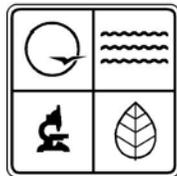




MISSOURI STATE IMPLEMENTATION PLAN
INSPECTION AND MAINTENANCE PROGRAM
FOR THE ST. LOUIS 8-HOUR OZONE
NONATTAINMENT AREA
2007 REVISION

Missouri Air Conservation Commission
Adoption: December 6, 2007



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EXECUTIVE SUMMARY

Beginning September 1, 2007, the Gateway Vehicle Inspection Program was phased in. Inspection equipment was delivered and inspector/mechanic training was implemented throughout the month of September. On October 1, 2007, the Gateway Vehicle Inspection Program (GVIP) began testing 1996 and newer light-duty gasoline-powered and 1997 and newer light-duty diesel-powered vehicles registered or primarily operated in St. Louis city and St. Louis, St. Charles, Jefferson and Franklin counties. Owners of vehicles subject to an emissions test have the convenience of choosing a licensed inspection station that offers both safety inspections and OBD tests at one location.

On June 13, 2007, the department submitted its eight-hour ozone SIP, which included the current, centralized I/M program until Sept. 1, 2007, and the Basic I/M Performance Standard thereafter. This document describes the emissions I/M portion of the eight-hour ozone SIP that complies with the 40 CFR Part 51 Subpart S - Inspection/Maintenance Program Requirements for basic I/M programs required by the St. Louis area's "moderate" ozone nonattainment status.

HISTORICAL BACKGROUND

Issues and Actions from 1984 - 1990

On January 1, 1984, the state of Missouri implemented a decentralized motor vehicle Inspection and Maintenance (I/M) program in the St. Louis metropolitan area (St. Louis City and St. Charles, St. Louis, and Jefferson counties). This action was necessary due to the federal Clean Air Act (CAA) that required states designated as nonattainment to implement either "basic" or "enhanced" vehicle emissions testing I/M programs. The type of program implemented was determined based upon the severity of the problem and the size of the affected population. Missouri implemented a "basic" program because it had been designated as "moderate" for ozone nonattainment. The "basic" program was implemented by individual, privately-owned, vehicle repair shops that were licensed by the state. The program was jointly administered by the Missouri State Highway Patrol and the Missouri Department of Natural Resources.

The United States Environmental Protection Agency (EPA) conducted its first audit of the I/M program in 1985. The EPA determined that the state's efforts were not achieving minimum required Volatile Organic Compounds (VOC) emission reductions necessary for an acceptable I/M program. EPA conducted a second audit in 1987. Again, the findings reflected that the state's efforts were still not meeting sufficient reductions in VOC. The program continued to exhibit low failure rates, an unrepresentative tampering rate, and an excessive waiver rate. These conditions meant that the I/M program was not meeting emission reduction rates required by the Minimum Emission Reduction Requirement (MERR) standards.

The two audit findings required that Missouri prepare a corrective action plan (CAP) to correct the deficiencies. At the time of the audits, the single speed idle tailpipe emissions test that was being used was ineffective for identifying polluting 1981 and newer vehicles. Missouri's CAP, sent to EPA in December 1990, was to implement a BAR90 program. The BAR90 vehicle emissions testing method used a computerized analyzer, resulting in more accurate readings.

Issues and Actions from 1991 – 1994

The EPA conducted an audit of the new BAR90 program in August of 1992. Once again the EPA determined that Missouri's efforts were still not meeting sufficient reductions in VOC emissions pursuant to MERR for a basic I/M program. Discussions between EPA and the department led to the conclusion that a decentralized BAR90 vehicle emissions testing program was inadequate for the state's needs.

States that fail to meet MERR, even after implementing corrective action plans, are required to submit a State Implementation Plan (SIP). The SIP must detail, pursuant to 40 CFR 51.372(a)(1) – (a)(8), how deficiencies will be corrected. These include, but are not limited to: 1) Implementation schedule, 2) Analysis of emission level targets using the most recent EPA mobile source emission model, 3) A description of the geographic coverage of the program, including ZIP codes, 4) Legal authority for the program, and 5) Evidence of adequate funding and resources to implement all aspects of the program.

These talks culminated in the decision to switch from a decentralized (test-and-repair), basic single speed idle tailpipe test to a centralized (test-only), enhanced transient tailpipe test. However, existing Missouri law did not allow for a centralized, enhanced transient tailpipe vehicle emissions program. Therefore, the department pursued legislation in 1994 to authorize the implementation of a centralized, enhanced vehicle emissions testing program in the St. Louis nonattainment area.

On May 13, 1994, the legislature passed Senate Bill 590, authorizing a centralized, test-only enhanced I/M program. The enacting legislation, Sections 643.300 to 643.355, RSMo are known collectively as the "Air Quality Attainment Act" and were a direct result of the federal Clean Air Act. The Missouri Air Conservation Commission (MACC) then adopted the necessary department rules in 1995 to make this centralized, enhanced I/M program a reality.

Issues and Actions from 1995 – 1999

The Missouri Department of Natural Resources submitted a revised SIP to EPA in 1995. This revision included the 15 percent rate of progress plan (ROP) and the submission of additional documentation in support of the SIP. During this same year the Missouri General Assembly withheld appropriations for the start of the centralized, enhanced I/M program. As a result of that action, the EPA on March 18, 1996, informed Missouri that it was contemplating disapproving Missouri's I/M SIP because the SIP no longer complied with EPA's I/M rule.

Missouri was required to come into compliance with the air quality health standards of the Clean Air Act for ozone by the end of 1996. The deadline was not met and EPA granted Missouri an extension. There were multiple legal challenges brought by the Missouri General Assembly against the EPA and the State of Missouri regarding the authority of both the Federal and State government to require or implement such a centralized, enhanced I/M program.

During the 1997 legislative session, the Missouri General Assembly restored funding for the start of the centralized, enhanced I/M program. The Missouri Department of Natural Resources submitted a revised SIP to EPA on August 5, 1997, to reflect that the state was now in compliance with EPA rules regarding adequate tools and resources. The department attempted

to meet the state legislature's desires for a hybrid "decentralized" I/M program in 1997 by releasing a Request for Proposal (RFP) that required one or more contractors to construct and operate 32 testing stations. Emissions testing vendors did not submit bids for this 1997 RFP because this hybrid "decentralized" design was not economically feasible for the vendors.

After the 1997 hybrid "decentralized" design was rejected by vendors, the state released a second Request for Proposal (RFP) on October 26, 1998, seeking bidders to implement a centralized, enhanced I/M program. In February 1999, a contract was signed with Environmental Systems Products (ESP) to test vehicles in Missouri. At the time of the contract award, ESP was the nation's largest and most experienced vehicle emissions testing contractor, testing over 15 million cars a year in North America alone. ESP also operated internationally, in countries such as in China and Canada.

ESP built 10 new state-of-art vehicle emissions testing stations throughout the nonattainment area. The locations were sought to maximize motorist convenience as defined by state statute and required in the contract with the State.

Because the single speed idle test equipment was not Y2K compliant, the "BAR 90" basic I/M program ended on December 31, 1999.

Issues and Action from 2000 - 2006

The Gateway Clean Air Program (GCAP) centralized vehicle emissions testing station network became operational in April, 2000. The affected areas were: St Louis City, St Louis, St. Charles and Jefferson counties, areas declared to be "nonattainment" by the EPA, pursuant to the federal Clean Air Act. 1971 to 1980 model year vehicles were tested with a single speed idle test. 1981 and newer model year vehicles were tested with the transient IM240 tailpipe and a gas cap pressure test. 1996 and newer model year vehicles also received an advisory-only on-board diagnostics (OBD) test. These tests were conducted on a biennial basis, with even model year vehicles tested in even calendar years and odd model year vehicles tested in odd calendar years. Motorists with January-April plates on even model year vehicles were given temporary emissions inspection extensions until later months in 2000.

GCAP also used remote sensing technology, allowing vehicles to be screened as clean as they were being driven on the road. This part of the program started collecting data in February 2000, and thousands of motorists began receiving notices stating that their vehicles had already passed the emissions test without having to visit a testing station. Missouri's centralized, enhanced I/M program was one of the first in the nation to use this clean screen method to increase the convenience of the I/M program for motorists. Once the public became familiar with this test method, the remote sensing test option successfully reduced the number of vehicles being tested at the centralized emissions inspection stations and helped to reduce motorist wait times.

The state elected to start GCAP using EPA-recommended phase-in IM240 emissions standards, or cutpoints, to give the public and the repair industry a chance to become accustomed to the new emissions test procedure, the method of measuring exhaust emissions and the repair requirements. Beginning in February 2002, the state implemented EPA-recommended final IM240 cutpoints for 1981 and newer model years for hydrocarbons (HC), carbon monoxide

(CO), and oxides of nitrogen (NO_x). Missouri's centralized, enhanced I/M program was one of the first in the nation to use final IM240 cutpoints for all three pollutants.

The use of on-board diagnostics (OBD) testing for 1996 and newer model year vehicles was a part of the original GCAP design. The original OBD testing design complied with EPA regulations finalized in 1998. These regulations called for the use of OBD testing no later than January 1, 2001. As a result of EPA's evaluation of various OBD testing and repair issues, EPA promulgated a new OBD rule on April 5, 2001. This rulemaking gave states the option to delay OBD testing until January 1, 2002. It also gave states the flexibility to use phase-in OBD testing until no later than January 1, 2005. Because the GCAP was a relatively new program, the state decided to take advantage of the additional flexibility offered by the EPA.

In March 2002, the MACC held a public hearing regarding Missouri's OBD testing plan. The plan called for a one-year delay of OBD testing until January 1, 2003, and a two-year phase-in of OBD testing until January 1, 2005. During the OBD phase-in, vehicles that passed the OBD test skipped the IM240 tailpipe test. Vehicles that failed the OBD test or had too many unset readiness monitors received the IM240 tailpipe test. Vehicles that failed the OBD and IM240 tests were required to be repaired and retested. If the vehicle passed the IM240 retest, the vehicle was permitted to be registered.

In April 2002, the MACC adopted this plan, and the department submitted this plan to the EPA for approval as a SIP revision. In July 2002, the MACC held a public hearing regarding revisions to state rule 10 CSR 10-5.380. This rule amendment included Missouri's OBD testing plan adopted in April 2002. In August 2002, the MACC adopted the rule amendment, and the department submitted this rule to the EPA for approval as an additional SIP revision. This form of phase-in testing did not meet the requirements of the EPA's 2002 OBD flexibility rule which required retested vehicles to pass the OBD test, not the IM240 test. However, the EPA was able to approve this design because the St. Louis ozone nonattainment area was being redesignated to attainment, and the department included the OBD test as a contingency measure in the one-hour ozone maintenance plan. Both of these SIP revisions were approved by the EPA on May 12, 2003, the same day that the St. Louis area was redesignated as a maintenance area for the one-hour ozone standard.

The 2002 rule amendment also addressed the extremely high waiver rate that the department was tracking. By 2002, one in four, or 25 percent, of the initially failed vehicles were receiving a waiver. Because the I/M SIP had committed the state to waiving no more than eight percent of the initially failed vehicles, and because the MACC had the statutory authority to set the waiver spending minimums, the 2002 rule amendment increased the waiver requirements. Effective January 1, 2003, the waiver spending minimums were increased as follows:

Vehicle Model Years	1999 Rule Waiver Minimums	Vehicle Model Years	2002 Rule Waiver Minimums
1971-1980	\$75	1971-1980	\$200
1981-1996	\$200	1981-1995	\$450
1997 and newer	\$450	1996 and newer	\$450 + CPI Adjustment

In addition, vehicles that failed a tailpipe emissions test were required to show a reduction in the failing pollution measurements without causing a passing pollutant to become a failing pollutant. Lastly, the rule amendment added a continuing education requirement for Missouri Recognized Repair Technicians (MRRT) so that MRRTs would increase their knowledge of how to perform effective emissions repairs. As a result of this rule amendment, the GCAP waiver rate was reduced from 25 percent to three percent of the initially failing vehicles, thereby significantly increasing the repair effectiveness of GCAP.

At the end of the ozone season in 2002, the monitors in St. Louis recorded compliance with the one-hour ozone standard. The department submitted a request for redesignation to the EPA in December 2002. The EPA approved the request, and St. Louis became a maintenance area under the one-hour ozone standard. As part of the maintenance plan, the department committed to retain most of the pollution reduction strategies that were put in place to achieve the standard, including a vehicle emissions I/M program of some kind.

Phase-in OBD testing began in January 2003. Phase-in OBD testing was used until June 6, 2005, when pass/fail OBD testing replaced IM240 tailpipe testing for 1996 and newer model year vehicles. Vehicles that had too many unset readiness monitors received a Reject test result and had 60 days of free retesting to set their vehicle's readiness monitors to ready.

In 2004, the EPA redesignated the St. Louis ozone maintenance area as a "moderate" ozone nonattainment area under the newly established eight-hour ozone standard. This nonattainment designation required the department to develop a State Implementation Plan (SIP), filed by June 2007, to bring the area into compliance of the eight-hour ozone standard by June 2010. The "moderate" ozone nonattainment status required the state to include within its SIP a vehicle emissions I/M program that met or exceeded the EPA's Basic I/M Performance Standard.

During the 2004 and 2005 Missouri General Assembly sessions, there were several unsuccessful attempts to end the GCAP. At the conclusion of the 2005 legislative session, the department and the East-West Gateway Council of Governments hosted an Emissions I/M Summit in St. Louis. Invited participants included: members of the Missouri General Assembly who had sponsored or cosponsored emissions I/M legislation; federal, state and local agencies; community members; the automotive sales and service industry, and public health and environmental groups.

The purpose of the Emissions I/M Summit was to bring the St. Louis community together to consider and build consensus for a redesign of the federally-required vehicle emissions I/M program in St. Louis. Even though the centralized contract ended on Sept. 1, 2007, the statutory authorization for the current emissions I/M program did not have a sunset provision. Therefore, changing the design of the next vehicle emissions I/M program required legislation. In order to keep within the timeframes for SIP submittal, legislation had to be passed during the 2006 session.

The final outcome of the Emissions I/M Summit was a white paper that documented the Emissions I/M Summit discussions and the opinions of participants regarding emissions I/M program design elements. The Emissions I/M Summit stakeholders prepared this document to

aid the Missouri General Assembly in its deliberations on emissions I/M legislation during the 2006 session.

Based upon this white paper, the Missouri General Assembly, with assistance from the department and the Missouri State Highway Patrol, drafted legislation to implement a decentralized, OBD-only vehicle emissions I/M program that would dovetail with the existing decentralized statewide safety inspection program. With sustained legislative effort, Senate Bill 583 was passed and signed into law on June 30, 2006.

Once this law took effect, the department, with assistance from the Missouri State Highway Patrol, drafted and released a Request for Proposal to secure the services of a sole-source contractor to provide the infrastructure for a real-time, fraud-resistant decentralized emissions inspection station network. On May 29, 2007, the state awarded the contract to SysTech International. The contract period lasts until Sept. 1, 2011, with the option of a two-year extension until Sept. 1, 2013, and a one-year extension until Sept. 1, 2014.

SysTech International is responsible for selling state-approved inspection equipment to the participating licensed inspection stations that will collect safety inspection and OBD test data. SysTech is also responsible for ensuring that all of the inspection data is uploaded to a vehicle inspection database (VID) for real-time web portal-based distribution to the state, and for providing the state with a variety of oversight and enforcement capabilities to detect and deter improper vehicle inspections, repairs, or registrations.

Missouri's Vehicle Emissions Inspection and Maintenance Program

A. Applicability

In 2004, the St. Louis area was designated by the EPA as a “moderate” ozone nonattainment area. Pursuant to 40 CFR 51.350 (a)(4), the State Implementation Plan (SIP) must include the implementation of a basic I/M program. Pursuant to 40 CFR 51.350 (b)(2), the I/M program must cover at least the entire urbanized area of the metropolitan statistical area (MSA), based upon the 1990 census. Pursuant to 40 CFR 51.350 (c), the legislation authorizing the I/M program shall not sunset prior to the June 2010 attainment deadline for “moderate” eight-hour ozone nonattainment areas. Pursuant to 40 CFR 51.350 (d), the SIP shall describe the applicable areas in detail and include the legal authority or rules necessary to establish the I/M program’s boundaries. The authorizing Missouri statutes had differing effective dates as described below. The Gateway Vehicle Inspection Program officially began on September 1, 2007, with vehicle inspections beginning October 1, 2007.

1. 643.303 RSMo (Attachment 1), effective Aug. 28, 2006, authorized the Missouri Air Conservation Commission (MACC) to implement a decentralized I/M program using the on-board diagnostics (OBD) test method. This statute does not contain any sunset provisions.
2. 643.305 RSMo (Attachment 1), effective Sept. 1, 2007, authorized the MACC to adopt a vehicle emissions I/M SIP for the St. Louis eight-hour ozone nonattainment area. This statute does not contain any sunset provisions. The statute specifically defines the SIP geographical area as consisting of St. Louis City (“a city not within a county”) and the Counties of St. Louis (“any county with a charter form of government and with more than one million inhabitants”), St. Charles (“any county with a charter form of government and with more than two hundred fifty thousand but fewer than three hundred fifty thousand inhabitants”), Jefferson (“any county of the first classification with more than one hundred ninety-eight thousand but fewer than one hundred ninety-nine thousand two hundred inhabitants”), and Franklin (“any county of the first classification with more than ninety-three thousand eight hundred but fewer than ninety-three thousand nine hundred inhabitants”). These statute references are based on the 2000 census data in the table below.
3. 643.310 RSMo (Attachment 1), effective Sept. 1, 2007, authorized the MACC to adopt a vehicle emissions I/M rule that will impact any portion of a nonattainment area located within the area described in 643.305 RSMo, provided the decentralized emissions I/M program rule is implemented and applied in the same manner throughout every portion of a nonattainment area. This statute does not contain any sunset provisions. The MACC has adopted 10 CSR 10-5.381 (Attachment 2), effective Aug. 30, 2007, which authorizes the decentralized emissions I/M program described in the I/M portion of the SIP.

4.

Census Population of the I/M Area

County	Population 1990	Population 2000
St. Louis City	396,685	348,189
St. Louis	993,529	1,016,315
St. Charles	212,907	283,883
Jefferson	171,380	198,099
Franklin	80,603	93,807
Total	1,855,104	1,940,293

Census information based on U.S. Census Bureau records.

5. A list of zip code areas covered by the I/M program is included in Attachment 10.

B. I/M Performance Standard for the Basic Decentralized Program

The department uses the EPA approved model to evaluate the I/M program described herein for emission reduction effectiveness.

1. Attachment 6 contains the input and output files for MOBILE6. This model was used to estimate the emission reduction benefits of implementing a basic decentralized I/M program in the St. Louis nonattainment area. Below is a table that compares the Basic I/M Performance Standard to the Gateway Vehicle Inspection Program inputs and a narrative describing the affect of each input on the MOBILE6 outputs.

<i>40 CFR 51.352 (a) reference</i>	<i>Basic I/M Performance Standard</i>	<i>Gateway Vehicle Inspection Program</i>
(1) Network type	Centralized	Decentralized
(2) Start date	1983	1983
(3) Test frequency	Annual	Biennial
(4) Model year coverage	1968 and newer	1996 and newer
(5) Vehicle type coverage	Light duty vehicles	Light duty vehicles, light duty trucks
(6) Exhaust emission test type	Idle for 1968-1995 model years, OBD for 1996 and newer	OBD for 1996 and newer
(7) Emission standards	40 CFR Part 85 Subpart W	40 CFR Part 85 Subpart W
(8) Emission control device inspections	None	None
(9) Stringency	20% for 1968-1980 model years	20% for 1968-1980 model years
(10) Waiver rate	0%	8%
(11) Compliance rate	100%	96%

The Basic I/M Performance Standard network type of centralized refers to a small network of high volume test-only inspection stations. This is the ideal case, because there is no incentive for the inspector at these centralized inspection stations to falsely pass or falsely fail the vehicle. Because centralized is the ideal test network type, the

MOBILE6 model outputs maximum credit for this network design. The Gateway Vehicle Inspection Program network type of decentralized refers to a large network of low volume test-and-repair inspection stations. This case is less than ideal, because there is some incentive for the inspector at these decentralized inspection stations to falsely pass or falsely fail the vehicle.

Because decentralized is not the ideal test network type, the MOBILE6 model subtracts up to 50 percent of the maximum credit available under a centralized design, depending on what a state claims is the discount for its decision to use a decentralized design. The Gateway Vehicle Inspection Program modeled its decentralized program claiming only a 10 percent deduction, or 90 percent of the maximum centralized credit, for its design because of the innovative biometric inspector identification and comprehensive auditing measures that are built into the state's contract (Attachment 4).

The start date for the Basic I/M Performance Standard and the Gateway Vehicle Inspection Program are the same because Missouri has been conducting vehicle emissions testing in the St. Louis ozone nonattainment area since 1983. The stringency for both designs is set at 20%. Even though the Gateway Vehicle Inspection Program exempts 1968-1980 model year vehicles from an emissions inspection, the MOBILE6 model won't run properly unless a stringency value is input. As a result, MDNR inputs a meaningless value of 20% for the Gateway Vehicle Inspection Program.

The Basic I/M Performance Standard waiver rate is 0%, while the Gateway Vehicle Inspection Program waiver rate is 8%. The Gateway Vehicle Inspection Program statutes require the MDNR to grant vehicle waivers if motorists have spent at least \$450 repairing their vehicles without getting the vehicles to pass the OBD test. By waiving no more than eight percent of the initially failing vehicles, the Gateway Vehicle Inspection Program is more convenient for motorists while also less effective for improving air quality. As a result, the MOBILE6 outputs slightly less credit for the Gateway Vehicle Inspection Program design.

The Basic I/M Performance Standard compliance rate is 100%, while the Gateway Vehicle Inspection Program compliance rate is 96%. Based upon the MDNR's experience with operating vehicle emissions inspection programs, there are always vehicles that "disappear". They can legally disappear if vehicle owners relocate the vehicle outside of the nonattainment area. If these vehicles are polluting vehicles, the relocation of these vehicles outside of the nonattainment area has a positive air quality impact on the nonattainment area. Or, they can illegally disappear if vehicle owners choose to drive with expired license plate tags or fraudulently registered vehicles. If these vehicles are polluting vehicles, the continued operation of these vehicles inside the nonattainment area has a negative air quality impact on the nonattainment area. As a result of 4% of the vehicles disappearing, the MOBILE6 outputs slightly less credit for Gateway Vehicle Inspection Program design.

The Basic I/M Performance Standard test frequency is annual, which tests all vehicles once per year. The Gateway Vehicle Inspection Program test frequency is biennial,

which tests all vehicles once every other year. Because annual inspections will identify failing vehicles more frequently and sooner than biennial inspections, the MOBILE6 outputs slightly less credit for the Gateway Vehicle Inspection Program's biennial test frequency design.

The Basic I/M Performance Standard covers model year passenger vehicles 1968 through 2007. 1968 through 1995 model year passenger vehicles are tested with a single speed idle test, and 1996 and newer model year passenger vehicles are tested with an OBD test. Light duty trucks are exempted from the emissions inspection. The Gateway Vehicle Inspection Program exempts 1995 and older passenger vehicles and light duty trucks from an emissions test, and tests 1996 and newer model year passenger vehicles and light duty trucks with an OBD test. Because the Gateway Vehicle Inspection Program exempts 1995 and older passenger vehicles and light duty trucks from an emissions test, the MOBILE6 model outputs slightly less credit for passenger vehicles when compared with the Basic I/M Performance Standard. Because the Gateway Vehicle Inspection Program tests 1996 and newer light duty trucks with the OBD test, the MOBILE6 model outputs slightly more credit for light duty trucks when compared with the Basic I/M Performance Standard.

To illustrate how these differences in MOBILE6 credit apply, in Attachment 7, the VOC emissions factor for LDGV tested in the Basic I/M Performance Standard is 0.684 grams per mile (gpm), while the VOC emissions factor for LDGV in the Gateway Vehicle Inspection Program is 0.725 gpm. The Basic I/M Performance Standard design achieves a LDGV average that is lower than the Gateway Vehicle Inspection Program design LDGV average by 0.041 gpm due to the centralized test network, annual testing and the testing of 1968-1995 model year LDGVs. The VOC emissions factor for LDGT1 tested in the Basic I/M Performance Standard is 0.953 gpm, while the VOC emissions factor for LDGT1 in the Gateway Vehicle Inspection Program is 0.881 gpm. The Gateway Vehicle Inspection Program design achieves a LDGT1 average that is lower than the Basic I/M Performance Standard design LDGT1 average by 0.072 gpm due to the OBD testing of 1996 and newer LDGT1s, despite the decentralized test network and biennial testing frequency, because the OBD test fails and causes the repair of far more LDGTs than does exempting all LDGTs.

2. The basic decentralized I/M program will meet or exceed the basic I/M performance standard beyond the year 2011. After the complete implementation of all program elements, the Missouri Department of Natural Resources (MDNR) will demonstrate that the program meets the relevant performance standards. Additionally, the I/M program design criteria will be documented relative to the performance standards.
3. Attachment 7 includes a description of the calculations used for the modeling. Summarizing the calculated results described more fully in Attachment 7, the MOBILE6 composite emissions factors for all light duty vehicles (LDGV) and light duty trucks (LDGT) were 0.868 gpm VOC, 8.696 gpm CO, and 0.819 gpm NO_x for the Basic I/M Performance Standard and 0.842 gpm VOC, 8.241 gpm CO, and 0.776 gpm NO_x for the Gateway Vehicle Inspection Program. The only reason that the decentralized, biennial,

OBD-only, 8% waiver rate, 96% compliance rate Gateway Vehicle Inspection Program outperforms the centralized, annual, idle and OBD, 0% waiver rate, 100% compliance rate Basic I/M Performance Standard is that Gateway Vehicle Inspection Program tests LDGTs, whereas the Basic I/M Performance Standard does not.

C. Network Type and Program Evaluation

MDNR has established a vehicle emissions testing program that is consistent with EPA regulations. The St. Louis ozone nonattainment area I/M program is a decentralized contractor operated program. The contractor, SysTech International (STI), designed the OBD test equipment purchased by the licensed vehicle emissions stations and collects the test data to establish and maintain the vehicle inspection database (VID). The licensed emissions test stations and vehicle safety inspection stations, are operated by privately owned state licensed inspection licensees stations.

1. The basic I/M program is a decentralized, test-only and test and repair system operated by the State's contractor, SysTech International. Vehicles in St. Louis City, and the counties of Franklin, St. Louis, St. Charles and Jefferson included in the emission reduction demonstration discussed in section C are required to comply with the I/M program are tested biennially by the contractor at decentralized test-only and test and repair I/M licensed emission test stations. A motorist's whose vehicle fails an emissions test is provided with a list of up to (10) vehicle repair shops closest to the vehicle emissions station where the vehicle initially failed the emissions test. The motorist has the option to have the vehicle repaired where it failed the test or the owner can elect to go to another shop for repairs. Emissions inspection stations are required to provide the owners of failed vehicles a vehicle inspection report (VIR), a repair data sheet, a repair facility performance report, and a copy of the customer complaint procedure.
2. MDNR has developed an evaluation methodology consistent with the EPA regulations. The procedures includes the following steps:
 - a. MDNR or MSHP representatives overtly visit each I/M licensed emissions inspection station, at least twice per year. They audit the test components and inspection procedures. They audit the record keeping and observe inspectors performing the emission tests on vehicles submitted for testing by the general public.
 - b. MDNR and MSHP representatives covertly audit each I/M licensed emissions station at least once per year. Every month of the year there are covert audits. Vehicles are chosen randomly and are tested at different times during the day. During covert audits, MDNR and MSHP staff not only check for adherence to test practices and procedural requirements by the licensed emissions inspector, but also record the results of the observation and emission inspection.
 - c. The program evaluation report uses the MOBILE 6 model to compare the GVIP with the Basic I/M Performance Standard (the requirement for moderate ozone nonattainment areas). The program evaluation report provides EPA, the General Assembly, and the public with an accurate evaluation of the benefits of the GVIP, and an evaluation of its contribution to St. Louis air quality improvements.

3. The results of the ongoing quality assurance program and the program evaluations are incorporated into the annual report. The annual report will meet the requirements of 40 CFR 51.366, described in Section Q. The first annual report will be submitted to EPA two (2) years after the date of program implementation, with subsequent annual reports submitted July 1, of each subsequent calendar year.
4. To demonstrate that the state has met the requirements of a basic I/M program under 40 CFR 51.353, MDNR will submit emissions data from the first twelve months of operation of the decentralized Gateway Vehicle Inspection Program within 12 months of EPA's conditional approval of the state's revised I/M program. This data will include initial failure, retest pass, and waiver rates.

D. Adequate Tools and Resources

The MDNR's administrative oversight is funded through fees paid by the vehicle emissions stations to provide the necessary resources to monitor a basic I/M program in accordance with EPA regulations. The contractor, STI, receives \$3.45 per paid emissions test and state expenses are recovered with vehicle emissions test fees paid to licensed emissions test stations, for the I/M inspection. The state's portion of the fee is appropriated by the Missouri General Assembly for state costs for I/M oversight staff and their workspace and equipment.

1. The Basic Test I/M Program is funded through a per vehicle inspection fee authorized by the General Assembly. The fee is \$24 as set by the Missouri Air Conservation Commission (section 643.350.1., RSMo 2006). The licensed emissions inspection station is required by contract to pre-pay \$2.50 for each paid emissions inspection that they intend to perform. The fee is paid to the Director of Revenue and submitted to the Missouri State Highway Patrol (MSHP). The MSHP deposits the fee into the "Missouri Air Emissions Reduction Fund" as established by Section 643.350, RSMo. The MSHP then notifies the contractor, STI, who then authorizes the licensed emissions inspection station equipment to release the number of paid emissions inspections pre-paid by each licensed emissions inspection station.
2. Attachment 5 includes a copy of a portion of House Bill 6 (Budget Bill) showing I/M program appropriations for state fiscal year 2008 and a budget for the program. MDNR will maintain I/M staffing levels to adequately cover overt and covert auditing, data collection and analysis, report preparation, performance monitoring, technical assistance, consumer assistance, waiver oversight, administrative and clerical functions. The Personnel Service Summary table located on the following page outlines the positions allocated for the I/M program.
3. MDNR has a budget for vehicles to be used for covert auditing; MDNR also maintains a rotating fleet of other department vehicles to maintain covert operation integrity. MDNR and MSHP have complete access to the contractor's computer system to allow MDNR and MSHP staff to analyze data and conduct other necessary data related functions. See Attachment 4 of the contract for specifics.

Personal Service Summary

Environmental Specialist IV	1.0 FTE	Chief for I/M unit. Supervises all APCP I/M staff and field staff.
Environmental Specialist III	9.0 FTE	Supervision of technical positions, technical assistance and consumer education/assistance. Also conducts overt and covert station audits, performance monitoring, technical assistance, and consumer education/assistance and waiver oversight.
Staff Director	0.10 FTE	Program Director for Air Pollution control Program (APCP)
Environmental MGR B1	1.0 FTE	Oversees St. Louis Regional Office I/M Staff
Admin Office Support Assistant	0.60 FTE	Audits, documents and processes payments.
Office Support Asst. (KEYBRD)	1.07 FTE	Audits documents and processes time accounting submissions.
Environmental Engineer II	0.25 FTE	Check equipment specifications for the contract/operation oversight
Planner II	1.0 FTE	Contract development, oversight data, and fiscal control.
SR OFC Support Asst. (KEYBRD)	1.40 FTE	Clerical support for technical staff, management, and research analysts.
Account Clerk II	0.20 FTE	Processes revenues and accounts receivables.
Accountant II	0.20 FTE	Performs fiscal and budget planning functions.
Accountant III	0.20 FTE	Financial management and Human Resources liaison.
Environmental Engineer III	2.0 FTE	Supervise the field staff who will do the field audits of emission test stations and repair facilities.
TOTAL	18.02 FTE	

4. St. Louis Regional Office (SLRO) auditing staff (Engineer III and Environmental Specialist IIIs) receive: 1) Training on the inspection station analyzers by SysTech, 2) Training on the state's I/M law and department regulations, 3) Training in either APTI 452 Principles and Practices of Air Pollution or the California Air Resources Board (CARB) 100 (101 – 115), 4) Classroom instruction provided by either Federal Mogul, AC Delco or Illinois Environmental Protection Agency (IEPA), 5) Inspection and Enforcement (I&E) training through DNR, and 6) Training by SLRO Unit Chiefs and the Services Unit Chief. All management staff are required to receive a minimum of 16 hours of management training each fiscal year. Additionally, depending on the availability of out-of-state travel funds, I/M staff are trained at either the I/M Solutions Forum or the National Center for Vehicle Emissions and Safety Clean Air Conference. All clerical and accounting staff are trained on the office software and general document production policies of the MDNR as needed.

E. Test Frequency and Convenience

Basic emissions I/M tests are required biennially. Motorist convenience is assured by state law that requires the department to recruit vehicle repair stations if more than twenty percent (20%) of motorists are more than five (5) miles from a vehicle repair station. The MDNR actively monitors vehicle repair station participation rates and has established public information programs to ensure compliance with EPA regulations.

1. **Basic Test I/M Program**

Test frequency is biennial for all subject vehicles in the basic test area. For new vehicles, which have an odometer reading of less than six thousand miles at the time of original sale, the model year dictates when the first emissions inspection is required. For even (odd) model year new vehicles originally sold in an even (odd) calendar year, the first emissions inspection is required for the second registration renewal which corresponds to two years after initial titling and registration. For even (odd) model year new vehicles originally sold in an odd (even) calendar year, the first emissions inspection is required for the first registration renewal which corresponds to three years after initial titling and registration.

For example, if a 2000 model year vehicle is sold in 1999, the first emissions inspection is required for re-registration in the calendar year 2002. This provision facilitates the implementation that even model year vehicles will be tested in even calendar years and odd model year vehicles will be tested in odd calendar years, and biennially thereafter (subsection 1 of section 643.315, RSMo and 10 CSR 10-5.381).

Newly purchased used vehicles or those requiring a title transfer are required to be emission inspected and certified prior to being registered in a new owner's name. Thereafter, they are required to be inspected biennially such that even model year vehicles will be tested in even calendar years and odd model year vehicles will be tested in odd calendar years. Statutory and regulatory authority is contained in sections 643.300 to 643.355, RSMo (Attachment 1) and 10 CSR 10-5.381 (Attachment 2).

Vehicles that are newly registered in the program area from other states or from other parts of the state must be inspected according to the odd-odd or even-even cycle, unless they meet the reciprocity guidelines stated in 10 CSR 10-5.381(3)(K)7.A.

New vehicles that have not been previously titled for the four-year period following their model year of manufacture and have an odometer reading less than forty thousand miles at the first required biennial safety inspection, are exempt from emissions testing.

F. Vehicle Fleet Coverage

MDNR uses the registered vehicle database compiled by the Missouri Department of Revenue (MDOR) as the basis to determine which motor vehicles are required to undergo emissions testing to comply with EPA guidelines. MDNR compares the VID against the MDOR database to assist in program compliance. Vehicles that are subject to the emission test program are motor vehicles that are domiciled or primarily operated in the St. Louis ozone nonattainment area; including those that are part of private or governmental fleets; all 1996 model years and newer gasoline-fueled light duty vehicles except motorcycles (cars, pickup trucks, vans, sport utility vehicles) and 1997 model years and newer light duty diesel powered vehicles. Vehicles over 8,500 pounds gross vehicle weight rating, vehicles of the latest two (2) model years, propane, natural pollutant(s), electricity or other alternate fuels, and new vehicles not previously titled for the four year period following the model year of manufacture, having less than forty thousand

miles at the first required biennial safety inspection are exempt from emission inspection requirements.

1. Basic Test I/M Program

- a. All 1996 and later model year gasoline powered light duty vehicles and light duty trucks, 1997 and newer diesel powered light duty vehicles, up to eight thousand five hundred pounds (8,500 lbs.) Gross Vehicle Weight Rating (GVWR) are subject to the program. Tables showing the total number of subject vehicles in each county sorted by model year (as of July 2007) are included in Attachment 8a. These figures reflect the actual number of gasoline powered cars, trucks, light duty diesel powered vehicles, RVs, and buses under eight thousand five hundred and one pounds (8,501 lbs.) GVWR registered (titled and registered or registered only) in the enhanced I/M area. The total number to be tested is estimated to be 1,167,061. This information is based on the Missouri Department of Revenue (MDOR) records provided in July 2007.
- b. Dual-fueled vehicles are required to be tested using their gasoline cycle only and must meet the same test requirements and quality control standards as all subject vehicles. Vehicles with an exchanged engine (an engine not originally designed for the vehicle) are tested according to the emission standards applicable to the model year of the vehicle body. To the extent possible, all pollution control equipment required for the vehicle model year and the original engine must be in place and functional.
- c. The following vehicles are exempt from the inspection requirements of the I/M program (reference subsections 2.(1)-(11) of section 643.315, RSMo): (1) Motor vehicles with a manufacturer's GVWR in excess of eight thousand five hundred pounds (8,500 lbs.); (2) Motorcycles and motor tricycles; (3) Model year vehicles prior to 1996; (4) Vehicles which are powered exclusively by electric or hydrogen power or by fuels other than gasoline or diesel; (5) Motor vehicles registered in an area subject to the inspection requirements of sections 643.300 to 643.355 which are domiciled and operated exclusively in an area of the state not subject to the inspection requirements of sections 643.300 to 643.355, but only if the owner of such vehicle presents to the department an affidavit on DOR Form 4902 (Out of Area Waiver Request)that the vehicle will be operated exclusively in an area of the state not subject to the inspection requirements of sections 643.300 to 643.355 for the next twenty-four months, and the owner applies for and receives a waiver which shall be presented at the time of registration or registration renewal; and (6) New and unused motor vehicles, of model years of the current calendar year and of any calendar year within two years of such calendar year, which have an odometer reading of less than six thousand miles at the time of original sale by a motor vehicle manufacturer or licensed motor vehicle dealer to the first user; (7) Historic motor vehicles; (8) School buses; (9) Heavy duty diesel-powered vehicles with a GVWR exceeding 8,500 pounds; (10) New motor vehicles not previously titled and registered, for the four-year period following their model year of manufacture, if the odometer readings are under forty thousand miles at the first required biennial safety inspection; (11) Motor vehicles driven fewer than twelve thousand miles between biennial safety inspections. Vehicles meeting the

above criteria will be identified as exempt by running queries of the MDOR motor vehicle registration database. Tables showing the total number of exempt vehicles in each county in each model year (as of July 2007) are included in Attachment 8b.

2. MDNR works closely with private and public fleets that operate vehicles in the I/M area to ensure these vehicles are emissions tested. Arrangements have been made for these fleets to provide MDNR with a list of vehicles operated in the area and to update that list on a yearly basis. All subject vehicles owned by federal, state, and local governmental entities are emissions inspected in accordance with 10 CSR 10-5.381.

Attachment 8c lists the number of fleet vehicles subject to emissions testing. MDNR continues to explore ways to identify other vehicles operated in but not registered in the I/M area. Strategies used to identify unregistered vehicles operating in the I/M area are listed in Section L.

3. Private and local government fleets are tested at either licensed emission test stations, or they may opt to have I/M testing equipment installed at a fleet testing facility that will be operated and maintained at the fleet owner's expense and connected to the on-line data system. The same test procedures, equivalent equipment, and the same quality control procedures will be used in these fleet facilities as at the licensed emissions test stations. The same quality assurance procedures will be used to ensure adequate operation of these fleet facilities.
4. Federal fleet vehicles are required to comply with the same inspection program requirements as other fleet vehicles in the basic I/M area. There are approximately fifteen (15) Federal agencies in the State of Missouri I/M area, with a total of approximately two thousand six hundred (2,600) Federal fleet vehicles, including United States military vehicles and United States Postal Service vehicles in the State of Missouri I/M area. As required by EPA guidance, the I/M rule requires that vehicles which are operated on federal installations located within an I/M program area are to comply with the vehicle emissions inspection requirement, regardless of whether the vehicles are registered in the I/M area. This rule applies to all employee-owned and leased vehicles and all vehicles owned by civilian and military personnel on federal installations as well as agency-owned or operated vehicles, except tactical military vehicles. MDNR works cooperatively with all government organizations to ensure that vehicles are emissions tested.

G. Test Procedures and Standards

For 1996 and newer model year subject vehicles, the basic emissions test consists of only an OBDII test per 40 CFR 51.357 (a)(12) and (b)(4) and the standards established in 40 CFR 85.2207. There will be no steady-state, emission control device, evaporative system purge, evaporative system integrity, or transient emission test procedures utilized, as these test methods are not SIP requirements for 1996 and newer model year vehicles equipped with on-board diagnostics systems, nor authorized by the state's I/M statutes or rule.

Vehicles that fail the OBDII test must be re-tested and meet the program requirements established for achieving a “Pass” or a “Waiver” regarding the emission test results.

The authority to establish I/M test procedures and standards is contained in the enabling legislation in Attachment 1. The test procedures and test standards are specified in the rule in Attachment 2A and 2B.

H. Test Equipment

This section describes the test equipment that the contractor uses in the I/M licensed emissions stations. The basic I/M program uses EPA guidance and recommendations for equipment. Contract requirements for equipment are in the RFP section 2.23.

Each licensed emissions test station is equipped with the following or comparable equipment, as approved by the Staff Director:

1. Dell Optiplex 745 computer with Windows Vista and 1 GB RAM;
2. 17” LCD monitor; Keyboard; and Mouse;
3. USB camera;
4. High resolution digital camera and dock;
5. Fingerprint scanner;
6. USB drive;
7. Color and photo vehicle inspection report (VIR) printer;
8. Inspection sticker printer;
9. OBD verification tool;
10. OBD interface cable;
11. 2D barcode reader;
12. Secured storage cabinet and either low speed or high speed internet connection;
13. Ethernet network interface;
14. 80 GB hard drive; and
15. 16X DVD-ROM drive.

I. Quality Control

To assure quality control of equipment and facilities, the department oversees compliance to contract requirements for quality control. The contract, at RFP sections 2.14.15 , 2.14.17, 2.14.18, and 2.23.1 and at Method of Performance 44, 49, 71, 73, 76, 89, 107, and 121 , outlines requirements for quality control and maintenance, including weekly and monthly reports.

These measures ensure that Missouri meets its commitment to provide motorists with consistent and accurate test results.

J. Waivers and Compliance Using Diagnostic Inspection

Compliance Waiver 10 CSR 10-5.38 1(3)(K)1-5: Compliance waivers are issued for motor vehicles that cannot pass the emission inspection, provided a minimum dollar amount of \$450 was spent for repairs made by a repair shop, \$400 if the repair was made by the owner of the vehicle or \$200 if the individual meets the statutory requirement of section 643.335.8., RSMo., in an effort to lower emissions to within the state limits. Per the contract, RFP section 2.6.1

repairs are visually checked to verify that repairs were actually done and that they were applicable to the failure.

Repair records must show that repair expenditures were not covered by either a recall or manufacturer warranty and that parts costs and labor costs of recognized technicians total the minimum applicable amount for the model year of the vehicle.

These visual observations of the vehicle and the receipt analysis that lead to a waiver decision is conducted by state staff per the contract at RFP section 2.6.1 and 2.15 and Method of Performance section Exhibit E.

Out of Area Waiver – 10 CSR 10-5.38 1(3)(K)6: Out of Area Waivers are issued for motor vehicles that are registered in a city or county in which an emissions inspection is required but the vehicle is operated exclusively out of the area. The vehicle owner must present a completed Form 4902 from the MDOR, signed waiver affidavit to the department that says the motor vehicle will be operated exclusively outside the counties of Jefferson, St. Charles, St. Louis, or the City of St. Louis for at least the next twenty-four (24) consecutive months from the time of registration for which the waiver is issued. The emissions inspection compliance certificate has an indicator showing that the vehicle received an out of area waiver. The vehicle owner is then issued a windshield sticker for the vehicle.

Reciprocity Waiver – 10 CSR 5.380(3)(K)7.A.: The department has not entered into any reciprocity agreements as of July 2007, but will recognize the following state's passing OBD test results: Alaska, Arizona, Connecticut, Delaware, District of Columbia, Georgia, Illinois, Louisiana, Maine, Massachusetts, Maryland, Nevada, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Tennessee unless tested in Shelby County, (Memphis), Rhode Island, Texas, Utah, Vermont, Virginia, Washington, and Wisconsin.

1. Basic Test I/M Program

- a. A waiver rate of eight percent (8%) of failed vehicles is assumed in the MOBILE modeling that demonstrates that the I/M program meets the applicable performance standard. The State of Missouri maintains a waiver rate that in practice is equal to or lower than eight percent (8%). Auditors and waiver issuance personnel monitor waivers via tracking numbers. If the waiver rate reported in the annual report to EPA is higher than 8%, the State will attempt corrective action to lower the waiver rate. If the waiver rate cannot be lowered to levels committed to in the SIP, or if the State chooses not to implement measures to do so, then the State will revise the I/M emission reduction projections in the SIP and will implement other program changes needed to ensure the performance standard is met.
- b. The State of Missouri issues waivers only when the requirements of the attached I/M rule and this paragraph are met. MDNR staff are responsible for issuing waivers. Waiver issuance personnel review repair receipts to verify that a minimum expenditure equal to or greater than the statutory requirement has been made; verify that only repairs appropriate to the cause of the test failure have been claimed. Waiver issuance personnel will also check the emissions test report for

the odometer reading and model year and determine if the vehicle is eligible for warranty repairs, and will require written denial of warranty coverage before issuing a waiver for a vehicle that is eligible for such repairs. Labor costs are not eligible towards the minimum waiver expenditure unless the labor is performed by a recognized repair technician. Audit personnel perform oversight of waiver issuance. Oversight measures and procedures for the program have been established by MDNR as part of the Procedures and Specifications Manual (Attachment 9).

K. Motorist Compliance Enforcement

Owners of vehicles subject to emissions inspections may present paper documentation of their vehicle passing the emissions inspection or receiving a waiver in order to register their vehicle, in cases where the electronic data transfer from STI to the Missouri Department of Revenue (MDOR) is not available due to unforeseen circumstances. In all other cases, the MDOR will rely on the real time transmittal of emissions test results from STI as proof of a passing emissions inspection or issuance of a waiver. In Missouri, registration is required upon purchase of a vehicle and then renewal of the registration is required either annually or biennially. The MDOR requires either an original current certificate of emissions inspection (Vehicle Inspection Report (VIR)) no more than sixty (60) days old or electronic receipt from STI of such VIR, to register a subject motor vehicle, per the Missouri Driver's Guide and 12 CSR 10-23.170. Hence, the St. Louis ozone nonattainment area method of compliance enforcement for the I/M program is registration denial.

There is no direct penalty to vehicle owners or drivers for not complying with vehicle I/M requirements. Penalties are, however, associated with owning and operating a vehicle without current registration. Law enforcement officers ticket drivers for expired registration, evident by outdated tabs on vehicle license plates. Also, there are late registration penalties assessed when vehicles are registered after their registration has expired.

1. The legal authority in Attachment 1 includes the authority necessary to develop and implement the enforcement element of the I/M program. The procedures governing specific operation of this aspect of the program are contained in Attachment 9, part d). A penalty schedule for violations of these regulations is included.
2. The motorist compliance enforcement of the Missouri I/M program is based on registration denial. Basic Emissions inspection frequency is biennial, where half of the vehicle fleet is required to pass the inspection in order to obtain registration renewal each year. For even-numbered registration years, all even-numbered model year subject vehicles must pass the inspection (and odd in odd).

The enforcement of this requirement is handled in cooperation with the MDOR license fee offices in the affected counties. License fee office personnel are prohibited from issuing registration renewals and tag stickers unless an emissions VIR of compliance or electronic notification from STI is received by MDOR. Verification of exempt vehicle status is coordinated with the MDOR via quality assurance follow-ups. MDNR also

requests confirmation of registration changes triggering an exemption. A Memorandum of Understanding (MOU) with MDOR is part of Attachment 3.

Enforcement of the requirement that vehicles receive a registration renewal biennially is handled by state and local police agencies. If a vehicle owner is cited (ticketed) for an expired registration the owner is assessed a fine, which ranges from \$20 to \$60. Specific fines vary depending on the county the citation was issued in. A separate fine, which ranges from \$20 to \$60, is assessed in the covered counties for failure to display a valid inspection sticker.

3. All remaining I/M program enforcement actions are the responsibility of MDNR. State law provides that any person who violates a requirement of sections 643.300 to 643.355 or a rule promulgated to enforce sections 643.300 to 643.355 shall be guilty of either an infraction for the first offense, a class C misdemeanor for the second offense, or a class B misdemeanor for any subsequent offenses (subsections 1-6 of section 643.355, RSMo). State law also provides that any person who violates any procedural requirement of sections 643.300 to 643.355 shall be subject to a fine of not less than five times the amount of the fee charged pursuant to section 643.350 or one hundred dollars, whichever is greater (subsection 7 of section 643.355, RSMo).
4. The State of Missouri maintains the level of motorist enforcement necessary to ensure a compliance rate of no less than ninety-six percent (96%) of subject vehicles. This compliance rate is the standard that the state has used in its two previous I/M programs and was used as an input for the MOBILE6 modeling in Attachment 6. A ninety-six percent (96%) rate has been determined to be the most realistic rate for the state. The strategies described above and in Section G will ensure that the enforcement levels improve sufficiently to meet this compliance target. If it is determined as part of the required program evaluation that the I/M program is not meeting the compliance rate committed to, measures will be taken to improve compliance. MDNR uses the I/M program host computer to make a routine comparison between the testing database and the registration database to determine how many vehicles have evaded the emissions test requirement by renewing vehicle registration without receiving a certificate of compliance or waiver. MDNR uses parking lot surveys or roadside pullovers, by cooperating with state and local police agencies, to assess the compliance status of the in-use fleet. MDNR may develop a system to directly cross check the addresses claimed on the driver's license and the vehicle registration to identify illegally unregistered vehicles operating in the I/M area. If non-compliance is found to be significant with this crosscheck, emission reduction credit losses will be addressed.
5. As part of its basic I/M program, the state has elected to require 1997 and newer model year light-duty diesel trucks weighing 8,500 pounds, or less, to undergo emissions testing.

L. Motorist Compliance Enforcement Program Oversight

Upon receipt of documentation of a vehicle passing the emission inspection or being waived, a motorist may present the VIR to the state license office for registration or registration renewal or rely upon the electronic notification by STI to MDOR for such verification.

License offices are operated under contract to the state and are called “fee” offices. The state agency that oversees the contracted license fee offices is the MDOR. MDOR has more than one hundred fifty (150) contracted fee offices. The sample contract in Attachment 12 is from St. Louis County and contains standardized text. Fee offices must adhere to all state guidance and rules per contract with the state. Included in Attachment 12 is the guidance document that all branch and fee offices receive regarding registering vehicles subject to the emission inspection requirement. The MDOR contract with the license offices contains procedures that serve to minimize unauthorized activities at the offices and can eventually lead to the termination of contracts.

The MDNR has a MOU with MDOR. The MOU stipulates that fee office employees will verify I/M documents (VIR) or access the STI’s database for confirmation before issuing renewals. If clerks suspect fraud, no registration or renewal is issued and the offices notify the department. Per statute and MOU with the department, MDOR and/or the Highway Patrol will investigate suspicion of counterfeit documents. The MDOR and/or the Highway Patrol will confiscate suspect documents when possible and apply penalties or bring suit against persons involved in falsification of these I/M documents.

State employees involved in oversight of document handling, or those that handle documents themselves are employed by MDNR. These employees are subject to standard state or department disciplinary actions for deviation from established requirements. These actions may include notation of deviations in performance appraisals. Less than satisfactory performance appraisals can lead to blockage of promotions, withholding of salary increases or withholding of salary, and eventually can lead to termination.

Contractor employees that deviate from standard requirements are also subject to appropriate penalties. These include requirements to retrain and withhold salary and benefits, and can also ultimately lead to termination.

1. The legal authority for the implementation of the I/M program is included in Attachment 1. This legislation includes the authority necessary to develop and implement the enforcement program oversight element of the I/M program. The procedures establishing specific operation of this aspect of the program are contained in Attachment 9, part e).
2. The MDNR enforcement program is based upon data analysis of the registration and inspection databases to determine how many subject vehicles pass the inspection, are junked, are re-registered in outlying counties, or otherwise disappear from the program. A follow-up survey of exempt vehicles and registration changes triggering an exemption are conducted. Data analysis is also used to confirm that registration renewals are being properly issued at the license offices. Cross checking of the two (2) databases is used to identify any vehicles, which, by any means, obtain registration without complying with

the inspection requirement, and to otherwise assess program effectiveness. The data gathered from these procedures is used as a supplement to the biennial program evaluation. If this data does not indicate a compliance rate of ninety six percent (96%), then contingencies for greater compliance enforcement are presented as part of the report.

3. The Procedures and Specifications Manual followed by personnel involved in enforcing and overseeing the I/M program is included in Attachment 9. This manual details the procedures followed by MDNR and other State personnel and supervisory personnel involved in I/M program enforcement, document handling and processing.

Per the MOU, the Missouri State Highway Patrol (MSHP) performs investigations of fraud and document counterfeiting upon request from MDNR. MDNR employs environmental specialists as part of the emissions inspection enforcement program to conduct audits, report compliance and initiate enforcement actions. In addition, the affected motorists are required to present the MDOR fee offices with current emissions inspection certificates of compliance (VIR) or electronic verification from STI's database, when applying for a registration renewal, transfer, or issuance. Counterfeit certificates will most likely surface at the MDOR fee offices. Per the MOU, MDOR personnel copy suspected counterfeit or illegal certificates turn over the suspected documents to the department and deny the motorist their registration. This is followed by investigations conducted by MDNR and MSHP personnel.

4. The State of Missouri encourages the EPA to conduct periodic audits of the State's I/M enforcement program.

M. Quality Assurance

The contractor must assure the quality of the program per contract requirements. This assurance is accomplished by auditing requirements for equipment, auditing of performance, and auditing of records. The contract requires several reports on test equipment and test performance on weekly, monthly, quarterly and annual schedules.

State staff oversees and approve the reports described above. State staff also conduct audits of stations at routine intervals, at least annually per each emissions inspection station. State staff conduct overt audits of lane equipment and procedures.

State staff conduct covert audits. These audits are done using state owned vehicles. The state vehicles used are unmarked, and have plain license plates (not official state vehicle plates). These vehicles are of various makes and a variety of model years. These vehicles are presented to the emission test stations, covertly, for an inspection. Station compliance with state rules and contract terms are observed and noted. This includes, but not limited to, notation of properly failing or passing the covert vehicles, notation of equipment accuracy, observance of inspector and station management actions and behavior, notation of receipt of proper documentation of the test and any informational materials required by rule or contract.

Improper procedures may violate state statute and rules. If violations only pertain to state law, enforcement actions and remedies will be those authorized under sections 643.300 – 643.355 or 307.366 RSMo.

1. The legal authority for the implementation of the I/M program is included in Attachment 1. This legislation includes the authority necessary to develop and implement the quality assurance element of the I/M program. The rules governing specific operation of this aspect of the program are contained in Attachment 2.
2. Quality assurance procedures used by program auditors are included in Attachment 9, part f. Separate procedures are established for conducting overt and covert audits, which include sufficient record keeping requirements to support the imposition of enforcement actions based upon audit findings. All auditors are required to complete formal training.
3. The program will conduct at least two (2) overt audits per year, per licensed emissions inspection station. Additional overt activity including activity aimed at suspected problem sites are conducted at MDNR's discretion. Overt audits include a check of document security, record keeping practices, licenses and required display information, observation and written evaluation of each inspector's ability to perform the test procedure, and a quality control evaluation of test equipment. Test records reviewed electronically and by station to flag statistically inconsistent or improbable results occurring either at individual stations or network-wide.
4. The program will conduct at least one (1) covert audit per year, for each I/M licensed emissions station. Additional covert activity including activity aimed at suspected problem sites are conducted at MDNR's discretion. Covert vehicles are sometimes set to fail various aspects of the inspection so as to reflect the full range of technology and malfunction types, based upon procedures established in the Procedures and Specifications Manual in Attachment 9. The identity of covert vehicles is concealed from the emissions station inspector by manipulating the vehicle inspection database (VID) maintained by STI.
5. Program auditor training is conducted by I/M professional trainers or state audit supervisors. Training of new auditing staff shall consist of at least forty (40) hours of combined training including classroom training, inspection training, repair bay training, and on-the-job field training under the direct supervision of at least one (1) audit supervisor. Classroom training emphasizes administrative and enforcement procedures detailed in the auditor manual. Inspection station and repair bay training emphasizes, covert vehicle repair, and emissions system repair. On-the-job training includes overt and covert auditing fieldwork activities. All program auditors themselves are audited at least once per year by MDNR supervisory personnel.

N. Enforcement Against Contractors, Stations, and Inspectors

Since the I/M program is decentralized, enforcement against the licensed emissions station is done through provisions of the individual emissions station license issued by the MSHP. Most violations for improper testing, improper operation of the program, and other key criteria result

in station license suspension or revocation. The MSHP's license suspension and revocation authority contained in 643.320 RSMo (Attachment 1) allows for incremental periods of license suspension from thirty to one hundred eighty days, while revocation is for one year. Persons violating the requirements of the Gateway Vehicle Inspection Program are subject to the misdemeanor penalties described in 643.355 RSMo (Attachment 1) and subparagraph 10 CSR 10-5.381 (3)(N) (Attachment 2A).

10 CSR 10-5381 paragraph (3)(N)4. allows the MSHP and the MDNR to electronically lockout an inspector, station, or equipment if MDNR or MSHP identify any irregularities within the emissions inspection database or during overt or covert audits. Enforcement action against the vendor consist of either claims against their Performance Bond or a declaration of breach of contract resulting in contract termination.

MDNR enforcement personnel investigate violations of the I/M rules and statutes. In addition to the enforcement provisions of the statutes, legal authority to enforce the provisions of the I/M program is provided by the Missouri Air Conservation Law. As such, descriptions of administrative and judicial procedures and responsibilities are addressed in the Air Law.

O. Data Collection

1. The specifications in the contract between MDNR and STI provide data collection requirements and record storage format. The information contained within each vehicle test report is such that it is possible to unambiguously tie specific test results to a specific vehicle, test site, and inspector.
2. The State of Missouri gathers, maintains, summarizes, and reports the results of all inspections, quality control checks performed on testing equipment and I/M documents to the EPA on an annual basis as described in Section Q below.

P. Data Analysis and Reporting

The contract requires data reports for: 1) annual test data annually for the previous calendar year due by July, 2) annual quality assurance for the previous calendar year due by July, 3) annual quality control data for the previous calendar year due by July, 4) annual enforcement for the previous calendar year due by July, 5) biennial report with: a.) changes to the program and b.) weaknesses in the program for the previous two calendar years, due by July. Report descriptions are in RFP section 2.14.15. Because the emission I/M program started on September 4, 2007, the first annual reports are due every July 15. Subsequent biennial reports are due every other July 15.

The state analyzes the reports for compliance with state law and contract requirements. State staff also analyzes the data for program effectiveness in reducing emissions from vehicles and adherence to consumer convenience requirements.

1. Beginning with the first full or partial I/M program calendar year and annually thereafter the State of Missouri will report to the EPA summary data based upon program activities taking place from January 1 through December 31 of the previous calendar year. This report provides statistics for the testing program, the quality control program, the quality

assurance program, and the enforcement program. The State will address all of the data elements listed in 40 CFR 51.366.

2. Beginning after the first full or partial I/M program calendar year and biennially thereafter the State of Missouri will report to the EPA on all changes made in the program design, funding, personnel levels, procedures, regulations, and legal authority, and shall supply a detailed discussion of the impact of such changes upon the program. This report shall also detail and discuss any weaknesses or problems discovered in the program over the previous two (2) year period, as well as the steps that were taken to address the problems, the result of corrective actions, and any future efforts planned.

Q. Inspector Training and Repair Mechanic Training

Inspectors are employees of the decentralized licensed emissions inspection stations. The contract at RFP 2.21.5 and 2.21.6 requires inspectors to be trained in the test procedures and Missouri requirements by the contractor. The contract at RFP 2.21.5 requires plans for the training.

Repairs to vehicles that fail the I/M inspections may be done offsite by the owner, by any repair technician, or by a “recognized qualified repair technician.” Only the labor cost of recognized qualified repair technicians count toward the qualifying waiver expenditure. Recognized repair technicians are defined by state rule 10 CSR 10-5.381. Qualified repair technicians are defined by state rule 10 CSR 10-5.381(2)(W). These technicians are employees of independent businesses, not associated with either the state or the I/M contractor. Training is paid by the technician or his employer and is offered by independent schools or training providers. The department sets criteria and approves courses to meet the requirements of rule definition of recognized repair technicians.

1. The contractor conducts inspector training and certification examinations. The department approves both the inspector training courses and the exam. Inspectors must be re-examined every three (3) years. Inspectors must receive greater than 80 percent (80%) on the exam to conduct inspections. The curricula includes, but is not limited to:
 - a. General I/M program orientation
 - i. Missouri I/M history
 - ii. Purpose and goal of I/M
 - iii. Contribution of the automobile to air pollution
 - iv. Missouri regulations and laws
 - v. Vehicle emissions and standards
 - b. Station operations and procedures
 - i. State of Missouri I/M staff organization
 - ii. The contractor’s staff organization
 - iii. I/M inspection network
 - iv. I/M inspection station organization
 - v. Lane overview
 - vi. Equipment overview
 - vii. Customer service, safety, complaint handling, and public relations

viii. Security of the inspection station

2. Only MDNR staff may issue waivers.
3. MDNR monitors inspector training. A quality assurance officer on a biennial basis evaluates inspector competence.
4. MDNR worked with community colleges and vocational schools and private training providers in order to ensure adequate repair technician training opportunities existed prior to the beginning of basic I/M testing. MDNR promotes, coordinates, monitors, and evaluates the training program for emission repair technicians. Local community colleges and vocational schools provide the setting for repair technician training. MDNR recommends repair technicians meet recognized repair technician requirements included in the rule (Attachment 2).
5. State recognized repair technicians are defined by state rule 10 CSR 10-5.381(2)(W). A recognized repair technician is any person who:
 - a. Is professionally engaged full-time in vehicle repair or employed by an ongoing business whose purpose is vehicle repair. A Recognized Repair Technician may only be recognized by the department at one place of employment.
 - b. Has valid certifications in National Institute for Automotive Service Excellence (ASE) in Electrical Systems (A6), Engine Performance (A8), and Advanced Engine Performance Specialist (L1) that have not expired.
 - c. Has not been reported by MDNR to the attorney general for unlawful merchandizing practices.

R. Public Information and Consumer Protection

The State of Missouri conducts an ongoing public information and consumer protection plan. MDNR works closely with the I/M community to ensure the public is informed on an ongoing basis of I/M related issues. The MDNR is responsible for developing the public information campaign MDNR follows-up and responds to complaints made by the public and others in the community.

Customers may challenge the results of their inspection or report inspector fraud to MDNR or the MSHP. The customer may bring their motor vehicle to the MDNR to have their vehicle re-inspected. The customer will also be given a phone number and form to issue complaints of fraud to MDNR.

Motorists whose vehicles fail are given information on vehicle manufacturers' warranties, if applicable, by the contractor. Since the St. Louis area I/M program is an official local emissions inspection program, recognized by the federal government, vehicle manufacturers' dealerships must honor warranties based on performance. If a vehicle is within federally set mileage and age limits and the vehicle fails the St. Louis area I/M inspection, warranties must be honored or a written explanation for refusing to honor a warranty must be given.

S. Improving Repair Effectiveness

As described above, repair technician training is required for state recognized repair technicians. Such training is not provided by the state. Non-profit and for-profit schools and independent trainers provide this training. The department reviews and approves courses per rule definition of recognized repair technician. The department sets criteria for course curricula and an adequate amount of class hours to adequately cover the curricula topics. Curricula include, but are not limited to, the basics of air pollutant formation, training on consequences of emissions from vehicles, overview of federal air quality requirements, review of Missouri I/M statutes and rules, overview of the contractor requirements for vehicle testing, study of the test procedure, introduction to diagnosis of the causes of emission test failures, requirements and responsibilities of being a state recognized repair technician.

Non-profit schools in the St. Louis area include post-high school technical schools and community colleges that offer automotive repair courses for in-service technicians. St. Louis also has at least one (1) for-profit college that offers night courses for in-service technicians. Independent trainers are located in St. Louis or may come from other states to provide training. These include companies that only provide training and textbooks or training materials, companies that also provide repair parts and sales, and companies that also provide repair tools or diagnostic equipment.

1. The State of Missouri meets the technical assistance requirements of 40 CFR Section 51.369(a). MDNR provides the repair industry with information and assistance related to vehicle inspection diagnosis and repair.
2. The repair effectiveness performance of repair facilities is tracked. The State of Missouri provides the information listed in 40 CFR Section 51.369(b) or alternative information conveying similar information on the ability of repair facilities to provide effective and convenient repair to the public at the time of initial failure. The contractor is required to provide this repair facility effectiveness information, which is tracked by computer compilation of data from completed repair forms, to the motorist. A completed repair form is required as a prerequisite for reinspections and waiver applications.

T. Compliance with Recall Notices

The basic I/M rule, included in Attachment 2, requires vehicle owners in the basic I/M area to comply with recall notices in order to pass the emissions inspection. Vehicle owners who have obtained recall repairs but remain on the unresolved recall list can complete the inspection process, if they present a recall repair completion form from the dealership to the inspectors at the licensed emission test stations.

Contract requirements for outstanding recall checks and requirements for the contractor to maintain a recall database are at RFP 2.14.2.

The State of Missouri has submitted the annual report required by 40 CFR Section 51.370(c).

U. State Implementation Plan Submissions

The following is a schedule implementing the basic I/M program in the St. Louis ozone nonattainment area:

- | | | |
|-----|--|---------------|
| 1. | Passage of legal authority | May 04, 2006 |
| 2. | Signature of Governor | Jun. 30, 2006 |
| 3. | Adoption of I/M rule by MACC | Apr. 26, 2007 |
| 4. | Issuance of RFP | Dec. 14, 2006 |
| 5. | Bid conference | Jan. 04, 2007 |
| 6. | RFP bids due | Feb. 15, 2007 |
| 7. | Contract awarded | May 29, 2007 |
| 8. | Complete inspector/mechanic training | Sep. 29, 2007 |
| 9. | Start of Decentralized I/M program testing | Oct. 01, 2007 |
| 10. | 2007 annual reports | Jun. 15, 2008 |
| 11. | 2007-2008 biennial reports | Jun. 15, 2009 |

List of Attachments

Attachment 1	State of Missouri Authority
Attachment 2A	State of Missouri Inspection/Maintenance Rules
Attachment 2B	State of Missouri State Highway Patrol Motor Vehicle Safety Inspection Rules
Attachment 3	Memorandum of Understanding
Attachment 4	Inspection/Maintenance Contract with SysTech International
Attachment 5	State of Missouri Inspection/Maintenance Budget: Fiscal Year 2008 (Section 6.285)
Attachment 6	MOBILE6 Inputs
Attachment 7	MOBILE6 Sample Calculations
Attachment 8A	Number of Vehicles in the Inspection/Maintenance Program
Attachment 8B	Number of Exempt Vehicles in the Inspection/Maintenance Program
Attachment 8C	Number of Private & Local Government Fleets in the Inspection/Maintenance Program
Attachment 9	Procedures and Specifications
Attachment 10	ZIP Code Listing Covering the Inspection/Maintenance Program
Attachment 11	Public Education Plan
Attachment 12	Missouri Department of Revenue's Contract with Fee Offices