcement based only on the inspection data submitted through the data manager. As with all inspection facilities, the T&LC must remain in good standing with the data manager.
4. The Departments may periodically audit the T&LC Woodside facility pursuant to our regulations and federal requirements.

If you have any questions concerning the conditions explained above, please contact Mr. James Clyne, P.E. of DEC at (518) 402-8292 or Mr. Steven Baker of DMV at (518) 474-5227 prior to September 7, 2006. If we do not hear from you by that time, DMV will issue the "P memo" (draft attached) to local law enforcement agencies informing them of this approval. A copy of the final "P memo" will be supplied to you as notice of implementation.

Sincerely,

Jean Rosenthal  
Director, Office of Driver & Vehicle  
Safety & Clean Air  
NYS Department of Motor Vehicles

Sincerely,

David J. Shaw  
Director, Division of Air Resources  
NYS Department of Environmental  
Conservation

Attachment

cc w/attachment:  
P. Schenkman, T&LC  
R. Allen, T&LC