

July 2007

**New York State Enhanced  
Motor Vehicle  
Inspection/Maintenance  
Program**

*2006 Annual Report  
and 2005-2006 Biennial Report*

Division of Air Resources  
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## EXECUTIVE SUMMARY

The United States Environmental Protection Agency (USEPA or EPA) has defined the reporting requirements for all state-run Inspection/Maintenance (I/M) programs in 40 CFR Part 51.366 (7-1-05 Edition). The I/M program for the State of New York (the State, or NYS) is jointly administered by the New York State Department of Environmental Conservation (NYSDEC) and the Department of Motor Vehicles (NYSDMV). This report reflects the coordination between the two agencies, and is being submitted to the EPA to fulfill the State's **annual** reporting requirements for the calendar year of 2006, as well as the **biennial** report addressing the program changes during the period of January 1, 2005 to December 31, 2006.

The State has operated a high enhanced I/M program in the nine (9) counties of the New York Metropolitan Area (NYMA) since 1998 using a mass emission transient test referred to as the New York Transient Emission Short Test (NYTEST). On April 1, 2005 in NYMA, the State commenced an on board diagnostic (OBD II) -based vehicle inspection program. This program was named New York Vehicle Inspection Program (NYVIP). By May 5, 2005 all testing facilities in NYMA were required to conduct OBD II inspections for all applicable 1996 and later model year light duty vehicles and trucks. During the 2006 calendar year, more than 4.8 million light-duty vehicles and trucks were registered in NYMA, of which 3.71 million (77.11% of the total) were emissions tested and 2.84 million (59.20% of the total) of the vehicles had OBD II inspections.

A low enhanced I/M program has been operating in the remaining fifty-three (53) counties of New York (Upstate New York, or Upstate) since 1998. On December 1, 2004 the State implemented the OBD II-based NYVIP Upstate. This allowed for the inclusion of all Upstate vehicles into the State's I/M program database. In 2006, from more than 5.2 million registered light-duty vehicles and trucks, almost 3.1 millions of them (or 59.14%) received OBD II inspections.

Pursuant to a Consent Order filed on September 6, 1977, all yellow medallion taxi cabs operating in New York City are required to be emissions tested on a three (3) times per year basis. These vehicles were included in the NYMA enhanced I/M Program since 1998. Following upgrades to their Woodside testing facility, the New York City Taxi Limousine Commission (TLC) commenced an OBD II inspection program for the taxi fleet on December 8, 2003. The program continued in 2006 for their fleet of 14,543 vehicles, with a total 35,772 OBD II inspections performed.

The State's goal is to continue improving the performance of the many tasks that are already in place in the State's I/M program. The State will maintain conformance with the March 1996 I/M State Implementation Plan (SIP) and the proposed February 2006 NYVIP SIP, and its intended goal: cleaner air for the residents of New York.

## **I. INTRODUCTION**

In keeping with the Federal Clean Air Act Amendments (CAAA) of 1990, the NYSDEC and the NYSDMV in 1998 jointly implemented a high enhanced I/M program for NYMA and a low enhanced I/M program for Upstate, as outlined in the State's March 1996 I/M SIP and the modified February 2006 NYVIP SIP proposal.

In accordance with the reporting requirements described under 40 CFR Part 51.366 paragraphs (a) through (d), this report documents all the required annual information for the I/M program operations in the State of New York, including a high enhanced I/M program in NYMA, a low enhanced I/M program in Upstate, and a New York City taxi OBDII inspection program. The reporting period is from January 1, 2006 to December 31, 2006.

Further, this report also serves as the biennial report, required under 40 CFR Part 51.366 paragraph (e), addressing program changes made in I/M program operations in the State of New York during the period of January 1, 2005 to December 31, 2006.

### **A. High Enhanced I/M Program in NYMA**

A high enhanced I/M Program has been in operation in the following nine (9) counties :

- Nassau and Suffolk counties in Long Island,
- the five (5) counties of New York City: Bronx, Kings (or Brooklyn), New York (or Manhattan), Queens, and Richmond (or Staten Island), and,
- Rockland and Westchester counties located immediately north of the New York City.

Under the 1990 CAAA, the entire NYMA and seven (7) towns in southern Orange County were designated as a severe non-attainment area for the one-hour ozone National Ambient Air Quality Standard. The City of New York and the counties of Nassau and Westchester were designated as non-attainment for CO until 2002 when they were re-designated as a maintenance area. New York County is also a moderate non-attainment area for PM<sub>10</sub>.

An idle test based I/M program was implemented in NYMA in 1981. On January 1, 1998, this idle emissions test program was replaced by a phased-in high enhanced I/M program<sup>1</sup>, a program named "New York Transient Emissions Short Test, or NYTEST," which is a dynamometer-based mass emissions analyzer system (including a dynamometer, BAR 97 analyzer, VMAS<sup>TM</sup> unit, NYTEST software, and camera) that utilizes the IM240 driving cycle. By May of 1999, this enhanced I/M program was fully functional for the entire NYMA.

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<sup>1</sup> This high enhanced I/M program, in a pre-existing decentralized test-and-repair network, was proposed in the State's March 1996 I/M SIP approved by EPA on June 7, 2001.

In 2004, a limited number of testing facilities commenced OBD II inspections using NYTEST-based OBD software certified by the State from two of the NYTEST equipment vendors (ESP and SPX). The installation of the NYVIP-based OBD software (to be described in the next section) began in NYMA on April 1, 2005. Starting May 5, 2005, all testing facilities in NYMA were required to conduct OBD II inspections for all applicable 1996+ model year light duty fleet.

Under this high enhanced I/M program, all vehicles registered in NYMA are required to have a safety inspection and an emissions test if not exempted, on an **annual** basis as well as at the time of vehicle ownership change. Vehicles exempted from the emissions test include: diesel-fueled vehicles, electric vehicles, motorcycles, historic vehicles, farm equipment, and two-cycle spark ignition vehicles. In addition, vehicles are also exempt if they were less than two years or over 25 years old. The required emissions test includes:

- 1) a comprehensive visual inspection of a given list of emissions control devices (ECDs) when applicable,
- 2) a gas cap integrity (or pressure) check for NYTEST vehicles, a gas cap presence check for OBD inspected vehicles, and,
- 3) one of the following emissions tests depending upon the vehicle type and vehicle model year:
  - an OBD II inspection for model years 1996+ light-duty vehicles (LDVs) and light-duty trucks (LDTs),
  - a mass-based emissions test (or NYTEST) for model years between 1981 and 1995 LDVs and LDTs,
  - a one-speed idle test for model years between 1981 and 1995 LDVs and LDTs equipped with all-wheel-drive or non-disengageable traction control (when it is impossible to perform a transient test on a two-wheel-drive dynamometer),
  - a one-speed idle test for model years between 1981 and 2004 heavy-duty vehicles (HDVs).

During 2006, this high enhanced I/M Program in NYMA included a total of 2,848,940 light-duty vehicles and trucks with OBD II inspections from 3,911 testing facilities. The distribution of those NYMA OBD inspection stations are shown in Graph 1. An additional 861,405 vehicles received NYTESTs (either transient or idle tests) from 3,765 testing facilities. The distribution of those testing facilities that perform NYTEST are shown in Graph 2.

### **B. Low Enhanced I/M Program in Upstate**

Pursuant to requirement, for attainment areas located within the Ozone Transport Region (OTR), a low enhanced I/M program was implemented in the remaining fifty-three (53) counties of New York (Upstate) in January 1998, as outlined in the State's March 1996 SIP.

An OBD II-based I/M program, named “New York Vehicle Inspection Program, or NYVIP,” was commenced on September 17, 2004, and fully implemented on December 1, 2004. This NYVIP was expanded into NYMA effective May 5, 2005 to provide for a statewide OBD II inspection program.

Under this Upstate program, all vehicles registered in the Upstate counties are required to have a safety inspection and an emissions test, if not exempted<sup>2</sup>, on an **annual** basis as well as at the time of vehicle ownership change. The required emissions test includes:

- 1) a comprehensive visual inspection of a given list of ECDs when applicable, and,
- 2) a gas cap presence check, and,
- 3) an OBD II inspection for model years 1996+ LDVs and LDTs.

During 2006, this low enhanced I/M Program in Upstate included a total of 3,089,027 light-duty vehicles and trucks with OBD II inspections from 6,415 participating testing facilities. Graph 3 shows the distribution of those OBD II inspection stations located in the Upstate area.

### **C. New York City Taxi Limousine Commissions (TLC) OBD II Inspection Program**

The New York City TLC, under terms of a September 6, 1977 Consent Order with the City and other parties, is required to provide emissions testing for all of their yellow medallion taxi cab fleet on a three-times-per-year basis. Since 1998, the entire taxi cab fleet operating in NYMA was included in the State’s high enhanced I/M program described above. On December 8, 2003, with the assistance from a contractor, SysTech, International, the first two lanes at TLC’s Woodside inspection facility began safety and OBD II inspections. By August of 2004, all six lanes at TLC became operational.

The TLC yellow medallion taxi cab fleet is required to undergo inspections at four month intervals with no waivers and no new vehicle exemptions. The required inspections include:

- 1) a comprehensive safety check on various components of the vehicle including headlight, suspension, side slip, and brake system,
- 2) visual inspections including ECD tampering check and gas cap presence check, and,
- 3) an OBD II inspection.

        In 2006, the entire fleet of TLC’s 14,543 yellow medallions (12,715 LDVs and 1,565 LDTs) were OBD inspected with 35,772 OBD II inspection results.

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<sup>2</sup> Vehicles exempted from the emissions test include: diesel-fueled vehicles, electric vehicles, motorcycles, historic vehicles, farm equipment, and two-cycle spark ignition vehicles. In addition, vehicles are also exempt if they are less than two years or over 25 years old.

## **II DATA ANALYSIS AND REPORTING**

The collection of accurate data is essential to the management, evaluation, and enforcement of an efficient I/M program. The State's high enhanced I/M program in NYMA has been collecting vehicle inspection and emissions testing data since the onset of the program in January 1998. Quality control data related to NYTEST emissions testing equipment have also been collected since August 2001. The low enhanced I/M program for Upstate has been collecting computerized vehicle inspection and emissions test data since September 17, 2004. Computerized OBD II inspection data collected by the TLC have also been provided to NYS DEC since December 8, 2003 on a monthly basis.

### **A. Computerized Network**

SGS TestCom, Inc. has been the Data Manager for the NYTEST program since 1998, and the Program Manager for the NYVIP since 2004. A computerized network has been utilized for both the NYMA and Upstate programs for transmitting the real-time inspections/emissions data from all decentralized test-and-repair inspection stations to NYSDMV's mainframe computer and SGS TestCom's computer servers. NYSDEC continues to download the vehicle inspection/emissions data from TestCom on a biweekly basis.

This computerized network has also been utilized as a means for communications between the Contractor and the 10,326 testing facilities, 3,911 located in NYMA and 6,415 located across the Upstate. In addition, real-time inspection activities are being monitored by both NYSDMV and NYSDEC based on various enforcement criteria. More effective enforcement actions have resulted and are presented in the Quality Assurance Report and Quality Control Report sections.

Both NYTEST and NYVIP contracts, managed by NYSDMV, require that SGS TestCom prepare and submit monthly reports on various aspects of the network performance. Compiled and reported statistics include transaction volumes, numbers and types of help desk calls, system availability, and average response time, summarized in Table II.A. Data management meetings are being held every month with full staff participation from NYSDMV, NYSDEC, and SGS Testcom. During these meetings, network performance and efficiency related issues are discussed.

SysTech, International is the Program Manager for the TLC OBD II inspection program. Data have been provided to NYSDEC on a monthly basis and to NYSDMV on an annual basis.

### **B. Test Data Report**

Per section 51.373 Subpart S (Inspection/Maintenance Program Requirements) updated on July 27, 2005, statistics related to anti-tampering ECD check and gas cap test results are no longer required. Therefore, these statistics are not included in this report.

Overall statistics related to the registered vehicle fleet (based on unique vehicle identification numbers, or VINs), by vehicle model year, fuel type, and I/M area (i.e., NYMA or Upstate) for calendar year 2006 are provided in Table II.B.1, with more detailed statistics shown in Appendix A Table A-1. Note that the statistics include all the yellow medallions under TLC's OBD II inspection program, and exclude all the vehicle types exempted from the I/M program. As can be seen, 97.01% of the NYMA and 96.36% of the Upstate registered vehicles were gasoline-powered. Diesel-fueled vehicles represented 2.60% of the NYMA and 3.28% of the Upstate vehicle fleet. Only 0.39% of the NYMA and 0.36% of the Upstate vehicles, respectively, were powered with other fuels such as compressed natural gas, propane, or electric.

Table II.B.2 displays some general statistics derived from the emissions tested vehicle fleet, with Appendix A Table A-2 providing emissions tested vehicle counts from the three I/M programs (NYMA, Upstate and TLC). Note that the vehicle counts from NYMA and Upstate programs include vehicles with ownership change, while the TLC vehicle counts represent the number of yellow medallions operating in NYMA.

## 1. OBD II Inspection Programs

Detailed statistics related to the OBD II inspections obtained from NYMA, Upstate and TLC are provided in Appendix B (tables B-1-a-I to B-3-b-ii).

In NYMA (Appendix B, tables B-1-a-I to B-1-b-ii), 1,720,096 LDVs and 1,128,844 LDTs (representing 76.78% of the total emissions tested fleet) were OBD II inspected, with failure rates of 6.36% and 7.15%, and waiver rates of 2.02% and 2.21%, respectively.

From Upstate (Appendix B tables B-2-a-I to B-2-b-ii), the OBD II inspection failure rates were 5.28% for the LDVs (from 1,683,229 vehicles) and 5.84% for the LDTs (from 1,405,798 vehicles), which were lower than those observed from the NYMA fleet. However, higher waiver rates (3.48% for LDVs and 3.18% for LDTs) were observed.

Due to their high mileage accumulation and the nature of being service vehicles, the TLC fleet (Appendix B tables B-3-a-I to B-3-b-ii) showed very high OBD II inspection failure rates: 19.24% for the LDVs and 10.39% for the LDTs. Note that no waivers are permitted for the TLC fleet.

## 2. NYTEST Program

Summary statistics related to NYMA NYTEST results are provided in Appendix C, with tables C-1-a to C-1-c for transient tests, and tables C-2-a to C-2-d for idle tests.

From the pre-1996 model year fleet, 571,344 LDVs and 181,338 LDTs (20.29% of the total emissions tested NYMA fleet) received a transient test. Observed failure rates were 8.47% for LDVs and 7.09% for LDTs, with waiver rates 1.03% and 1.24%, respectively. The overall average

emission reductions were: 0.78/14.27/1.29 g/mi for HC/CO/NO<sub>x</sub> for the LDV fleet, and 1.21/18.84/1.96 g/mi for HC/CO/NO<sub>x</sub> for the LDT fleet.

From idle tested 28,178 LDVs, 41,401 LDTs, and 39,144 HDVs (2.93% of the total emissions tested NYMA fleet), the failure rates were 6.47% for LDVs, 6.20% for LDTs, and 5.03% for HDVs, with the waiver rates of 0.0%, 0.23%, and 0.41%, respectively. The overall average emission reductions were: 227ppm for HC and 1.36% for CO for the LDVs, 347ppm for HC and 1.76% for CO for the LDTs, and 493ppm for HC and 1.84% for CO for the HDVs.

### 3. Testing Facilities

Appendix D displays the initial test volume and failure rate statistics by vehicle model year and vehicle type (LDVs and LDTs) from all the testing facilities in each county<sup>3</sup>. Table D-1 includes a total of twelve tables (pages D-1-1 to D-1-12) with statistics from the two different types of emissions tests (OBD II inspections, and NYTEST transient/idle tests) for the nine NYMA counties, two Upstate counties (Orange and Putnam where a few NYTEST facilities are licensed), and “Others<sup>4</sup>”. Table D-2 (pages D-2-1 to D-2-9) includes the OBD II inspection statistics from the remaining fifty-one Upstate counties.

In NYMA, Suffolk and Nassau counties had the largest number of testing facilities (820 from Suffolk, 789 from Nassau). For OBD II inspections. The two counties with the highest LDV initial test volumes were Nassau (351,503 inspections) and Suffolk (347,467 inspections). The two counties with the highest LDT initial test volumes were Suffolk (264,997 inspections) and Nassau (215,067 inspections). Bronx had the highest OBD II inspection failure rates for both LDVs (8.33%) and LDTs (9.33%), and Kings had the second highest failure rates for both LDVs (7.91%) and LDTs (8.89%).

For transient tests, Suffolk county had the highest initial test volumes for both LDVs (109,150 tests) and LDTs (47,443 tests). Except for the three counties (Orange, Putnam, and Others) which had very low initial test volumes, Westchester had the highest failure rates (9.99% for LDVs and 9.24% for LDTs). For idle tests, Queens had the highest initial test volumes for both LDVs (6,038 tests) and LDTs (8,227 tests). The counties having the highest idle test failure rates were Richmond (8.61%) for the LDVs and Rockland (8.02%) for the LDTs.

For Upstate, Erie county had the largest number of testing facilities (824 facilities), as well as the highest LDV (227,115 inspections) and LDT (168,726 inspections) initial test volumes. The

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<sup>3</sup> Note that TLC data were not included in the Appendix D since the TLC data were all from one single testing facility.

<sup>4</sup> County “Others” includes NYTEST facilities with unknown NYMA designations and one inspection station located in Jersey City, New Jersey under the jurisdiction of Port Authority of New York and New Jersey.

top three LDV OBD II inspection failure rates were: Sullivan (7.91%), Franklin (7.23%), and Jefferson (7.11%) counties, while the top three LDT failure rates were: Sullivan (8.19%), Franklin (7.52%), and Cattaraugus (7.35%) counties.

### **C. Quality Assurance Report**

Considerable progress continues to be made in NYSDMV's quality assurance program. Case development and hearing testimony training, based on a more refined and efficient procedure developed during previous years, has been in place for use by the enforcement personnel since 2002. The use of intranet-based query offerings on inspection data and inspection certificate data has resulted in more users accessing the system and shorter turnaround time in issuing administrative stops on inspection stations for failure to comply with the regulations. The electronic case-tracking management tool named CAPTAIN, initially developed in 2001, has been fully functional since 2002. Refinements of the desk audit techniques and administrative stop capabilities are continuing.

#### 1. NYMA

The results of the various NYSDMV compliance efforts in the NYMA I/M program are summarized in Table II.C.1. From a total of 3,911 certified inspection stations and 13,864 licensed inspectors in NYMA, a total of 7,672 overt audits was performed<sup>5</sup>. As a result of hearings related to overt audits, 21 inspection stations were suspended for a total number of 383 days.

A total of 15 covert vehicles and 20 covert auditors were made available for use in the undercover audit work in NYMA. A total of 1,734 covert audits and 16 inspection station surveillance audits were performed. As a result of hearings related to covert and surveillance audits, 44 inspection stations were suspended for a total of 1,333 days.

Of the covert audits that were completed, 1,095 vehicles were set to fail on one component of the emissions tests and 67 were set to fail for two or more components. Components set to fail included: 50 for EGR, 214 for gas caps, 655 for OBD MIL On, 189 for OBD monitors, 105 for non-communication, 13 for O<sub>2</sub> sensor, and 1 for fuse, and numerous for safety inspection related failures. From these, 910 inspection stations correctly failed the vehicle, 193 inspection stations false passed the vehicles, and 59 inspection stations did not do the inspections.

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<sup>5</sup> All inspection stations have received at least one overt audit, with most stations receiving two. Stations not receiving two overt audits were typically new facilities whose premises were recently (initially) inspected by field personnel for compliance with regulations prior to operation. In addition to these "regularly scheduled" overt audits, inspection stations were also specially targeted for overt audits based on their history of having high frequencies of idle tests performed and/or high numbers of gas cap tests bypassed.

Desk audits were primarily based on weekly queries of inspection data focused on some preset criteria such as intentionally bypassing the transient tests via incorrect vehicle weight code, vehicle type, and/or traction control/all wheel drive code. In 2006, a total of 89 desk audits was performed, with 14 inspection stations suspended for a total of 725 days. Consumer complaints are also being used as a source of enforcement action. Based on a total of 304 cases, 12 inspection stations were suspended for a total of 282 days.

In addition, the use of administrative stops in NYS DMV's quality assurance program has been viewed as an extremely effective tool. Usually the administrative stops are the direct result of desk audits described above (via weekly queries of the database), telephone requests by the field staff, or from NYSDEC's NYTEST file-based equipment audits. Administrative stops are placed on the facility file to prevent the inspection stations from performing any more inspections and/or emissions tests until they conform to the requirements of the license or registration they hold. These have been very effective in the NYTEST real-time environment. Table II.C.3 summarizes the statistics on administrative stops. As shown, during 2006, a total of 970 administrative stops was issued.

## 2. Upstate

Statistics on various elements in the Upstate quality assurance program are presented in Table II.C.2. There were 6,415 licensed inspection stations and 21,620 certified inspectors conducting safety and OBD II inspections in the Upstate area. A total of 8,258 overt audits was performed in 2006. As a result of hearings related to overt audits, 13 inspection stations were suspended for a total of 721 days.

A total of 17 covert vehicles and 35 covert auditors were available for the undercover audit work for Upstate. A total of 1,205 covert audits was performed. From hearings related to covert audits, 22 inspection stations were suspended for a total of 1,407 days.

Of the covert audits that were completed, 1,28 vehicles were set to fail on one component of the emissions tests, and 12 were set to fail for two or more components. Components set to fail included: 41 for gas caps, 43 for OBD MIL On, 47 for OBD monitors, 2 for O<sub>2</sub> sensor, 9 for TPS, 10 for OBD non-communications, and numerous for safety inspection related failures. From these, 910 inspection stations correctly failed the vehicle, 193 inspection stations false passed the vehicles, and 59 inspection stations did not do the inspections.

In 2006, desk audits were not performed for the Upstate program. A total of 458 cases of consumer complaints was received. As a result of hearings related to consumer complaints, 17 inspection stations were suspended for a total of 858 days.

During 2006, a total of 203 administrative stops was issued for Upstate, as shown in Table II.C.3.

## **D. Quality Control Report**

The NYTEST equipment utilizes three main components to analyze and evaluate vehicle exhaust emissions: Dynamometer, VMAS™ sampler, and analyzer gas bench. Many of the analyzers check requirements defined in 40 CFR Part 51.359 were developed for high-volume centralized test programs using laboratory grade instruments, and therefore, are not directly applicable to the NYTEST environment. In addition, given the high number and geographic dispersion of the inspection facilities located in NYMA, it is not feasible for NYSDEC to conduct performance audits twice a year for each inspection station.

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Procedures to conduct NYTEST equipment audits at the NYMA inspection stations were developed in 2001, and the full equipment audits commenced in August 2001. In 2006, NYSDEC visited 1,131 inspection stations and conducted a total of 1,056 audits. Table II.D summarizes the NYTEST equipment audit statistics for 2006. Note that many inspection stations failed the equipment audits for more than one reason. Therefore, the audit failure percentages in Table II.D would add up to more than 100%. The top three audit failure reasons were: leak check, gas audit, and calibration gas.

The percentage of testing facilities failing the NYTEST equipment audits increased in 2006. Stations were specifically selected for audits based on the reported performance data indicating potential problems: i.e., calibration records, low failure rate, high idle test percentage, high gas cap bypass rate, extremely high emissions readings, or stations that conducted high numbers of tests during a selected time frame. Additionally, a limited number of stations were audited because of their geographic locations.

Administrative stops (or a shutdown) are issued to inspection stations that fail the NYTEST equipment audits, per discussions in the Quality Assurance Report section. Note that an audit failure for any of the reasons listed in Table II.D did not necessarily lead to an administrative stop, since the majority of the audit failures were remedied/corrected within the required seventy-two (72) hour time frames. In 2006, a total of 698 failed NYTEST equipment audit cases was noted, as shown in Table II.D. A total of 57 administrative stops/facility shutdowns were issued by NYS DMV, as shown in Table II.C.3.

Additionally, as part of the required NYTEST software update conducted by the vendors during 2001, certain analyzer quality assurance checks (i.e., periodic calibrations) are required on a daily and weekly basis. The software is designed to assure that acceptance criteria are met. Otherwise, the analyzer would be “locked out” and prevented from further testing until appropriate and necessary repairs are made. This quality control check information is automatically recorded and transferred to NYSDEC in the form of calibration records. These records, as mentioned above, have also been used to target facilities for an NYTEST equipment audit. In 2006, a total of 204,986 calibration records were received and reviewed by NYSDEC staff.

## **E. Enforcement Program Report**

With mandatory annual safety inspections and emissions tests, stickers (for vehicles “passing” either NYTEST or NYVIP) are being accounted for electronically as well as generated directly by the inspection equipment (NYTEST) with a security font. With these computerized systems, the number of stickers missing, stolen, or sold has decreased.

Vehicle information, such as registration expiration date, area of operation (i.e., NYMA or Upstate), weight class, and fuel, have been encoded into the bar code for use during vehicle inspection. Both NYSDEC and NYS DMV utilize the database as a computer matching-based enforcement program to monitor the vehicle information and to check for validity.

For example, a transient-tested vehicle must not be coded as a heavy duty vehicle, or an applicable model year 1996+ light duty vehicle must receive an OBD II inspection. In addition, issues related to clean scanning and repair waivers are also being examined. These rigorous studies and investigations are ongoing, and have resulted in record updates and data corrections.

Another enforcement activity utilized by NYS DMV is based on the traffic tickets issued by law enforcement from multiple sources such as state, county and local courts. There were 157,719 traffic tickets issued to motorists in 2006 for having a V&T Law 306(b) violation (i.e., operating an uninspected vehicle), 39,383 of them were issued in NYMA and 118,336 in Upstate.

### 1. NYMA

The high enhanced I/M program has provided mandatory annual safety inspections with emission tests for 79.54% of the entire light-duty fleet, with the remaining 20.46% exempt due to vehicles’ model year or fuel. In 2006, a total of 4,915,368 inspection stickers was issued for NYMA.

NYS DMV implemented a phased-in registration-based denial enforcement program<sup>6</sup> in 2001, with a full implementation in late 2002. The summary of this month-by-month registration denial enforcement program statistics is provided in Table II.E. Due to a change in NYS DMV reporting, the number of denial warnings issued was not available at this time. As shown in Table II.E, of those motorists receiving warning in 2006, 54,426 still attempted to renew their registration without correcting the problem hence their renewals were denied.

NYS DMV inspected 5,359 stickers from NYMA vehicles. Based on the inspection sticker compliance surveys, an overall compliance rate of 96.99% was found: 32 had no stickers, 1 had the

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<sup>6</sup> Under the program, motorists must have a valid inspection record on file within the previous 15 months upon registration renewal. Otherwise, a warning is printed on the registration renewal invitation. In the event that motorists provide sufficient proof (e.g., valid sticker number or receipt) later on, the denial would be overridden and renewal of registration would be allowed.

wrong stickers, 88 with stickers expired for 60 days or less, and 46 with stickers expired more than 60 days.

## 2. Upstate

For the low enhanced I/M program in Upstate, 59.13% of the light-duty fleet was required to have an OBD II inspection. A total of 5,213,682 inspection stickers (for safety inspections and emissions tests) was issued.

DMV implemented registration-based denial enforcement program for Upstate starting with dealer transactions in December 2006. Enforcement for the registration renewal population will be phased-in gradually starting with the September 2007 renewals.

NYSDMV inspected 5,668 stickers from Upstate vehicles. Based on the inspection sticker compliance surveys, an overall compliance rate of 96.28% was found: 39 had no stickers, 3 had the wrong stickers, 109 with stickers expired for 60 days or less, and 66 with stickers expired more than 60 days.

### **III. BIENNIAL REPORTS**

Changes made during 2005 and 2006 that affect the program design, funding, personnel levels, procedures, regulations, and legal authorities are summarized in the following three sections:

- OBD II inspection program for NYMA and Upstate
- TLC OBD II inspection program
- NYTEST program in NYMA

#### **A. OBD II Inspection Program for NYMA and Upstate**

The OBD II inspection program (or NYVIP) was fully implemented first for the Upstate region on December 1, 2004. All applicable 1996+ model year light duty fleet in 2005 (2,821,855 vehicles) as well as in 2006 (3,089,027 vehicles) were OBD inspected.

This NYVIP was expanded into NYMA on May 5, 2005. Hence, in 2005, only 58.23% of the total NYMA emissions tested fleet were OBD inspected. An additional 5.73% of the fleet was not OBD inspected (i.e., 390,963 of them had transient tests and 114,924 vehicles had idle tests). Three OBD II software versions were used during 2005. However, in 2006, 76.78% of the total NYMA emissions tested fleet had OBD II inspections. Except for HDVs, all applicable 1996+ model year vehicles were OBD inspected, using the same OBD II software used for Upstate.

Comparisons of OBD II inspection failure rates by vehicle model year and vehicle type are displayed in Graph 4. As can be seen, OBD II failure rates from calendar year 2005 were slightly higher than those from calendar year 2006. Rates from NYMA were slightly higher than those from Upstate.

## **B. TLC OBD II Inspection Program**

TLC's OBD II inspection program commenced on December 8, 2003. In 2005, the entire fleet of 14,527 yellow medallions (13,288 LDVs and 1,239 LDTs) had 33,406 OBD II inspections at TLC's Woodside inspection facility. This program continued to be operational in 2006, with 35,772 OBD II inspection results from 14,543 taxi cabs (12,715 LDVs, and 1,565 LDTs). Data were submitted to NYSDEC on a monthly basis, and to NYS DMV (in an approved format) regularly as well. Comparisons of OBD II inspection failure rates by vehicle model year and vehicle type are displayed in Graph 5.

## **C. NYTEST Program in NYMA**

Since May 5, 2005, OBD II inspections have become the required emissions tests for all model years 1996+ light duty vehicles and trucks. Accordingly, a large reduction in the number of vehicles receiving NYTEST was expected. In fact, this NYTEST volume reduction is calculated to be 52.59%: in 2005 a total of 1,637,935 vehicles received NYTEST from 3,918 testing facilities, whereas in 2006 NYTEST inspections were reduced to 861,405 vehicles from 3,765 testing facilities.

This NYTEST volume reduction between the two calendar years had a significant impact on allocation of audit resources. That is, the NYSDEC became aware that some percentage of the NYTEST testing facilities performed a larger percentage of the overall NYTEST inspections, while other facilities were found to be performing very few NYTEST inspections. Through continuous monitoring and reviewing these statistics, NYSDEC in October 2006 adjusted audit staff assignments so that the auditing of high volume testing facilities is undertaken at a higher priority than auditing those performing only a few NYTEST inspections. These modifications were undertaken in recognition that any testing facility that has received heavier traffic on its dynamometer and associated devices may need more monitoring than one that almost never uses its equipment. From a total of 1,056 facilities audited in 2006, 29 of these were audited twice.

Comparisons of NYTEST (transient and idle) failure rates by vehicle model year for LDVs and LDTs are displayed in Graph 6.

## **IV. CONCLUSIONS**

During 2006, the State of New York has continued the OBD II inspection program for all model year 1996+ light duty fleet registered in both the NYMA and Upstate I/M areas, and the NYTEST program for all 1981 to 1995 model year light duty fleet registered in NYMA. A TLC OBD II inspection program, which began on December 8, 2003, has also continued onto 2006 with various improvements.

More important, continuing efforts on the part of NYSDEC and NYS DMV will enable New York State to maintain conformance with the SIP, and its intended goal: cleaner air for the residents of the State of New York.