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**INSPECTION/MAINTENANCE  
LIST OF APPENDICES**

APPENDIX #	APPENDIX NAME
A	<i>Federal Register</i> Part VII, U.S. Environmental Protection Agency, 40 CFR Part 51, Inspection/Maintenance Program Requirements; Final Rule, dated November 5, 1992 and Flexibility Amendments, dated September 18, 1995. (No change)
B	Texas Health and Safety Code, Subtitle C, Air Quality, Revised September 1, 1997. <b>(Revised)</b>
C	Senate Bill 1856 by 75th Legislature amendment to the Texas Health and Safety Code §382.037. Section 382.037, Health and Safety Code is amended by adding §§382.0372-382.0375 and amending §382.037(d). Sections 382.0371 and 382.037 (a-1) Health and Safety Code, are repealed. <b>(Revised)</b>
D	TNRCC Regulation IV, (30 TAC Chapter 114), Control of Air Pollution From Motor Vehicles, Adopted November 5, 1997. <b>(Revised)</b>
E	TNRCC Appropriations for Fiscal Years 2000 and 2001. Texas Department of Public Safety, Appropriations for Fiscal Years 2000 and 2001. STATE OF TEXAS, Text of Conference Committee Report, House Bill No. 1 (General Appropriations Act). 76 <sup>th</sup> Legislature, Regular Session. <b>(Revised)</b>
F	TNRCC, "Request For Offer for the Design, Construction, and Operation of the Texas Data Link Project for the State of Texas," dated December 20, 1995. (RFO) (No change)
G	TNRCC, "Specifications For Preconditioned Two-Speed Idle Vehicle Gas Analyzer Systems for use in the Texas Vehicle Emissions Testing Program," dated November 1, 1999. <b>(Revised)</b>
H	Texas Transportation Code §547.604, §547.605, and Chapter 548 Compulsory Inspection of Vehicles. (No change)
I	Rules and Regulations for Official Vehicle Inspection Stations and Certified Inspectors. Texas Department of Public Safety, dated April 24, 1998. <b>(New)</b>
J	HK Consulting & Design, Inc., "Vehicle Safety Inspection Compliance Survey" for Dallas and Tarrant Counties, dated January 1996. <b>(Revised)</b>
K	TNRCC, "Specifications For Accelerated Simulation Mode (ASM-2) Test Procedures for use in the Texas Vehicle Emissions Testing Program," dated November 1, 1999 <b>(New)</b>

L

TNRCC and Texas Department of Public Safety "Memorandum of Understanding,"  
dated January 22, 1997. (New)

## COMMONLY USED TERMS

### **Acceleration Simulated Mode (ASM-2) Test**

An emissions test using a dynamometer (a set of rollers on which a test vehicle's tires rest) which applies an increasing load or resistance to the drive-train of a vehicle, thereby simulating actual tailpipe emissions of a vehicle as it is moving and accelerating. The ASM-2 vehicle emissions test is comprised of two phases: (1) the 50/15 mode - in which the vehicle is tested on the dynamometer simulating the use of 50% of the vehicle's available horsepower to accelerate at a rate of 3.3 miles per hour (mph) at a constant speed of 15 mph, and, (2) the 25/25 mode - in which the vehicle is tested on the dynamometer simulating the use of 25% of the vehicle's available horsepower to accelerate at a rate 3.3 mph at a constant speed of 25 mph.

### **Dallas/Forth Worth (DFW) program area**

County or counties in which the Texas DPS, in coordination with the commission, administers the vehicle emissions I/M program contained in the revised Texas I/M SIP. This program area consists of the following counties: Dallas, Denton, Collin, and Tarrant, and, beginning January 1, 2001, Parker, Hood, Johnson, Ellis, Henderson, Kaufman, Rockwall, and Hunt.

### **El Paso Program area**

County or counties in which the Texas DPS, in coordination with the commission, administers the vehicle emissions inspection and maintenance program contained in the revised Texas I/M SIP. This program area consists of the following county: El Paso.

### **Emissions tune-up**

A basic tune-up along with functional checks and any necessary replacement or repair of emissions control components.

### **Exhaust Gas Analyzer**

A device used to measure the amount of emission gases in an exhaust sample.

### **Fleet Vehicle**

Any motor vehicle operated as a member of a group of motor vehicles belonging to a single non-household entity; any state or local government motor vehicle, including a motor vehicle exempted from payment of a registration fee and issued a specially designated license plate; or any federal government motor vehicle, except for a tactical military vehicle.

### **FTE**

Full Time Equivalent Employee. When used within this SIP, an FTE is calculated by adding the time each inspector spends on vehicle inspections, and dividing by 52 weeks per year. For example, if a station employed 20 individuals, but each employee only worked on vehicle inspections two weeks worth of time per year, this station employed 1 FTE.

### **Gas Cap Integrity Test**

A fuel cap test that determines whether or not the vehicle's gas cap or caps are functioning as designed.

### **High Emitter**

A vehicle whose measured tailpipe emissions levels exceed recommended testing standards.



**Houston/Galveston (HGA) Program area**

County or counties in which the Texas DPS, in coordination with the commission, administers the vehicle emissions inspection and maintenance program contained in the revised Texas I/M SIP. This program area consists of the following counties: Brazoria, Chambers, Harris, Fort Bend, Galveston, Liberty, Montgomery, and Waller.

**I/M Program**

A vehicle emission inspection program as defined by EPA that includes, but is not limited to, the use of computerized emission analyzers, on-road testing, on-board diagnostic testing, and/or inspection of vehicle emission devices.

**I/M Program Areas**

County or counties in which the Texas DPS, in coordination with the commission, administers the vehicle emissions inspection and maintenance program contained in the revised Texas I/M SIP.

**On-Board Diagnostics (OBD)**

The computer system installed in a vehicle by the manufacturer which monitors the performance of the vehicle's emission control equipment, fuel metering system for the purpose of detecting malfunction or deterioration in performance that would be expected to cause the vehicle not to meet emissions standards.

**TX96**

Testing equipment meeting specifications for "Preconditioned Two-Speed Idle Vehicle Exhaust Gas Analyzer System" for use in the Texas Vehicle Emission Testing Program.

**Two-Speed Idle Test**

A measurement of the tailpipe exhaust emissions of a vehicle while the vehicle idles, first at a lower speed and then again at a higher speed.

**TxDOT**

Texas Department of Transportation

**Vehicle Emission Inspection Station**

A facility certified to conduct an emissions inspection for a vehicle and issue a certificate of emissions inspection.

**Vehicle Identification Database (VID)**

A database management system which maintains specified vehicle data and emissions testing information.

**Vehicle Inspection Report (VIR)**

The printout created after an emission test which displays tests results, vehicle information, and pass/fail status.

**Vehicle Repair Form (VRF)**

A printout that will include a description of those emissions repairs which were recommended and those which were actually performed. The VRF will be the primary document used by any motorist seeking a waiver.

## CHAPTER 1: GENERAL

### 1.1 BACKGROUND

The I/M program will reduce hydrocarbon emissions, which include VOCs, that react with NO<sub>x</sub> to form ground level ozone. Ground level ozone is an irritant to the lungs and especially impacts children, older citizens, and others that may have decreased lung capacity. Some HC emissions include VOCs such as benzene, formaldehyde, and 1,3-butadiene, which are air toxins. They may cause cancer and have other adverse health effects.

The I/M program will reduce CO emissions which interfere with the oxygen-carrying capacity of the blood. Exposure aggravates angina and other aspects of coronary heart disease and decreases exercise tolerance in persons with cardiovascular problems. Infants, fetuses, elderly persons, and individuals with respiratory diseases are also particularly susceptible to CO poisoning.

The I/M program will reduce emissions of NO<sub>x</sub>, including nitrogen dioxide and nitrous oxide, which irritates the lungs, lowers resistance to respiratory infections, and contributes to the development of emphysema, bronchitis, and pneumonia. NO<sub>x</sub> contributes to ozone formation (ground level) and visibility degradation and can also react chemically in the air to form nitric acid. NO<sub>x</sub> reductions may be achieved through ASM-2 and OBD, in affected areas of the state.

Texas implemented a vehicle emissions testing program on January 1, 1995, which met requirements contained in the EPA's final rule for I/M programs. Senate Bill 178, passed by the 74<sup>th</sup> Texas Legislature, canceled the testing program, reinstated the previous testing program, and authorized the renegotiation of a new vehicle emission testing program that would be more convenient and less costly. During this time, EPA finalized the I/M Flexibility Amendments November 28, 1995, providing for an additional third standard, the low-enhanced standard. States were allowed flexibility in designing a program that would meet one of the three program standards: a basic, low-enhanced, or high-enhanced performance standard. The rule also allowed areas with an urbanized area of less than 200,000 people to opt-out of the vehicle emissions testing program if the area could meet other Clean Air Act requirements. The rule also allowed states to authorize low-income time extensions more than once in the life of a vehicle. Some emissions related repairs performed 60 days or less, prior to an initial emissions test failure, could be allowed in calculating costs for minimum expenditure waivers.

## 1.2 PUBLIC HEARINGS INFORMATION

The commission will hold public hearings at the following times and locations:

CITY	DATE	TIME	LOCATION
El Paso	January 24, 2000	2:00 p.m.	City of El Paso Council Chambers 2 Civic Center Plaza, 2nd floor
Austin	January 25, 2000	10:00 a.m.	TNRCC 12100 N. I-35, Building E, Room 201S
Longview	January 26, 2000	10:00 a.m.	Longview City Hall Council Chambers 300 West Cotton Street
Irving	January 26, 2000	7:00 p.m.	City of Irving Central Library Auditorium 801 West Irving Blvd.
Dallas	January 27, 2000	10:00 a.m.	Dallas Public Library Auditorium 1515 Young Street
Lewisville	January 27, 2000	7:00 p.m.	Lewisville City Council Chambers Municipal Center
Fort Worth	January 28, 2000	10:00 a.m.	Council Chambers, 2 <sup>nd</sup> Floor Fort Worth City Hall 1000 Throckmorton
Beaumont	January 31, 2000	1:30 p.m.	John Gray Institute 855 Florida Avenue
Houston	January 31, 2000	7:00 p.m.	Houston-Galveston Area Council 3555 Timmons Lane

The hearings are structured for the receipt of oral or written comments by interested persons. Individuals may present oral statements when called upon in order of registration. Open discussion will not be permitted during the hearings; however, agency staff members will be available to discuss the proposal 30 minutes prior to each hearing and will answer questions before and after the hearings.

Written comments will also be accepted via mail or fax. All comments should be submitted to Lola Brown, Office of Environmental Policy, Analysis, and Assessment, P.O. Box 13087, MC 205, Austin, Texas 78711-3087 or fax number (512) 239-4808. The public comment period will close on February 1, 2000.

## 1.3 SOCIAL AND ECONOMIC CONSIDERATIONS

For a detailed explanation of the social and economic issues involved please refer to the preamble that precedes the rule package accompanying this SIP.

#### **1.4 FISCAL AND MANPOWER RESOURCES**

The state has determined that its fiscal and manpower resources are adequate and will not be adversely affected through implementation of this plan.

## CHAPTER 2: APPLICABILITY

The legal authority for the commission and the DPS to implement the I/M program is granted by the Texas Health & Safety Code, §§382.037-038, and Transportation Codes, §§502 and 548. This authority is not limited by sunset provisions.

The FCAA and 40 CFR Part 51, as amended, require an “enhanced” vehicle emissions testing program in areas that are defined as a serious or worse ozone nonattainment area, or as a moderate or serious CO nonattainment area. The HGA area is severe ozone nonattainment, the DFW area is serious ozone nonattainment, and the El Paso area is serious ozone and moderate CO nonattainment. EPA's revised rule allows areas that can meet the reasonable further progress requirements with a less stringent I/M program to develop a program that is more responsive to motorist's concerns. The state has elected to implement a low enhanced I/M program in each area that will meet or exceed EPA's low enhanced performance standard. EPA's low enhanced performance standard consists of an annual centralized or decentralized two-speed idle test, and visual inspection of emission control devices for all subject light duty vehicles and trucks up to 8500 GVWR. Additional credit may be given for ASM-2 testing, OBD testing, remote sensing, and technician training and certification program. OBD testing, which is required by FCAA §§182(c)(3)(vii) and 202(m)(3), in addition to 40 CFR Parts 51 and 85, will begin January 1, 2001 in all affected areas.

Dallas, Tarrant, Harris, and El Paso Counties will continue to utilize the current two-speed idle test until December 31, 2000. Beginning January 1, 2001, Harris and El Paso Counties will incorporate OBD testing into the current two-speed idle program, while Dallas and Tarrant Counties, along with Collin, Denton, Ellis, Henderson, Hood, Hunt, Johnson, Kaufman, Parker, and Rockwall Counties, will transition to ASM-2 and OBD testing. Program expansion is essential for reduction of NO<sub>x</sub> emissions to be able to demonstrate attainment with the NAAQS for ozone. These additional eight counties surrounding the DFW nonattainment area are expected to voluntarily opt into the I/M program in accordance with Texas Health and Safety Code §382.037(c) and Texas Transportation Code §548.301(b).

The HGA program area consists of Harris, Galveston, Montgomery, Chambers, Liberty, Waller, Fort Bend, and Brazoria Counties. The urbanized area extends into other counties surrounding Harris County. The 1990 census indicates that the urbanized area population subject to the vehicle emissions testing program is approximately 83,652 more than the total population of Harris County. Research indicates that a vehicle is owned by approximately 77.34% of the total surrounding county population. Using this methodology, the exclusion of Galveston, Montgomery, Chambers, Liberty, Waller, Fort Bend, and Brazoria Counties from the scheduled testing requirements of the I/M program results in a shortage of approximately 64,692 vehicles. The state commits to capturing the vehicle shortage by placement of remote sensing devices in appropriate locations. Vehicles commuting into Harris County are subject to a remote sensing test, and if the vehicle fails the screening criteria, it is subject to an emissions test at a designated facility. More information on the remote sensing element of the Texas I/M program can be found in Chapter 21 of this document.

The BPA is a moderate ozone nonattainment area with an urbanized population of less than 200,000. EPA's I/M flexibility amendments dated September 16, 1995 allow areas with an urbanized population of less than 200,000 to demonstrate a plan to reduce air pollution without utilizing a vehicles emissions testing program. The BPA area meets this criteria, therefore, no vehicle emissions testing program is required.

### **CHAPTER 3: I/M PERFORMANCE STANDARDS**

The current two-speed idle testing program that the commission and DPS have implemented in Harris, Dallas, Tarrant, and El Paso Counties and the proposed ASM-2 testing program for the DFW program area (beginning January 1, 2001) meet or exceed the minimum performance standard required by 40 CFR 51. EPA's MOBILE5a\_H model has been used to produce the emissions factors for the EPA low enhanced performance standards and the emissions factors for the area's I/M program commitment for each pollutant and applicable evaluation year.

Outputs are described in grams per mile (g/mi) reductions, and are tabulated by program areas at the end of this document in the TECHNICAL SUPPLEMENT. Modeling runs are contained in Attachment A.

As required by 40 CFR 51.35(d), the vehicle emissions inspection program has been designed to offset NO<sub>x</sub> increases resulting from the repair of HC or CO failures in counties implementing a two-speed idle test. DPS will audit repair data to determine any potential increases in NO<sub>x</sub> emissions as a result of repairing failed vehicles.

## **CHAPTER 4: NETWORK TYPE AND PROGRAM EVALUATION**

### **4.1 NETWORK TYPE**

The State of Texas has implemented a decentralized I/M network in Dallas, Tarrant, Harris and El Paso Counties. Beginning January 1, 2001 this I/M testing area will be expanded to include Collin, Denton, Parker, Hood, Johnson, Ellis, Henderson, Kaufman, Rockwall, and Hunt Counties. The decentralized network allows motorists a choice of test and repair or test-only facilities that offer the required emissions and gas cap integrity test. Test-only facilities may offer other services for the convenience of their customers, such as, but not limited to, oil changes, self serve gasoline, and any other items that are not related to automotive parts, sales, and/or service. Test and repair facilities may offer a wide range of repairs and services for the convenience of their customers. This allows motorists a choice of testing facilities offering a variety of services with no difference in test fees based on facility type. In addition, the commission has implemented a centralized on-line data communications system that assists in monitoring test results by facility type and allows the ability for extensive data analysis.

On February 8, 1999, the commission submitted the Short Term Program Effectiveness - 18-Month Evaluation of The Texas Vehicle Emissions Testing Program that demonstrated the state's decentralized test only/test-and-repair network is comparable to a centralized test only network. On August 20, 1999, EPA published Additional Flexibility Amendments to Vehicle Inspection Maintenance Program Requirements; Proposed Amendment to the Final Rule. In this proposed rule, §51.353(b), the automatic effectiveness credit discount for decentralized test-and-repair networks was deleted. For these reasons, the state has modeled the I/M program with the assumption of a "centralized network" so that the automatic discount would not be applied by the model and 100% effectiveness credit would be given.

### **4.2 PROGRAM EVALUATION**

The commission has instituted an ongoing evaluation of the I/M program consistent with EPA requirements to quantify the emissions reduction benefits for the Texas I/M Program. The commission commits to reporting the results of the evaluation to EPA on a biennial basis. The evaluation will consist of:

- (1) Surveys that assess the effectiveness of repairs performed on vehicles that failed the emissions and the gas cap integrity test;
- (2) Measurement of tampering rates, their change over time, and the change attributable to finding and fixing such tampering as opposed to deterrence effects; and
- (3) Results of covert surveys of inspector effectiveness as it relates to identifying vehicles that need repair.

Mass Emissions Transient Testing (METT) is the method for evaluating enhanced I/M programs prescribed by EPA. The method uses transient testing, or loaded-mode testing on a dynamometer, to simulate actual driving conditions, and expresses emissions using a mass-based measurement, grams. To meet METT requirements, the state will test and evaluate a random sample of in-fleet vehicles following FCAA requirements for I/M program evaluations as amended by EPA on January 8, 1998 (40 CFR parts 51 and 52, Minor Amendments to Inspection Maintenance Program Evaluation Requirements; Amendment to the Final Rule) and EPA guidance issued October 30, 1998 (Guidance on Alternative I/M Program Evaluation Methods). That sample will be required to receive a DPS-administered or monitored emissions and gas cap integrity test. Such vehicles will receive a state administered or monitored IM240 mass emissions test or comparable test at the time the initial test is due as required in 40 CFR 51.353(c)(3).

The special testing will take place at the time the vehicle is scheduled to have an initial inspection, prior to any repair. The commission will then evaluate the data by model year and vehicle type to determine program effectiveness. A contractor(s) may be utilized to assist in collecting, reviewing, or evaluating program data.

The inspection data that is collected will be submitted to EPA and used by the commission to calculate local fleet emissions factors, to assess the effectiveness of the I/M program, and to determine if the performance standard is being met.

## CHAPTER 5: ADEQUATE TOOLS AND RESOURCES

The I/M program will maintain adequate funding. The commission chapter of House Bill No. 1 (General Appropriations Act, Article VI), passed by the 76<sup>th</sup> Texas Legislature, appropriated the commission and the DPS a portion of all fees collected from vehicle inspection facilities performing automobile emission inspections. Vehicle emissions inspection fees, which are set by the commission and deposited to the credit of the Clean Air Account and the DPS General Revenue Fund in the Texas Treasury pursuant to Section 382.037(e, k), Health and Safety Code, are used for the purpose of supporting the vehicle emissions I/M program. In addition, the Clean Air Account receives other fees, including \$2.00 per vehicle from an automobile safety inspection, dedicated for use of the state air quality program.

Rider 6 in the current General Appropriations Act specifically earmarked funds available to develop, administer, evaluate, and maintain the vehicle emissions I/M program, including federally required reporting measures to demonstrate compliance with applicable federal and state laws.

Until December 31, 2000, \$1.75 of the fee collected for each safety and emission certificate issued by vehicle inspection facilities is available to the commission and DPS. The portion of the fees available to the commission and DPS will be increased to \$2.00 beginning January 1, 2001. Anticipated revenue and budgets for Fiscal Year 2000-2001 for the commission and DPS involvement in the I/M program have been proposed, and are attached as Appendix E. It is anticipated that the budget for future years will be at similar levels. The commission commits to a dedicated staffing level of no less than 11 FTE employees to I/M program design, oversight, and evaluation. The DPS commits to a dedicated staffing level of no less than 52 FTE employees to I/M program implementation, administration, enforcement, and support. The breakdown by agency is as follows:

### **Commission**

Data collection and analysis	3 FTE employees
Performance monitoring/evaluation	1 FTE employees
SIP Amendments, Rulemaking, Program Development	2 FTE employees
Registration Denial and Consumer Assistance	2 FTE employees
Technical Assistance	2 FTE employee
Other administrative and management functions (excluding clerical support)	1.5 FTE employee

### **DPS**

Technician Assistance	4 FTE employees
Overt and covert auditing	31 FTE employees
Consumer assistance	2 FTE employees
Waiver oversight	2 FTE employees
Enforcement	6 FTE employees
Other administrative and management functions (excluding clerical support)	4 FTE employees
Remote Sensing	3 FTE employees

The DPS has access to a wide variety of vehicles for use in covert audits of the vehicle emissions inspection program.

The commission provides oversight of the data collection and analyzes the results to improve program requirements. DPS implemented the remote sensing program October 1998. The commission, DPS and TxDOT will continue to coordinate efforts in support of the re-registration denial enforcement element of the Texas I/M program. TxDOT will continue to provide access to registration data and ensure that required staffing is available to perform tasks associated with re-registration denial.

## **CHAPTER 6: TEST FREQUENCY AND CONVENIENCE**

### **6.1 TEST FREQUENCY**

An annual emissions and gas cap integrity test is required for all subject vehicles as part of the annual safety inspection program. Under this test frequency, modeling runs show that emission targets are achieved. Test frequency implementation is detailed in 30 TAC §114.50.

An initial vehicle emissions and gas cap integrity test will be given to each vehicle presented for inspection and a test fee will be charged to the motorist. If the vehicle passes the inspection, an inspection certificate will be issued. Should the initial vehicle emissions and gas cap integrity test result in a failure, applicable repairs must be completed and annotated on the VRF. The motorist's vehicle may then be reinspected at the same facility for no charge if the reinspection is within 15 days after the initial test was conducted. The motorist may also choose to go to a different facility for reinspection. In this case, the motorist will be charged the full price of an inspection. An inspection certificate will not be issued until the subject vehicle passes a reinspection or meets waiver requirements. If the reinspection occurs more than 15 days after the initial test was conducted, a full inspection will be performed, and a full test fee will be charged to the motorist.

### **6.2 TESTING CONVENIENCE**

The Texas I/M program utilizes existing, local businesses for the performance of emissions testing. More than 2,000 facilities participate in the I/M program. Businesses in I/M program areas that wish to participate in the I/M program must upgrade existing or purchase new equipment certified by the TNRCC. The utilization of local businesses in the Texas I/M Program provides testing convenience for the motorist; motorists in the program areas are able to have emissions and gas cap integrity tests performed on their vehicles at the same facilities that they have been accustomed to utilizing for state safety inspections.

Vehicle inspection stations are required to test any subject vehicle presented for a test during the facility's testing hours. Testing hours must be at least eight hours per day, five days per week, for a minimum of 40 hours per week as discussed in Appendix I. Enforcement of the vehicle inspection program is further discussed in Chapter 12, regarding motorist compliance enforcement.

## CHAPTER 7: VEHICLE COVERAGE

### 7.1 REGISTERED VEHICLES

Currently in Dallas, Tarrant, Harris, and El Paso Counties, the I/M program requires annual testing of all gasoline powered motor vehicles that are two through 24 years old, primarily operated and registered, or required to be registered, in the affected counties, and required by the DPS to comply with vehicle safety inspection requirements. Leased vehicles primarily operated in and registered, or required to be registered in the affected counties, are included in the program and must be scheduled for vehicle testing as a part of the annual safety inspection.. Dual-fueled vehicles capable of operating on gasoline, are also required to be tested as part of the annual safety and emission program. In beginning January 1, 2001 these requirements will extend to include Collin, Denton, Ellis, Henderson, Hood, Hunt, Johnson, Kaufman, Parker, and Rockwall Counties. Military tactical vehicles, motorcycles, diesel-powered vehicles, vehicles less than two years old, or vehicles 25 years old or older, and vehicles registered with TxDOT as antique, are excluded from the program. .

Vehicles subject to I/M testing are identified through the registration database provided to the commission by TxDOT. This database is updated through weekly tapes issued by TxDOT. The following chart represents an estimate of subject vehicles (by county), and is extracted from 1998 registration numbers.

1998 SUBJECT VEHICLE REGISTRATION BY COUNTIES	
Collin	236,313
Dallas	1,168,648
Denton	208,433
Ellis	50,956
Henderson	36,047
Hood	19,911
Hunt	37,287
Johnson	56,834
Kaufman	30,278
Parker	39,445
Rockwall	19,575
Tarrant	774,743
El Paso	321,838
Harris	1,716,696

The commission compares registration data with vehicle inspection results data to identify noncompliant vehicles. Registered owners of vehicles in the affected counties are notified if they have not complied with I/M program requirements. Specific re-registration denial procedures are specified in Chapter 11. In addition, remote sensing identifies gross polluting vehicles that are operating and registered in any of the I/M program areas.

Businesses and public agencies (operating any number of vehicles) may inspect and repair their own vehicles. However, businesses or agencies are required to obtain an emissions station testing license (which includes licensing of inspection technicians) from the DPS in order to participate. Once a business or public agency is licensed, all other program controls, monitoring and enforcement apply.

### Compliance

Subject vehicles must pass an emissions and gas cap integrity test in an inspection facility that has been certified for safety and emissions inspection by DPS and receive a valid vehicle inspection certificate. Failure to pass program elements results in noncompliance of a vehicle. The enforcement for noncompliance ranges from issuance of a citation, to denial of re-registration. Enforcement of the I/M Program is discussed further in Chapters 11 and 12.

### Remote Compliance

DPS honors reciprocal agreements with other I/M programs. Exceptions may be allowed for vehicles operating in the area with proof that adequate emissions testing in another nonattainment area has been passed. Subject vehicles registered in the program area, but primarily operated in another I/M area, may be allowed to be tested in the program area or furnish proof of passing a test of adequate performance standards by the program area in which the subject vehicle is primarily operated in order to show compliance with I/M program requirements.

Vehicles that are registered in Harris County, or DFW or El Paso program areas, but are operated in attainment areas of Texas or in another state, are not required to undergo emissions testing. However, the motorists must complete a DPS affidavit and upon returning to the above mentioned areas, the vehicle must meet program requirements. A vehicle is considered primarily operated in a county if it is used in that county for a least 60 calendar days per testing cycle.

## **7.2 EXEMPT VEHICLES**

The Texas Health & Safety Code exempts motorcycles, slow moving, circus, military tactical, and diesel powered vehicles, vehicles less than 2 years old, and vehicles 25 years old or older from emission testing. Antique vehicles are also excluded from the I/M program, since they are 25 years old or older.

The commission anticipates no further exemptions from the fleet subject to the I/M program; therefore, modeling results are not affected. However, if the number of exempt on-road vehicles exceeds 0.5% of the vehicle fleet, the commission will account for that factor in modeling credit estimates.

Texas does have specially designated license plates for vehicles that are exempt from registration fees and have been referred to as "exempt." These vehicles are included in the I/M program requirements. TxDOT will provide "exempt" motor vehicle registration data via electronic medium to the commission.

The commission has the authority to establish classes of vehicles that are exempt from the I/M program and may establish procedures to allow and review petitions for exemption of individual vehicles, as provided in §382.037(k) of the Texas Health & Safety Code.

### **7.3 FEDERAL VEHICLES**

Pursuant to FCAA, §118(c), federal vehicles, except those identified as military tactical vehicles, operated in Harris County, or the DFW or El Paso program areas are required to comply with all provisions of the I/M program. Therefore, emissions testing is required to ensure that the vehicles meet specified emissions requirements. EPA has provided the definition of a military tactical vehicle as defined in a memorandum dated March 2, 1993 from the Department of the Navy as follows:

“A motor vehicle designed to military specifications or a commercially designed motor vehicle which is needed to meet direct transportation support of combat, combat support, combat service support, tactical, or relief operations, or training of personnel for such operations. Commercial designed motor vehicles described above will be subjected to state inspection and maintenance programs regardless of tactical status.”

Federal Government fleets are permitted to self test within their own maintenance facilities provided that they meet the required equipment standards, are licensed by DPS, and tests are performed in accordance with established inspection procedures.

### **7.4 UNITED STATES ARMED FORCES PRIVATELY OWNED VEHICLES**

The Soldiers and Sailors Relief Act of 1940, Amended in 1974, allows a nonresident owner of a vehicle registered in another state, who is an active member of the United States armed forces, to operate the vehicle in Texas without being registered in Texas. The vehicle is subject to the following requirements.

- (1) The vehicle must display valid license plates issued by another state;
- (2) The vehicle license plates and registration must be issued to the military person;
- (3) The vehicle license plates and registration must be issued by the state where the military person was last stationed or by the state the military person claims as a permanent state of residence; and
- (4) The owner must have in force a specified form of financial responsibility (insurance).

Vehicles meeting these criteria are exempt from Texas registration and therefore, would not be captured in a database comparison. However, pursuant to FCAA §118, federal employees who operate private vehicles on federal property must furnish proof of compliance with the applicable requirements of any vehicle emissions inspection program established in the state in which the federal property is located.

FCAA requires proof of compliance to be presented to the base authority in one of the following ways:

- (1) presentation by the vehicle owner of a valid vehicle inspection report from the local I/M program or from any other I/M program;
- (2) proof of registration within the geographic area covered by the I/M program except for any program whose enforcement is not through registration denial; or
- (3) another method approved by the executive director.

Visiting agency, employee, and military vehicles are exempt from the program as long as such visits do not exceed 60 calendar days per year. Other alternative mechanisms may be approved by the executive director.

The commission requires Commanding Officers or Directors of federal facilities to certify annually to the commission that all subject vehicles have been tested and are in compliance with the FCAA. Current estimates of the federal vehicle population in Harris County, and the DFW and El Paso program areas are as follows:

<b>Federal Vehicle Count</b>	
DFW Program Area	3,636
Harris County	2,882
El Paso Program Area	940

## **CHAPTER 8: TEST PROCEDURES, STANDARDS AND TEST EQUIPMENT**

### **8.1 TEST PROCEDURES AND STANDARDS**

Owners of all subject gasoline powered vehicles that are two through 24 years old that are annually inspected through DPS certified safety inspection stations are required to have an applicable emissions test performed. Vehicles less than two years or greater than 24 years old are not required to provide proof of compliance with the I/M program requirements in conjunction with a safety inspection. Texas has implemented annual vehicle emissions testing in Dallas, Tarrant, Harris and El Paso Counties. Currently, two-speed idle and gas cap integrity tests are performed on all subject vehicles in Dallas, Tarrant, Harris, and El Paso Counties during the annual safety and emissions inspection. Gas cap integrity testing will be performed on all vehicles statewide during annual safety inspections starting January 1, 2000. Beginning January 1, 2001, Harris and El Paso Counties will transition to two-speed idle and OBD testing, while the DFW program area will utilize ASM-2 and OBD testing. In addition, as part of the safety and emissions test, vehicles are subject to anti-tampering checks including: the Exhaust Gas Recirculation (EGR) system, evaporative emissions control system, Positive Crankcase Ventilation (PCV) system, thermostatic air cleaner, the air injection system (smog pump), and for selected model years, the catalytic converter. No purge testing is performed in this program. Unsafe vehicles or vehicles with missing or leaky exhausts that are presented for emissions testing may be rejected.

The vehicle emissions inspection commences when the VIN, license plate number, make, model, year, and other relevant information has been entered into the system. Pre-existing data, based on the registration data base, and the prior vehicle emissions inspection history of the subject vehicle is retrieved. The inspector confirms the information from the VID with the subject vehicle presented for emissions inspection. If no match or contact occurs with the VID, the inspector must manually enter the vehicle information into the analyzer. All emissions inspection test results are electronically stored on the analyzer for 180 days, and sent via modem to the Texas Data Link System host computer immediately following the completion of each test. All emissions inspection test results are accessible to the commission and DPS.

An official test, once initiated, is performed in its entirety regardless of the intermediate outcomes, except in cases of invalid test condition, unsafe conditions or fast pass/fail algorithms. Tests involving measurements are performed with program-approved equipment that has been calibrated. Emissions standards are applicable to all vehicles subject to the program and repairs are required for failure of any standard. The commission may adjust standards as necessary to maintain a passing rate of at least 80%. Upon retest, these vehicles are retested for all pollutants. A second failure of any pollutant level results in a second failure of the vehicle. Vehicles will fail visual inspections of subject emissions control devices if such devices are part of the original certified configuration and are found to be missing, modified, disconnected, improperly connected, or found to be incorrect for the certified vehicle configuration under inspection.

As required by EPA guidance, 30 TAC §114.1, "Control of Air Pollution From Motor Vehicles" outlines requirements for engine replacement, removal/installation of emission components and tampering. Additionally, DPS Administrative Rule §23.93 "Vehicle Idle Emissions Inspection and Maintenance Program" gives guidance on engine switching. The DPS will be responsible for enforcement regarding engine switching and vehicle tampering.

The DPS uses remote sensing to identify gross polluting vehicles operating in the DFW, HGA and El Paso program areas. Remote sensing may also be used as a quality assurance tool for randomly selected or suspect vehicle emissions facilities. Remote sensing screening is conducted according to reliable engineering practices to assure the accuracy of the test.

## **8.2 TESTING EQUIPMENT**

**Two-speed Idle Testing Equipment** - This equipment consists of a computerized exhaust gas analyzer and a gas cap integrity tester. The two-speed idle test is comprised of two phases: (1) high speed test (2200 - 2800 RPMs) for the first phase of the emissions test; then, (2) tested at idle (350 - 1200 RPMs). The gas cap integrity test meets EPA required specifications and procedures. Emissions testing equipment has the capability to simultaneously sample dual-exhaust vehicles. All equipment meets acceptance testing criteria and receives a notice of approval from the agency's Executive Director or his designee prior to use in the Texas I/M Program. All vehicle emissions inspection test systems are computerized and contain lock-out provisions for equipment tampering, equipment failure to conduct or pass calibration or leak checks, and prevent unauthorized access. All equipment provides for automatic data collection that cannot be altered by the emissions testing facility. Steady-state idle test procedures are conducted according to Appendix B of the Federal I/M Rule and steady state idle test equipment specifications consistent with Appendix D of the Federal I/M Rule. Specifications are contained in Appendix G. Vehicle emissions cut points used for the two-speed idle test are located in Appendix A of the Specifications For Preconditioned Two-Speed Idle Vehicle Gas Analyzer System For Use In The Texas Vehicle Emissions Testing Program.

**ASM-2 Testing Equipment** - This equipment consists of a computerized exhaust gas analyzer, a dynamometer, and a gas cap integrity tester. A dynamometer is a set of rollers used to simulate acceleration by applying resistance or increasing load to the drive wheels of the vehicle. The ASM-2 vehicle emissions test is comprised of two phases: (1) the 50/15 mode - in which the vehicle is tested on the dynamometer simulating the use of 50% of the vehicle's available horsepower to accelerate at a rate of 3.3 mph/second at a constant speed of 15 mph, and, (2) the 25/25 mode - in which the vehicle is tested on the dynamometer simulating the use of 25% of the vehicle's available horsepower to accelerate at a rate 3.3 mph/second at a constant speed of 25 mph. Applicable vehicles that cannot undergo an ASM-2 test such as, but not limited to, vehicles that exceed 8,500 GVWR or are all wheel drive, will receive a two-speed idle test. Emissions testing equipment will have the capability to simultaneously sample dual-exhaust vehicles. All equipment will meet acceptance testing criteria and receive a notice of approval from the agency's Executive Director or his designee prior to use in the Texas I/M Program. ASM-2 inspection test systems will contain lock-out provisions for equipment tampering, equipment failure to conduct or pass calibration or leak checks, and prevent unauthorized access. All equipment will provide for automatic data collection that cannot be altered by the emissions testing facility. ASM-2 equipment and procedures will meet EPA requirements. Specifications for ASM-2 equipment are located in Appendix K of this document. Vehicle emissions cut points used for ASM-2 test equipment are located in Appendix K of the Specifications For Acceleration Simulation Mode (ASM-2) Test Procedures for use in the Texas Vehicle Emissions Testing Program.

OBD testing equipment design and operation will meet all federal requirements contained in 40 CFR 85.2207-2231 and recommended Society of Automotive Engineers (SAE) practices (J1962, J1978, and J1979). The OBD system test equipment will meet acceptance testing criteria and receive a notice of approval from the agency's Executive Director or his designee prior to use in the Texas I/M Program. The OBD testing equipment will be tethered to the emissions analyzer, contain lock-out provisions for

equipment tampering, prevent unauthorized access to the test data, and automatically retrieve the test data from the vehicle's OBD system. The OBD system will provide for automatic data collection that cannot be altered by the emission testing facility.

The agency may update emissions testing equipment specifications to accommodate new technology vehicles and changes to the program as necessary.

## **CHAPTER 9: QUALITY CONTROL**

### **9.1 OVERVIEW**

QC measures are implemented by the DPS to ensure the State of Texas meets its commitment to provide motorists with consistent and accurate test results. Vehicle inspection site personnel ensure that emissions measurement equipment is calibrated and maintained properly and that inspection records, calibration records, and control charts or graphs are accurately created, recorded, and maintained. Calibration practices and procedures for two-speed idle test equipment, are performed in accordance with requirements specified by Appendix A of Subpart S of 40 CFR Part 51 and may incorporate EPA's Policy or subsequent policies and/or procedures. Two-speed idle test equipment specifications are located in Appendix G. Calibration practices and procedures for ASM-2 test equipment will be performed in accordance with EPA's policies and requirements or subsequent policies and/or procedures. ASM-2 test equipment specifications are located in Appendix K.

Analyzer manufacturers for two-speed idle and ASM-2 test equipment, incorporating OBD test equipment, will prepare a manual of QC procedures, periodic maintenance schedules, and calibration procedures to be followed by vehicle emissions inspection site personnel to ensure that all equipment is properly calibrated. This manual will be submitted to the commission for approval prior to the sale of any equipment for use in the Texas I/M Program. Manufacturers will ensure an extended service contract is available upon the expiration of the manufacturer's original warranty period.

The vehicle analyzer specifications include, at a minimum, durability and functional requirements to ensure accurate measurements, and processing and recording of test samples under a wide range of adverse ambient conditions. In addition, emissions test equipment will be:

- (1) automated to the highest degree commercially available to minimize the potential for intentional fraud and/or human error;
- (2) secure from tampering and/or abuse;
- (3) based upon written specifications; and
- (4) capable of simultaneously sampling dual-exhaust vehicles.

Preventative maintenance on all inspection equipment necessary to ensure accurate and repeatable operation will be performed at least quarterly. Preventative maintenance refers to any upkeep practice used to slow a component's deterioration associated with frequent use and aging.

### **9.2 EQUIPMENT CALIBRATION AND MAINTENANCE**

Equipment will be maintained according to demonstrated good engineering practices to assure test accuracy. Inspection stations are required to use calibration gases meeting the specifications set forth in 40 CFR Part 51, Appendix A to Subpart S. Any modification of these requirements by the manufacturer will not be implemented without executive director approval. In addition, the commission will obtain EPA approval for any alternative calibrations and maintenance procedures.

Complete records on repairs, software modifications, and calibration of all testing equipment, will be kept on file by the manufacturer during the original warranty and subsequent service contract agreement period. Each analyzer will contain a historical database which automatically records quality control check information, lockouts, and attempted tampering to ensure quality control. The analyzer housing will be constructed to protect the analyzer bench and electrical components from ambient temperatures and humidity fluctuations that exceed the range of the analyzers. Maintenance procedures for gas cap integrity

check equipment will be maintained according to demonstrated good engineering practices to assure test accuracy.

### **9.3 DOCUMENT SECURITY**

All vehicle inspection certificates will be printed with a unique serial number and an official state seal, and will be counterfeit resistant. Each vehicle inspection station will provide for the safekeeping of safety inspection certificates (under lock and key at all times), controlling their sequence of issuance, and ensuring that they are placed on, or issued to, vehicles.

An inspection certificate will not be issued until a vehicle passes all components of the inspection, including emission testing, or qualifies for a waiver or low income time extension. Inspection certificates are affixed to the inside of the lower portion of the windshield on the driver side to prevent theft/removal. Removal of an inspection certificate by breaking into a vehicle is a felony offense.

## **CHAPTER 10: WAIVERS AND TIME EXTENSIONS**

### **10.1 WAIVER SUMMARY**

The commission has adopted criteria for waivers which are issued by DPS in accordance with DPS procedures. Waivers are considered a form of compliance for vehicles that do not meet established emissions standards but which do meet other specific criteria. Currently, the two types of waivers are the minimum expenditure waiver and the individual vehicle waiver.

Each has specific requirements for the vehicle and/or motorist which must be met prior to issuance of the waiver. Waivers are issued only to vehicles which meet these requirements after they have failed the initial emissions inspection. Provided that the necessary criteria are met, a vehicle that has received a waiver during one test cycle may receive another waiver during subsequent test cycles. Waivers will not be issued for more than one year.

### **10.2 MINIMUM EXPENDITURE WAIVER**

A vehicle is eligible for a minimum expenditure waiver provided that it has both failed its initial emissions inspection and retest(s), and has incurred emissions repairs whose costs are equal to or are in excess of amounts described below. Emissions related repairs which count toward a minimum expenditure waiver include both those performed after the initial test and those performed within 60 days prior to the initial test. Costs associated with warranty-related repairs will not count toward a minimum expenditure waiver unless the vehicle owner receives written notification from either the vehicle manufacturer or one of its authorized dealers indicating that specific warranty coverage is being denied. Costs associated with repairs necessary to correct tampering will not count toward a minimum expenditure waiver. Tampering-related repairs are meant to include engine modifications, emissions control system modifications, missing emissions control system components, or fuel type modifications disapproved by EPA.

Only costs associated with repairs that affect vehicle emissions performance will count toward a minimum expenditure waiver. Examples of repairs costs that will not be considered as applicable toward a minimum expenditure waiver include, but are not limited to, services for: the brake system and any of its components; steering and suspension; air conditioning; the exterior body; interior "appearance" components; electrical accessories not related to emissions components; and others as appropriate. As a condition of receiving a minimum expenditure waiver, a visual inspection of both the vehicle and repair receipts will be conducted to ensure that the emissions repairs being claimed have actually been performed.

Labor (including diagnostic) and parts costs which have been incurred for emissions repairs performed by a Recognized Emissions Repair Technician of Texas (RRT), one identified by the DPS as possessing nationally recognized certification, will count toward a minimum expenditure waiver. The RRT component of the Texas I/M Program is described in Chapter 19. For emissions repairs performed by either vehicle owners or other non-certified technicians, only parts (not labor) costs can count toward a waiver for either the replacement or repair of the following emissions control components: (1) air pump; (2) catalytic converter; (3) coil; (4) distributor; (5) evaporative canister; (6) exhaust gas recirculation valve; (7) fuel filler cap; (8) ignition wires; (9) oxygen sensor; (10) positive crankcase ventilation valve; (11) spark plugs; (12) thermal reactor; and (13) hoses, gaskets, belts, clamps, brackets, filters, or other accessories and maintenance items related to these emissions control components and systems.

In order to process minimum expenditure waivers for repairs performed by vehicle owners (and other non-recognized technicians), original receipts for the purchase of parts will be submitted to DPS. The minimum expenditure waiver in any affected county will be \$450 or that amount adjusted by the Consumer Price Index (CPI).

Upon failure of the initial or subsequent emissions inspection tests, the inspection station operator is required to provide the motorist with a failed vehicle inspection report, warranty coverage information, a list of repair facilities, and additional failed vehicle information. Before a retest may be performed, the vehicle owner must supply the inspector with a completed VRF. After qualifying repairs have been completed, and if the vehicle fails its emissions retest, the motorist may apply with DPS for a minimum expenditure waiver.

When applying for a minimum expenditure waiver, the motorist must submit a failed retest report, a VRF, and original repair receipt(s). The repair receipt must indicate, at a minimum:

- (1) an itemized statement of repairs completed;
- (2) the name, location, and address of the repair facility;
- (3) the phone number of the repair facility;
- (4) the cost of parts, labor, and diagnostics; and
- (5) the repair date.

In order to authenticate repairs, the DPS representative will indicate on the receipt that it was submitted for waiver purposes, retain the original, and return a copy of the receipt to the motorist. The original receipts are maintained by the DPS for a minimum of 27 months.

The DPS representative will log the following additional information:

- (1) the date and time of the waiver application;
- (2) the identification of the DPS representative; and
- (3) any other information as determined by the DPS.

The DPS representative will visually verify, to the extent practical, that repairs indicated were actually performed. The DPS representative will further review the itemized, original receipt(s) to verify that the appropriate minimum cost expenditure has been incurred. Following a review of the repair receipt(s), the vehicle will be retested with the applicable inspection test to assess the impact of the repair work performed. Provided that all necessary criteria have been met, a windshield inspection certificate will be issued for the vehicle. All information on the issuance of minimum expenditure waivers will be stored on the VID for tracking purposes.

### **10.3 INDIVIDUAL VEHICLE WAIVER**

In order to address unusual cases where a vehicle cannot meet emissions standards, an avenue is provided for I/M program compliance. This mechanism is necessary to allow these vehicles a means of completing the safety inspection process when the vehicle could not be expected to meet emissions testing standards even if the minimum expenditure waiver amount was met. In such an instance, the registered vehicle owner is required to petition the DPS in writing explaining the unusual vehicle circumstances which make compliance with emissions standards unreasonable. The registered vehicle owner is required to submit any and all documentation which helps to support a "good faith" effort on his/her part. The DPS will review each petition on a case-by-case basis to determine if compliance without meeting emissions standards is appropriate. Provided that it is, the DPS requires that the vehicle receive an inspection at a DPS designated

facility to substantiate the claims made by the vehicle owner. Provided that all requirements have been met, including the safety inspection, a windshield certificate is issued indicating that the vehicle is in compliance. Information regarding individual vehicle waivers are stored on the VID for tracking purposes. It is anticipated that fewer than 500 vehicles statewide will receive an individual vehicle waiver.

#### **10.4 PARTS AVAILABILITY TIME EXTENSION**

If a vehicle fails its initial emissions inspection test and the repairs necessary for a reduction in emissions require an uncommon part, the vehicle may qualify for a parts availability time extension. This type of extension is granted by a DPS representative on a case-by-case basis and is issued for either 30, 60, or 90 days or longer if applicable, not to exceed one test cycle. An automotive emissions-related part is considered uncommon if it takes more than 30 days for expected delivery, the motorist can demonstrate that a reasonable attempt was made to locate necessary emissions control parts by retail or wholesale parts suppliers, and the time required exceeds the expiration date of the vehicle's current test cycle.

Submission to a DPS representative of either an invoice or receipt indicating that the necessary emissions control component(s) has been ordered is sufficient for the purposes of demonstrating a "good faith" effort by the motorist. If not listed on either the invoice or receipt, the motorist is required to submit the following information to a DPS representative for each component:

- (1) name and address of parts distributor;
- (2) phone number of parts distributor;
- (3) order number;
- (4) name, description, and catalog number of component; and
- (5) other information as necessary.

The DPS representative may contact the parts distributor to verify the length of time necessary for the component(s) to be received. The DPS representative may add to the length of time projected to be necessary for a complete repair and a time extension will be issued for either a 30, 60, or 90 days or longer if applicable, not to exceed one test cycle. Upon completion of repairs, the motorist must return to an inspection station for an emissions retest. If the vehicle passes its retest, it will be issued the appropriate windshield certificate. If the vehicle fails the retest and meets the necessary criteria, the motorist may then apply for a minimum expenditure waiver. The commission periodically audits the testing data base to ensure that vehicles receiving parts availability time extensions are being properly repaired and retested. A vehicle which receives a parts availability time extension in one test cycle without receiving a retest is ineligible for a parts availability time extension in the subsequent test cycle, in addition to other enforcement mechanisms applicable.

#### **10.5 COMPLIANCE VIA LOW-INCOME TIME EXTENSIONS**

A motorist whose vehicle fails an emissions inspection may apply for a low-income time extension if he/she can demonstrate a financial inability to either afford adequate repairs or to meet the applicable minimum expenditure waiver amount. The low-income time extension is intended to allow the extra time of one test cycle for an owner with a financial hardship to come into compliance by passing the emissions inspection. The low-income time extension is not intended as a permanent exemption from vehicle emissions testing and repair requirements. The low-income time extension is valid for only one test cycle and may not be issued for the same vehicle even in a subsequent test cycle until the subject vehicle has passed an emissions test or otherwise complied with the program. However, a vehicle may receive a low-income time extension more than once in its operating life (i.e. a vehicle may receive one every other test cycle if the subject

vehicle passes an emissions test or otherwise complies with the program requirements after receiving the previous time extension).

For the purposes of the low-income time extension, financial hardship is defined as the inability to afford either adequate vehicle repair costs or the minimum expenditure waiver amount. The commission and/or DPS may base the criteria for financial hardship on one or more of the following requirements:

- (1) registered vehicle owner is the recipient of financial assistance from the Texas Department of Human Services;
- (2) registered vehicle owner's adjusted gross income for the most recent calendar year is at or below the federal poverty level; and/or
- (3) other criteria as determined by the commission and/or DPS.

The low income time extension is available to a registered vehicle owner:

- (1) whose vehicle fails an emissions inspection;
- (2) whose vehicle has completed any warranty related repairs;
- (3) who has proof of meeting the appropriate hardship eligibility criteria;
- (4) whose vehicle is identified by appropriate title and/or registration information; and
- (5) whose vehicle has not received a low-income time extension during the previous test cycle.

In order to receive a low-income time extension, the vehicle owner submits an application and present necessary information to a DPS representative. Applicants are required to sign an affidavit attesting to their income status. The DPS representative is required to record low-income time extensions in a designated database so that this information is available for proper tracking purposes. If the registered owner fulfills the appropriate criteria, a low-income time extension is issued for the vehicle.

### **10.6 WAIVER RATE**

For the purposes of demonstrating that the I/M program meets the applicable performance standard, the commission has assumed a waiver rate for each nonattainment area. The commission commits to a waiver rate in practice that is equal to or lower than the percentages of initially failed vehicles listed below:

- (1) 3% for the DFW program area;
- (2) 3% for the El Paso program area; and
- (3) 3% for the HGA program area.

If the waiver rates stated in the annual report to EPA are higher than these amounts, the commission and DPS will take corrective action to lower the waiver rate. Corrective strategies may include:

- (1) requiring the vehicle receiving a waiver to have its emissions test output levels reduced by a specified amount;
- (2) limiting the model years that are eligible for a waiver;
- (3) raising the cost limits for minimum expenditure waivers; and/or
- (4) other measures determined by the commission and/or DPS.

If the waiver rate cannot be lowered to levels committed to in the SIP, or if the commission chooses not to implement measures to do so, then the commission will revise the I/M emissions reduction projections in the SIP. If necessary, the commission will develop other program changes to ensure that the performance standard is met.

## CHAPTER 11: MOTORIST COMPLIANCE ENFORCEMENT

Compliance is ensured through re-registration denial and a sticker-based enforcement system. The program is expected to achieve a compliance rate of 96%. Results from a safety inspection compliance survey in Dallas, Tarrant, Harris and El Paso Counties indicates 95% compliance without the additional program enhancements. Results are located in Appendix J.

Registration certificates which are affixed on the windshield immediately above the safety inspection certificate currently have markings which indicate a vehicle is registered in an I/M program area. The safety inspection program utilizes a windshield certificate indicating the subject vehicle is in compliance with both the emissions testing and safety inspection program. Law enforcement officials can visually compare the county of registration and the county of inspection.

Inspection certificates are in the shape of the State of Texas, have a state (DPS) seal, have a unique number, and tear when removed. Additional security features have been added, which have not been utilized by counterfeiters. The Gas Analyzer Specifications (Appendices G and K) and the VID assist DPS in tracking inspection certificate numbers. DPS may continue to change the inspection certificate to prevent counterfeiting.

To implement re-registration denial as an enforcement tool, the commission compares the registration database and the inspection database. Letters are sent to registered owners of vehicles that meet the “subject” criteria and (1) fail an initial inspection and never pass a subsequent test, receive a waiver, or otherwise comply with the I/M program requirements; or (2) obtain a safety inspection test outside of Harris County, or the DFW or El Paso program areas. In addition, the commission is developing mechanisms for re-registration denial of “subject” vehicles which are registered in Harris County, or DFW or El Paso program areas and have never complied with the I/M program requirements.

Motorists are issued citations by local and state law enforcement officials for driving a vehicle with an expired or invalid state inspection certificate, or for evading the emission inspection or inspection outside of the affected area. These violations of the Texas Transportation Code, Sections 548.602 (Class C misdemeanor) and 548.603 (Class B misdemeanor) are punishable by a fine ranging from \$200 and not to exceed \$2000, respectively for each occurrence. The owner will be subject to an additional citation every time the vehicle is driven. Violators are given notification that they must comply with the I/M program requirements. Noncompliance will result in delivery of additional citations and fines which may accumulate to more than the expense of a minimum expenditure waiver. Continual noncompliance will result in denial of re-registration..

Fines for motorists involved in bribery or fraud are substantially higher, and may also result in incarceration. A motorist suspected of obtaining an inspection certificate in a neighboring county to avoid the emissions portion of the inspection may be charged with willful purchase of a fraudulent inspection certificate. Pursuant to Texas Transportation Code Section 548.603, this is a Class B misdemeanor.

A comparison of the TxDOT registration data base and the VID is used to identify subject vehicles that are registered in the affected area but have failed to comply with the I/M program. Those vehicles may be flagged in the TxDOT registration data base, and be denied re-registration until the vehicle has complied with I/M program requirements.

The commission may use VIN decoder software to search for vehicles that have changed their fuel type designation from “gasoline” to “diesel” on their vehicle registration record to avoid emissions testing requirements. In addition, records that have had the fuel type designation changed will be flagged in the VID. The commission will analyze this data for abuse.

Owners of subject gasoline powered vehicles two through 24 years old, which are identified as failing the emissions standards set for remote sensing, are required to comply with the vehicle emissions testing requirements of the affected area. Registered owners are given notification that they must submit their vehicle for emissions testing within 30 days. Noncompliance will result in delivery of citations, and continual noncompliance may result in denial of re-registration.

The ultimate enforcement is denial of vehicle re-registration for those vehicles registered in the affected area that do not comply with vehicle testing requirements. DPS has the authority to issue misdemeanor citations to a motorist operating a vehicle in violation of certain provisions of Chapter 548, Texas Transportation Code, which includes emission related inspections.

## **CHAPTER 12: MOTORIST COMPLIANCE ENFORCEMENT PROGRAM OVERSIGHT**

The commission and/or DPS audit enforcement efforts regularly and follow effective program management practices, including adjustments to improve operation when necessary. The commission has implemented a QA program described in Chapter 13 to ensure effective overall performance of the enforcement system.

A vehicle inspection compliance survey, enclosed as Appendix J, indicates a 95% compliance rate for Dallas, Tarrant, Harris and El Paso Counties. The high compliance rate for vehicle safety inspections, coupled with the addition of registration data base comparison and denial of re-registration, should result in an even higher overall compliance rate. The Texas I/M Program is expected to maintain a compliance rate of 96%.

### **12.1 PROCEDURES**

The DPS and TxDOT will implement, maintain, and assure that QC procedures are implemented consistent with 40 CFR §51.362(a). Measures include the establishment of written audit procedures and/or checklists for I/M document handling and processing, notification of motorists and inspection facilities suspected of violating program rules and permit EPA audits of the enforcement procedures. These procedures are consistent with 40 CFR §51.362(a)(5), (b)(2) and state law.

### **12.2 INSPECTION CERTIFICATE**

Texas inspection certificates are designed to prevent counterfeiting (See Chapter 9 Quality Control). Safety inspection personnel are provided written instructions and training to enable them to recognize fraudulent documents. DPS currently has a program operating that is designed to find counterfeit certificates and prosecute those making, possessing, or selling them. DPS has established measures to control and track inspection certificate distribution and handling. Additionally, the DPS maintains a complete record of all inspection certificates received, issued, or voided at each inspection facility. The DPS conducts a monthly check for sequential issuance of vehicle inspection certificates. Inspectors must account for all missing certificates, and must provide a monthly report on all certificates issued. The DPS conducts biannual audits of inspection certificate books. DPS has adopted a unique inspection certificate for use in I/M program areas. The commission and TxDOT will continue to explore means to improve the information regarding subject and non subject vehicles and the accuracy of the vehicle registration data base.

### **12.3 OVERSIGHT**

A contract to design, implement, and operate a telecommunications network supporting the commission and the DPS program oversight and management requirements has been awarded to a contractor. These on-line oversight capabilities provided to the commission and DPS include, but are not limited to, the following:

- (1) display of facility testing statistics;
- (2) read-only access to the following data bases:
  - (a) inspection results,
  - (b) waivers,
  - (c) complaints, and
  - (d) recalls.
- (3) Vehicle Inspection Histories
- (4) Comparison of Vehicle Registration and Safety Inspection Data bases
- (5) Regular audit of data base information

The exception to the read-only access to databases is the ability of the DPS to change some inspection results to assist in conducting covert audits, allowing a covert vehicle to be used at several facilities.

#### **12.4 COMPUTERIZED TESTING**

The commission has developed specifications for emissions testing equipment requiring a computerized testing system to automatically:

- (1) make a pass/fail decision for all measurements;
- (2) record test data to an electronic medium;
- (3) conduct regular self-testing of recording accuracy;
- (4) perform electrical calibration and system integrity checks before each test, as applicable;
- (5) perform system lockouts for specified QC checks; and
- (6) perform limiting and cross-checking error detection of manually entered data.

#### **12.5 DATABASE**

The centralized database provides a computerized list of all vehicles which were scheduled to be inspected but did not actually undergo testing. Comparison of this data with the registration database assists the commission in ensuring the accuracy of the registration data. The commission compares the testing and registration databases to determine program effectiveness, establish compliance rates, and target violators.

The QA personnel perform periodic and automated reviews of collected inspection data. These reviews emphasize checks for valid alphanumeric sequences of the VIN, gross vehicle weights, model year, and fuel types.

The DPS pursues strategies to assess the compliance status of subject vehicles and to assure the quality of the enforcement database, including the use of parking lot surveys. The DPS also conducts remote sensing studies applicable to subject vehicles. The DPS will cooperate with the EPA in conducting periodic audits of the I/M program enforcement efforts.

Governmental and quasi-governmental agencies which fall outside the normal registration and inspection process are subject to enforcement pursuant to Subchapter D of the Texas Clean Air Act, Texas Health & Safety Code, Chapter 382 for violations of 30 TAC §114.50 .

## CHAPTER 13: QUALITY ASSURANCE

### 13.1 OVERVIEW

DPS has procedures in place to identify, correct, and prevent fraud, waste, and abuse, and to determine if adequate emissions testing procedures are being followed, equipment is measuring accurately, and whether problems might exist which would reduce program effectiveness. The DPS conducts overt and covert performance audits, record audits, and equipment audits at each emissions inspection lane or test bay (analyzer). In addition to scheduled audits, the DPS may perform random audits based on tips or complaints from consumers.

The QA procedures include operation and progress reports, in addition to overt and covert audits of emissions inspectors and stations. At the conclusion of a DPS audit, the auditor completes a formal evaluation (using either electronic or written forms) listing the conclusions of each performance, records, or equipment audit. DPS maintains copies of evaluations in the inspector and inspection station history files. Each evaluation provides sufficient detail to support either administrative or civil enforcement actions.

An electronic data base is used to conduct statistical audits and to alert the state of improprieties in the program. This electronic data base includes data supporting the following activities:

- (1) analysis of facility and inspector statistics;
- (2) location of data discrepancies or patterns;
- (3) investigation of the causes of problem areas;
- (4) proposal of policy for the implementation of corrective action; and
- (5) verification of whether the corrective strategies used solved the problem sufficiently.

Overt and covert audit procedures are based upon written instructions and are updated as necessary to reflect program changes or requirements necessary to benefit the program.

### 13.2 PERFORMANCE AUDITS

A minimum of three performance audits, two overt for each lane or test bay (analyzer) and one covert for each FTE equivalent lane inspector are conducted each year. The number of FTE lane inspectors is calculated by adding all of the full and part-time inspectors and dividing by the actual amount of time spent on inspections, and then rounding-up to the next highest number of full-time inspectors (52 weeks = 1 FTE). In addition, performance audits may be performed as a result of audits, data analysis, or consumer complaints which indicate that inspectors may be violating regulations.

#### Overt Audits

Overt audits, conducted by the DPS or their agents, which entail the observation of skill and competence of emissions inspectors, proper machine calibrations, and sufficient documentation practices include, but are not limited to, the following procedures:

- (1) a check for the observance of appropriate document security;
- (2) a check to see that required record keeping practices are being followed;
- (3) a check for certificates and other required display information; and
- (4) observation and written evaluation of each inspector's ability to properly perform an inspection.

#### Covert Audits

Covert audits are performed in accordance with EPA's I/M Rule §51.363 (a)(4)(iii). The DPS has responsibility for all covert audits. A standard covert audit requires the auditor to drive a vehicle that is designed to fail into an undisclosed inspection station. The auditor observes the inspection and determines whether proper techniques are utilized. Covert audits may be conducted with vehicles that are designed to pass an inspection to identify facilities that may falsely fail vehicles. At a minimum, the number of covert audits per year totals the number of certified inspectors (based on FTEs) within the program. Each covert audit follows established procedures including, but not limited to:

- (1) remote visual observation of inspector performance, which may include the use of aids such as binoculars or video cameras, at least once per year per FTE in high volume stations (more than 4,000 tests per year);
- (2) site visits at least once per year per number of FTE inspectors, using covert vehicles designed to fail the inspection (this requirement sets a minimum level of activity, not a requirement that each inspector be involved in a covert audit) and/or for stations that conduct both testing and repairs, at least one covert vehicle visit per station per year which includes the purchase of repairs and subsequent retesting if the vehicle is initially failed for tail pipe emissions;
- (3) documentation of the audit, including vehicle condition and preparation, sufficient for building a legal case and establishing a performance record;
- (4) covert vehicles covering the range of vehicle technology groups (i.e., carbureted and fuel-injected vehicles) and the range of introduced malfunctions covered in the emissions test;
- (5) sufficient numbers of covert vehicles and auditors to allow for frequent rotation of both to prevent detection by station personnel; and
- (6) access to on-line inspection databases by DPS oversight personnel to permit the creation and maintenance of covert vehicle records.

### **13.3 RECORDS AUDITS**

Vehicle inspection station and inspector records are screened on a monthly schedule. Records audits assess document security, record keeping practices, certifications, and other required display information. In addition they assist in identifying problems that may indicate potential fraud or incompetence.

The electronic database is used to perform computer analyses of emissions data in order to identify statistically inconsistent information, discrepancies, patterns, and unusual entries.

An auditor, if appropriate, visits an inspection station to review records not already covered in the electronic analysis. A comprehensive accounting for all safety inspection certificates is also performed during a records audit.

### **13.4 EQUIPMENT AUDITS**

Equipment audits include a QC evaluation of required test equipment and written confirmation that appropriate test equipment is being used. Equipment audit procedures include, but are not limited to:

- (1) A gas audit using gases of known concentration at least as accurate as those used for routine QC checks (calibration gases with a 2 percent certainty). A comparison is made with the concentration of the actual readings;
- (2) A check of tampering and general serviceability of the equipment;
- (3) A leak check;
- (4) A check to determine that station gas bottles used for calibration are properly labeled and within relevant tolerances;

- (5) A check to determine that the gas cap pressure test equipment is within specifications; and
- (6) Functional checks of any loaded mode equipment which may be in use.

### **13.5 AUDITOR TRAINING AND PROFICIENCY**

The DPS may conduct or contract covert and overt audits.

A standardized set of audit training procedures and curriculum is established by the DPS and includes, at a minimum:

- (1) the use of analyzers and other emissions testing equipment;
- (2) the program rules and regulations;
- (3) the basics of air pollution control;
- (4) the basic principles of engine repair related to emissions;
- (5) the basic principles of motor vehicle emissions control systems;
- (6) state administrative procedures;
- (7) covert audit practices;
- (8) evidence gathering; and
- (9) quality assurance practices.

## **CHAPTER 14: ENFORCEMENT AGAINST CONTRACTORS, STATIONS AND INSPECTORS**

The DPS will implement, maintain, and assure that procedures are implemented to instruct individuals in the enforcement process. Procedures will include the establishment of written procedures for personnel engaged in the I/M program to document handling and processing.

The DPS has the authority to take enforcement actions against inspectors and inspection facilities when necessary, even if the licensee had no direct knowledge of the violation, under Texas Transportation Code Section 548.405 (See Appendix H).

Penalties for violations of program rules and procedures range between a six month suspension and a three year suspension. The penalty assessed will be based on many factors, including whether the violation was a first, second, or subsequent violation, or multiple violations of different requirements. At a minimum, the inspector and station license suspension will be imposed for at least six months whenever the vehicle is intentionally improperly passed for any portion of the test. In the case of intentional gross misconduct, a first offense may result in a Class B misdemeanor or Third Degree Felony and a corresponding fine not to exceed \$2,000 and/or confinement in jail not to exceed 180 days or a fine not to exceed \$10,000 and/or imprisonment of not more than 10 years or less than 2 years, respectively, for the licensed station, and the inspector if involved. DPS may choose to revoke the inspector's or the facility's certification. The administrative process to deny an application for a license or revoke or suspend an outstanding certificate of any inspection station or the certificate of any person to inspect vehicles will be enforced by DPS according to the Texas Transportation Code, Section 548.407 (See Appendix H).

In addition, the commission has authority to assess penalties for failure to comply with commission rules. The commission may assess penalties of up to \$10,000 a day.

The DPS and the commission will maintain and store records of enforcement cases and enforcement statistics on violations and penalties for a period of no less than three years, and will compile these statistics on an annual basis.

## CHAPTER 15: DATA COLLECTION

The commission collects test data to unambiguously link specific test results to a specific vehicle, I/M program registrant, test site, and inspector, and to determine whether or not the correct testing parameters were observed for the specific vehicle in question. In turn, this data is used to distinguish complying and noncomplying vehicles as a result of analyzing the data collected and comparing it to a vehicle data base, to screen inspection stations and inspectors for investigation as to possible irregularities, and to help establish the overall effectiveness of the program.

A contractor has established a sophisticated central data base and statewide network for the collection, processing, transmission, monitoring, and reporting of vehicle emissions-related data. The VID, supported by a statewide network, receives, processes, and transmits vehicle and emissions-related data at the beginning of each emissions test and at the conclusion of each test on a near real-time basis. In addition, the VID is designed to receive and process vehicle specific, emissions-related data captured by remote sensing devices. The data contractor is responsible for maintaining the data collection system and for providing oversight and administrative capabilities to the commission and DPS.

The following inspection data, as defined in the applicable equipment specification, will be collected for each test conducted;

- a) test record number;
- b) inspection station number;
- c) analyzer number;
- d) inspector identification number;
- e) test system number;
- f) date of test;
- g) emissions test start time;
- h) time final emissions scores are determined;
- i) VIN;
- j) license plate number;
- k) inspection certificate number;
- l) gross vehicle weight rating (GVWR);
- m) transmission type;
- n) fuel type;
- o) vehicle model year;
- p) vehicle make;
- q) vehicle type;
- r) test procedure used;
- s) odometer reading;
- t) type of test performed (i.e., initial or retest);
- u) results of each visual inspection - parameter checks;
- v) results of the gas cap integrity test;
- w) HC scores and standards for each test mode;
- x) CO scores and standards for each test mode;
- y) CO<sub>2</sub> scores and standards for each test mode;
- z) if applicable, NO<sub>x</sub> scores and standards for each test mode;
- aa) overall test results;
- bb) audit flag;

- cc) dispute/waiver flag;
- dd) number of cylinders or engine displacement;
- ee) type of vehicle preconditioning performed;
- ff) emissions test sequences used;
- gg) OBDII readiness results;
- hh) OBDII fault code results;
- ii) OBDII MIL status;
- jj) OBDII MIL check; and
- kk) OBDII test results.

The commission will gather and report the results of the quality control checks, described in the quality control section of this document and in 40 CFR §51.359, identifying each check by station number, system number, date, and start time. The data report will also contain the concentration values of the calibration gases used to perform the gas characterization portion of the quality control checks.

## CHAPTER 16: DATA ANALYSIS AND REPORTING

### 16.1 TEST DATA REPORT

The commission submits a Test Data Report to EPA by June 30 of each year for data collected from January 1 through December 31 of the previous year. In addition, the commission has established direct access, for EPA Region 6, to all vehicle emissions reports associated with the I/M program. The basic statistics reported include:

- (1) the number of vehicles tested by test type, model year, and vehicle type;
- (2) by test type, model year, and vehicle type, the number and percentage of vehicles:
  - (a) failing the emissions test initially;
  - (b) failing each emissions control component check initially;
  - (c) failing the gas cap integrity test initially;
  - (d) initially failed vehicles passing on the first or subsequent retest for tail pipe emissions;
  - (e) initially failed vehicles passing each emission control component check on the first or subsequent retest by component;
  - (f) initially failed vehicles passing the gas cap integrity test on the first or subsequent retest;
  - (g) initially failed vehicles receiving a waiver;
  - (h) vehicles with no known final outcome (regardless of reason);
  - (i) MIL is commanded on and no codes are stored;
  - (j) MIL is not commanded on and codes are stored;
  - (k) MIL is commanded on and codes are stored;
  - (l) MIL is not commanded on and codes are not stored; and
  - (m) readiness status indicates that the evaluation is not complete for any module supported by the on-board diagnostic systems;
- (3) the initial test volume by test type, model year, and test station;
- (4) the initial test failure rate by test type, model year, and test station; and
- (5) if applicable, the average increase or decrease in tail pipe emission levels for HC, CO, and NO<sub>x</sub> (if applicable) after repairs by test type, model year, and vehicle type for vehicles receiving a mass emissions test or approved alternative.

### 16.2 QUALITY ASSURANCE REPORT

The commission submits a Quality Assurance Report to EPA by June 30 of each year for data collected from January 1 through December 31 of the previous year. The basic statistics reported includes:

- (1) the number of inspection stations and certified analyzers:
  - (a) operating throughout the year; and
  - (b) operating for only part of the year;
- (2) the number of inspection stations and lanes operating throughout the year:
  - (a) receiving overt performance audits in the year;
  - (b) not receiving overt performance audits in the year;
  - (c) receiving covert performance audits in the year;
  - (d) not receiving covert performance audits in the year; and
  - (e) that have been shut down as a result of overt performance audits;
- (3) the number of covert audits:
  - (a) conducted with the vehicle designed to fail the emissions test;
  - (b) conducted with the vehicle designed to fail the component check;
  - (c) conducted with the vehicle designed to fail the gas cap integrity test;

- (d) conducted with the vehicle designed to fail any combination of two or more of the above checks;
- (e) resulting in a false pass for emissions;
- (f) resulting in a false pass for component checks;
- (g) resulting in a false pass for the gas cap integrity test; and
- (h) resulting in a false pass for any combination of two or more of the above checks;
- (4) the number of inspectors and stations:
  - (a) that were suspended, fired, or otherwise prohibited from testing as a result of covert audits;
  - (b) that were suspended, fired, or otherwise prohibited from testing for other causes; and
  - (c) that received fines;
- (5) the number of inspectors licensed or certified to conduct testing;
- (6) the number of hearings:
  - (a) held to consider adverse actions against inspectors and stations; and
  - (b) resulting in adverse actions against inspectors and stations;
- (7) the total amount collected in fines from inspectors and stations by type of violation;
- (8) the total number of covert vehicles available for undercover audits over the year; and
- (9) the number of covert auditors available for undercover audits.

### **16.3 QUALITY CONTROL REPORT**

The commission submits a Quality Control Report to EPA by June 30 of each year for data collected from January 1 through December 31 of the previous year. The basic statistics reported includes:

- (1) the number of emissions testing sites and certified analyzers in use in the program;
- (2) the number of equipment audits by station and lane (analyzer);
- (3) the number and percentage of stations that have failed equipment audits; and
- (4) number and percentage of stations and lanes (analyzers) shut down as a result of equipment audits.

### **16.4 ENFORCEMENT REPORT**

The commission will submit an Enforcement Report to EPA by June 30 of each year for data collected from January 1 through December 31 of the previous year. The basic statistics reported includes:

- (1) an estimate of the number of vehicles subject to the inspection program, including the results of an analysis of the vehicle data base, performed jointly by the commission and TxDOT;
- (2) the percentage of motorist compliance based upon a comparison of the number of valid final tests with the number of subject vehicles;
- (3) the number of waivers and extensions granted to motorists;
- (4) the number of compliance surveys conducted, number of vehicles surveyed in each, and the compliance rates found;
- (5) a report of the program's efforts and actions to prevent motorists from having their vehicles inspected out of the program area and the results of special studies to investigate the frequency of such activity;
- (6) the number of compliance documents issued to stations;
- (7) the number of missing compliance documents;
- (8) an assessment of the efforts to detect and enforce against motorists falsely changing vehicle classifications to circumvent program requirements and frequency of type of activity;
- (9) a report on efforts to detect and enforce against motorist falsely changing vehicle classifications to circumvent program requirements, and the frequency of this type of activity;

- (10) the number of parking lot sticker audits conducted, the number of vehicles surveyed in each, and the noncompliance rate found during those audits;
- (11) the number and percentage of subject vehicles that were tested by the initial deadline, and by other milestones in the cycle; and
- (12) the number of enforcement systems audits, and the error rate found during these audits.

### **16.5 BIENNIAL REPORT**

The commission will submit to EPA by June 30 of every other even year, biennial reports on the I/M program areas addressing:

- (1) any changes made in program design, funding, personnel levels, procedures, regulations, and legal authority, with detailed discussion and evaluation of the impact on the program of all such changes;
- (2) any weaknesses or problems identified in the program within the two-year reporting period, what steps have already been taken to correct those problems, the results of those steps, and any future efforts planned; and
- (3) the number of enforcement system audits and the error rate found during those audits.

## **CHAPTER 17: INSPECTOR TRAINING AND LICENSING OR CERTIFICATION**

DPS has authority to certify inspectors. These requirements are authorized by Texas Transportation Codes 548.304 and 402 and are incorporated in DPS rules, 37 TAC, Chapter 23.

### **17.1 INTRODUCTION**

Anyone who wishes to own or operate a vehicle inspection station, or who would like to become a certified vehicle inspector may submit a written application to the DPS.

Before any person can inspect vehicles under the Texas Vehicle Inspection Act, they must attend a training session and be examined and certified by a member of the Vehicle Inspection Service of the DPS.

### **17.2 STATION OWNER AND/OR MANAGER REQUIREMENTS**

At a minimum, the owner and/or manager of the emissions inspection station will employ one full-time certified inspector who has successfully completed the training and testing specified in the Appendix J. Only a Certified inspector will conduct emissions testing on vehicles that are presented for testing in the I/M program area.

The following requirements must be met to be certified and conduct inspections in the I/M program:

- (1) be at least 18 years of age;
- (2) hold a valid driver's license from their state of residence;
- (3) be employed by a licensed official vehicle inspection station before examination will be given;
- (4) be of good moral character and physically capable of conducting the required inspection;
- (5) not be under suspension in the Texas Vehicle Inspection Program;
- (6) make application for inspector certification on form DPSVI-3;
- (7) attend a training session conducted by the DPS;
- (8) pass with a grade of not less than 80 on the general examination, (a written or verbal examination based on the law and rules and regulations of the DPS pertinent to the vehicle inspection program);
- (9) successfully demonstrate the ability to correctly operate the testing devices at the inspection station where employed; and
- (10) submit the statutory fee when the certification process by the test administrator is completed and the person is ready for issuance of an inspection certificate. An inspector is exempt from the inspector certificate fee if employed at a governmental inspection station. Dual authorization for another class of inspection station would require an inspection certificate fee.

In addition to the standard safety inspection requirements listed above, curriculum for the emissions inspector training programs will include, at a minimum, the following subjects:

- (1) the air pollution problem, its causes and effects;
- (2) purpose, function, and goals of the inspection program;
- (3) inspection regulations;
- (4) test procedures and the rationale for their design;
- (5) safety and health issues related to the inspection process;
- (6) emissions control device configuration, and inspection;
- (7) test equipment operation, calibration, and maintenance;
- (8) QC procedures; and

- (9) public relations.

Instruction is furnished by:

- (1) inspector schools conducted by the DPS;
- (2) studying the Vehicle Inspection Rules and Regulations Manual;
- (3) individual instruction by either a DPS representative or a company equipment representative;
- (4) association with others (mechanics, service managers, etc.); and
- (5) if DPS does not conduct the inspector training, the DPS will monitor and evaluate inspector training.

The written examination may be conducted at the inspection station where the person works, at a DPS office, or any place decided upon by the DPS. The demonstration of the ability to correctly operate the testing equipment devices will ordinarily be conducted at the inspection station where the person is to work, but may be conducted elsewhere. In every instance, the demonstration will be performed on the same type of devices as those used at the place of employment.

### **17.3 PROCESS FOR CERTIFICATION AND RECERTIFICATION OF INSPECTORS**

The process for certification and recertification of inspectors is as follows:

- (1) Periodic inspector schools will be conducted by the DPS.
- (2) After each inspector school has been conducted, examinations will be given by the test administrator to those individuals affected. Examinations:
  - (a) will not necessarily be given at the time school is held; and
  - (b) may be done either in groups or for individuals.
- (3) Parameters are to be inspected. In addition to the standard safety inspection requirements for certification, the applicant is required to properly operate the testing devices and identify the following vehicle emissions components at the inspection station where employed. This shall include demonstrations by all applicants of their ability to perform a "dry run" inspection. The applicant must:
  - (a) visually inspect the thermostatic air cleaner (TAC) intake system;
  - (b) visually inspect the exhaust gas recirculation (EGR) system valve, hoses and wires;
  - (c) visually inspect the positive crankcase ventilation (PCV) system, valve and hoses;
  - (d) visually inspect the air injection system (AIS);
  - (e) visually inspect the evaporative emissions control system, canister, hoses, and gas filler caps;
  - (f) visually inspect the catalytic converter system ( for vehicles originally equipped with a catalytic converter at the time of manufacture);
  - (g) proper operation of a gas cap integrity check;
  - (h) proper operation of a Two Speed Idle analyzer, if applicable;
  - (i) proper operation of ASM-2 analyzer, if applicable; and
  - (g) proper operation of OBD test equipment.

### **17.4 FAILURE TO PASS THE WRITTEN TEST**

Each person failing to pass the written test is informed of his/her failure to qualify on the examination, his/her grade, his/her mistakes, and given the correct answers to the questions missed. He/she will be advised that he/she may take a subsequent examination in seven days. The second examination conducted at the end of the seven days waiting period will be a different examination. Failure of the second examination will be cause for a waiting period of thirty days. A review of the second examination will not be given; the applicant will be told his/her grade and whether or not he/she passed.

### **17.5 FAILURE TO PASS THE DEMONSTRATION TEST**

Persons failing to pass the demonstration test are informed of their failure to pass the demonstration test. They are shown their mistakes in the use of the testing devices and in vehicle component identification. They are advised where and when subsequent tests may be taken. After two consecutive failures, additional tests will be conducted only after due evaluation of the circumstances involved.

### **17.6 PASSING THE WRITTEN AND DEMONSTRATION TESTS**

When a person has satisfactorily passed the written examination, demonstrated his/her ability to operate the testing devices and correctly identified the vehicles' emissions components, a fee of \$10.00 will be paid to certify an inspector until August 31 of the even-numbered year following the date of appointment. The applicant will notify his/her service manager and/or owner and complete DPS form VI-3 for submission to the Vehicle Inspection Records Department of DPS in Austin.

### **17.7 EXPIRATION OF CERTIFICATION OF INSPECTORS**

Certification of inspectors will expire upon any of the following events:

- (1) on August 31 of the even-numbered year following the individual's first date of appointment , thereafter, appointments are for two-year periods;
- (2) when individual certification has been withdrawn by the DPS;
- (3) when the inspector's drivers license is suspended or expired; or
- (4) when the inspector fails to attend a required recertification school.

### **17.8 REEXAMINATION**

The following are reasons for reexamination:

- (1) At any time a DPS representative feels an inspector needs to be reexamined, the DPS representative may require the inspector to take any part of the written and demonstration tests. Failure to pass the required test(s) disqualifies the inspector immediately.
- (2) The DPS reserves the right to withdraw for cause its certification of any inspector, or require attendance at any procedure updating training program at any time, or require reexamination at any time to determine if the inspector has full knowledge of the current official inspection rules and regulations.
- (3) If the examination discloses the certified inspector is not familiar with new or existing regulations, the certified inspector will be removed from inspections until able to pass a reexamination.

### **17.8 DUAL AUTHORIZATION**

A certified inspector may be certified at more than one vehicle inspection station at the same time. Inspection station owners will furnish information as may be required by the DPS pertaining to inspectors' employment at the station on form V I-3a within three working days of a change in the inspector's employment. In such instances, the dual authorization will be recorded in the inspector's notebook on form V I-27.

### **17.9 CHANGES IN EMPLOYMENT**

If a certified inspector changes his/her place of employment, he/she may be required to prove his/her ability to correctly operate the testing equipment at such vehicle inspection station, and may be required to take a complete written examination. The inspection station owner will notify the DPS representative supervising the station within three working days of a change of employment of inspectors at the station.

## **CHAPTER 18: PUBLIC INFORMATION AND CONSUMER PROTECTION**

### **18.1 PUBLIC AWARENESS PLAN**

The commission and the DPS have established a public awareness plan in order to increase public awareness and public acceptance of the I/M program. The implementation of the plan is ongoing. The plan addresses the following educational strategies:

- (1) significance of the air quality problem;
- (2) requirements of federal and state law;
- (3) roles of motor vehicles in the air quality problem;
- (4) benefits of an emissions inspection program;
- (5) steps to maintaining a vehicle in a low emissions condition;
- (6) steps to finding a qualified repair technician;
- (7) requirements of the I/M program; and
- (8) any other functions as determined by the commission and/or DPS.

### **18.2 VEHICLE INSPECTION REPORT (VIR)**

Each motorist receives a VIR at the completion of each emissions inspection. The report presents a Pass/Fail status for each pollutant tested, the inspector's identification number, whether it was an initial test or retest, and information on applicable warranty protection. In addition, the vehicle owner or driver is provided with a computer-generated record of test results, including all of the items listed in 40 CFR part 85, subpart W as being required on the test record.

### **18.3 VEHICLE REPAIR FORM (VRF)**

Repair information must be supplied before the vehicle is eligible for a free retest. The following information is required if applicable:

- (1) information identifying the Recognized Emission Repair Technician of Texas;
- (2) summary information corresponding to the emissions components serviced;
- (3) cost of parts, labor and diagnostics; and
- (4) repair technician recommended repairs that were not performed.

### **18.4 GENERAL REPAIR INFORMATION**

Motorists with vehicles failing an emissions inspection are offered information by the inspector on the following topics:

- (1) list of repair facilities in the area;
- (2) information on the results of repairs performed by repair facilities in the area;
- (3) diagnostic information; and
- (4) warranty repair information.

### **18.5 REPAIR INDUSTRY PERFORMANCE STATISTICS**

Performance monitoring statistics are available to motorists whose vehicles fail the I/M emissions test.

### **Consumer Protection Provisions**

The DPS institutes procedures and mechanisms to protect the public from fraud and abuse by inspectors, mechanics, and others involved in the I/M program.

### DPS Challenge Facilities

DPS provides challenge/referee facilities. A motorist whose vehicle fails an emissions inspection may challenge the findings at a DPS challenge facility. DPS will track the number and results of all challenge tests. If the vehicle passes its challenge retest, the motorist will be issued a vehicle emissions certificate indicating the passing status of the vehicle. If the certificate is issued by the station who performed the initial test no fee will be assessed for the second emissions test if the test is obtained within 15 days of the original emissions inspection. An emission testing facility that produces excessive challenge retests may be subjected to more frequent auditing.

### The DPS Oversight

(1) Audits - Covert audits (at least one per year per number of FTE inspectors) and overt audits (at least two per year per certified analyzer) are performed at emissions inspection facilities as part of the DPS oversight process. Auditors will check for proper operation of equipment and accurate record keeping practices. Failure of audits may result in additional training requirements, fines, and loss of inspection/certification authority. Audit procedures are defined under the Quality Assurance section.

(2) System Calibration Surveillance - DPS maintains a program of surveillance to verify that emissions inspection stations are performing required emissions tests using properly calibrated and correctly functioning equipment. Methods of surveillance:

(a) any emissions inspection station will be available at any reasonable time for a check by the DPS for the calibration and proper operation of all equipment;

(b) any documentation necessary to enable the DPS to perform calibration checks will be available at all times at each station;

(c) any defective condition which would adversely affect the accuracy of tests performed will be corrected immediately; and

(d) if so ordered by the DPS, the equipment affected by such a defective condition will not be used to perform vehicle inspections until objective evidence is submitted that the defective condition has been corrected.

(3) Technician Monitoring - Technician Performance Monitoring that tracks the effectiveness of repairs performed by repair technicians has been implemented. Performance Monitoring is available to the public (and the technicians) with objective information on the performance of repair facilities.

### Whistle Blower's Protection

The consumer protection provisions provide mechanisms for protecting whistle blowers and following up on complaints by the public or others involved in the process. Whistle Blowers protection is described in the following subsection, Complaint Handling Procedures.

### Complaint Handling Procedures

DPS is responsible for promptly addressing and appropriately resolving motorist complaints and requests for information. The vehicle emissions inspection station owner and/or manager is responsible for resolving complaints about damage to vehicles being tested and complaints about rude and/or incompetent employees. The DPS is responsible for developing a plan describing the types of complaints for which the DPS and the station owners and/or managers are separately responsible.

The DPS keeps a computerized record of phone-in and written complaints and generates complaint reports upon request. If complaints are sustained, the vehicle emissions inspection station involved may be penalized. Emissions Inspectors that receive repeated sustained complaints may be subject to further sanctions.

### Warranty Repair Assistance

Emissions inspection stations will be generally aware of warranty coverage that is available to motorists. The emissions inspection technician or an emissions inspection brochure relays this information to a motorist whose vehicle fails an emissions inspection. Warranties may be available from automobile dealerships or parts manufacturers. For vehicles beginning with model year 1995, there are two emission control warranties, the Performance Warranty and the Design and Defect Warranty:

(1) The Performance Warranty covers repairs which are required during the first 2 years or 24,000 miles of vehicle use because the vehicle failed an emission test. This warranty covers any repair or adjustment necessary to make the vehicle pass an approved, locally-required emission test and as long as the vehicle has not exceeded the warranty time or mileage limitations and has been properly maintained according to the manufacturer's specifications.

(2) The Design and Defect Warranty covers repairs of emission related parts which become defective during the warranty period as follows: (1) Emission control and emission related parts are covered for the first 2 years or 24,000 miles of vehicle use and (2) Specified major emission control components are covered for the first 8 years or 80,000 miles of vehicle use. An emission control part is any part installed with the primary purpose of controlling emissions. An emission related part is any part that has an effect on emissions. Major emission control components include the Catalytic converters, Electronic Emissions Control Unit or Computer (ECU) and the OBD device or computer.

## **CHAPTER 19: IMPROVING REPAIR EFFECTIVENESS**

### **19.1 BACKGROUND**

Repair effectiveness is defined as the ability to detect, analyze, and adequately repair an emissions related problem following the failure of a motor vehicle emissions inspection. 40 CFR §51.369 specifically states that an acceptable repair effectiveness program must include technical assistance, performance monitoring, and repair technician training.

Technical assistance involves closely communicating with the repair community and providing information regarding technical assistance hotline services. Performance monitoring utilizes statistics to track conforming and nonconforming repairs, repair methods, and repair technicians and/or facilities.

Before engaging in emissions related repairs, all repair technicians should provide an emissions repair vehicle diagnosis to the motorist. An emissions repair diagnosis is a list of recommended repairs and an estimated cost breakdown to correct vehicle emissions failures. At the motorist's discretion, any repairs they believe to be unnecessary may be excluded. However, the motorist is ultimately responsible for additional emissions related repair expenses if the vehicle fails its emissions retest and does not qualify for a waiver.

### **19.2 TECHNICAL ASSISTANCE PLAN**

Emissions test results for failed vehicles will be stored on the VID and be readily accessible to both inspection stations and other repair facilities. Until a failed vehicle passes an emissions retest, inspection stations and other repair facilities will be able to electronically obtain the test results for that vehicle if the station maintains the following:

- (1) DPS Certified Gas Analyzer; and
- (2) Contract with the for Texas Data Link System contractor.

Timely emissions inspection program information is distributed through a periodic newsletter to inspection stations, vehicle repair facilities, and Recognized Emission Repair Technicians of Texas. DPS informs repair facilities of changes to the inspection program, training course schedules, common problems and potential solutions for particular engine families, diagnostic tips, repairs, and other technical assistance issues. As time and resources permit, this information may be made available via electronic means to inspection stations, repair facilities, and Recognized Emission Repair Technicians of Texas.

The periodic newsletter contains contact information for any technical assistance hotline service that wishes to be listed. Repair technicians seeking specific repair advice are free to utilize any of the several commercial technical assistance hotline services at their own expense. In order to be included on this list of commercial technical assistance hot line services, the service must:

- (1) be available via a toll-free number during normal business hours;
- (2) be able to provide emissions repair information for a large cross-section of gasoline-powered motor vehicles dating from the present, and back to model year 1970;
- (3) be able to provide emissions repair advice which could be used by a technician in the repair of a vehicle that has failed either a steady-state or transient emissions test; and
- (4) be able to answer questions related to the legal requirements of state and federal law with regard to emission control device tampering, engine switching, or similar issues.



### **19.3 PERFORMANCE MONITORING**

Emissions inspection and repair information for tested vehicles in each nonattainment area is recorded and maintained by the VID. To the maximum extent possible, the VID is utilized to automate the collection of repair data provided prior to the emissions retest from individual inspection stations and repair facilities. However, the DPS may utilize other paper-based methods for the reporting of repair data from motorists and repair facilities not equipped with computers that are connected to the VID. The vehicle repair form (VRF) includes but not necessarily be limited to:

- (1) vehicle repairs actually performed;
- (2) vehicle repairs which were recommended but not performed; and
- (3) the identity of the facility performing the repairs.

At a minimum, performance monitoring includes the following criteria for each repair facility:

- (1) the number of vehicles receiving a retest after repair;
- (2) the percentage of vehicles passing the first retest;
- (3) the percentage of vehicles requiring more than one retest before passing; and
- (4) the percentage of vehicles receiving a waiver.

The DPS has implemented a system for providing feedback, including qualitative and statistical information, to individual repair facilities on a regular basis (at least annually) regarding their success in repairing failed vehicles. The feedback report lists the repair success rate for the facility based on repair information collected.

### **19.4 REPAIR TECHNICIAN TRAINING**

If experience with I/M program operation indicates that motorist demand for qualified technicians is not being satisfied, the DPS will take steps to ensure that adequate technician training resources are available to the repair community. As part of this process, the DPS may assess both current curricula and future improvements in the program for inclusion in the following areas:

- (1) diagnosis and repair of malfunctions in computer controlled, closed loop vehicles;
- (2) the application of emissions control theory and diagnostic data to the diagnosis and repair of failures on steady-state emissions tests, transient emissions tests, and/or the evaporative system functional checks; and
- (3) general training on the various subsystems related to engine emissions control.

### **19.5 RECOGNIZED EMISSIONS REPAIR TECHNICIAN REQUIREMENTS**

Technicians wishing to apply for DPS emissions repair recognition must have at least three years of work experience and possess current ASE certification in the categories of:

- (1) Engine Repair, ASE Test A1;
- (2) Electrical/Electronic systems, ASE Test A6;
- (3) Engine Performance, ASE Test A8; and
- (4) Advanced Engine Performance Specialist, ASE Test L1.

## **CHAPTER 20: COMPLIANCE WITH RECALL NOTICES**

The commission will comply with the policies of the National Recall Committee and additional EPA rulemaking or guidance as it becomes available.

After a data base is supplied by EPA, and if required by EPA Final Rule and/or guidance, the DPS will establish the following methods to verify whether a vehicle subject to the I/M program and that is included in either a "Voluntary Emissions Recall" or a remedial plan determination pursuant to the FCAA has had the appropriate repairs made prior to inspection. Emissions testing stations will have electronic means to identify recalled vehicles with unresolved recalls based on lists of VINs. These lists will be approved by the executive director on a quarterly basis. Recall data will be obtained from a supplier identified by EPA, and will consist of the VIN, the numbers of the recall campaign(s), and the date(s) that the repairs were performed. The Texas Data Link System contractor will supplement the VID to automatically flag the vehicle as noncompliant. The supplemental data will include the VIN, vehicle make and model year, the recall campaign number, and date of repair. Therefore, vehicles with unresolved recalls will automatically be identified as noncompliant when they show up for testing.

By July 31 of each calendar year, the commission will submit an annual report to EPA, covering the previous calendar year (January 1 to December 31), providing the following information:

- (1) the number of vehicles in each nonattainment area initially listed as having unresolved recalls, segregated by recall campaign number;
- (2) the number of listed vehicles brought into compliance by owners;
- (3) the number of listed vehicles with unresolved recalls, which as of the end of the calendar year, were not yet due for inspection;
- (4) the number of listed vehicles still in noncompliance that failed inspection on the basis of noncompliance with recall; and
- (5) the number of listed vehicles that are otherwise not in compliance.

## CHAPTER 21: ON-ROAD TESTING

### 21.1 IDENTIFICATION OF PROBABLE HIGH-EMITTING VEHICLES

The DPS is utilizing remote sensing technology to identify vehicles operating within the I/M program areas that have a high probability of being high-emitters. For this purpose, the DPS is focusing on the following categories of vehicles:

- (1) probable high-emitting vehicles commuting from surrounding counties that are not participating in the I/M program which are identified operating within Harris County; and
- (2) probable high-emitting vehicles which are registered within the subject counties but are not complying with periodic testing requirements in the I/M program areas.

Vehicles are identified by means of a license plate recognition system which forms an integral part of the remote sensing testing process. The residence of the vehicle owner is identified by obtaining the address corresponding to the license plate in the Texas vehicle registration data base. The DPS uses one or more of the following factors to develop appropriate high-emitter screening criteria:

- (1) measured tail pipe CO level;
- (2) measured tail pipe HC level;
- (3) measured tail pipe NO<sub>x</sub> level;
- (4) measured vehicle speed;
- (5) measured vehicle acceleration;
- (6) measured engine operating temperature (if available);
- (7) number of times a unique vehicle is identified above specific CO, HC, or NO<sub>x</sub> levels; and
- (8) length of time between multiple high measurements taken on the same vehicle.

Appropriate combinations of one or more of these factors plus additional approved methods (e.g., profiling) will be used to ensure the highest possible confidence level that the identified vehicle is a high-emitter. The DPS uses appropriate screening criteria based on the best information available at the time .

### 21.2 VEHICLE COVERAGE SUMMARY

In order to satisfy the overall coverage requirements of the FCAA to the HGA program area, vehicles operating in the subject urbanized areas that are owned by persons who reside in surrounding counties that do not participate in the I/M program (commuters) must be accounted for by a vehicle emissions identification and repair process. Based on the 1990 U.S. Census figures below, there are approximately 83,652 persons in the Houston urbanized area that live in counties surrounding Harris County and operate vehicles in the urbanized area. These persons are estimated to own and operate 64,692 vehicles in the Houston urbanized area. In order to meet these coverage requirements in Harris County without placing an undue burden on any one of the seven surrounding counties, the DPS will use remote sensing to identify a sufficient number of high-emitting commuting vehicles that are contributing to the overall mobile source pollution problem.

Of all the vehicles scanned with remote sensing, the DPS plans to recruit and conduct follow-up verification tests on 6% of the total commuting vehicles identified as high-emitters in each urbanized area, estimated to be no more than 3,881 vehicles in the Houston urbanized area. These numeric targets are subject to change based on both program experience and the use of revised information as it becomes available.

**HOUSTON AREA**

	<b>Subject Counties</b>	<b>Surrounding Counties</b>	<b>Total</b>
<b>1990 US Census Population</b>	<b>2,818,199</b>	<b>912,932</b>	<b>3,731,131</b>
<i>Light-Duty Vehicle &amp; Truck Population</i>	2,048,882	706,018	2,754,900
<i>Vehicles/Persons Ratio</i>	72.70%	77.34%	73.84%

**COMMUTING VEHICLE COVERAGE SUMMARY**

	<b>Houston Area</b>
<i>1990 US Census Urbanized Area Population</i>	2,901,851
<i>1990 US Census Subject County Population</i>	2,818,199
<i>Required Additional Population Coverage</i>	83,652
<i>Commuting Vehicles/Persons Ratio (from surrounding counties)</i>	77.3%
<i>Required Commuting Vehicle Coverage</i>	64,692

In addition to the coverage requirements described above for commuting vehicles, the DPS plans to use remote sensing to evaluate the on-road emissions performance of at least 20,000 of the vehicles subject to emissions testing in the DFW I/M program area and Harris and El Paso counties.

**21.3 VERIFICATION TESTING REQUIREMENTS**

Each registered owner of a vehicle in the I/M program area which meets the subject high-emitter identification criteria will be mailed a notification letter informing him/her that the vehicle has a high probability of being a high-emitter. The notification letter may require the owner to have the vehicle inspected and, if necessary, repaired to ensure compliance with emissions standards. As with the normal testing process, any vehicle which fails this inspection will be required to have repairs performed which bring it into compliance with applicable emissions standards; compliance will be verified by means of a required emissions retest. If necessary, waivers can be issued to vehicles which have begun the testing process as a result of high-emitter identification through remote sensing.

Failure to comply with the requirements of the notification letter may result in the issuance of a citation against the owner of the vehicle. This citation includes progressive penalties that may escalate to a maximum of \$1,000.00 per offense for the continuance of non-compliance. If the vehicle fails to comply within 30 days, the vehicle will be flagged in the TxDOT registration database, and the vehicle will be denied re-registration until the vehicle is in compliance with the I/M program.

All vehicles identified as high-emitters which are registered in the I/M program area will be cross-referenced with the Texas vehicle registration and emissions testing data base. The categories of probable high-emitting vehicles that will not be mailed notification letters include, but are not limited to:

- (1) any subject vehicle which has received a waiver during the most current test cycle or is operated under the provision of a DPS approved time extension;
- (2) any subject vehicle which is scheduled to receive its next emissions inspection within 30 days; and
- (3) other appropriate categories as determined by the DPS.

**21.3 PROGRAM FUNCTIONS AND RESPONSIBILITIES**

Through means of a competitive bid process, remote sensing contractor(s) will be selected to collect, analyze, and report on-road emissions testing data to the DPS. The remote sensing contractor(s) will be required to employ sufficient staff to satisfactorily perform these functions in meeting the vehicle coverage requirements of the oversight agency. The DPS employs sufficient staff both to oversee contractor functions and to coordinate with various state agencies and local government entities. Through cooperation with local transportation and law enforcement officials, applicable sites will be selected in the core I/M program area for collection of remote sensing data.

## CHAPTER 22: STATE IMPLEMENTATION PLAN SUBMISSION

The State will meet the following schedule:

<u>Activity</u>	<u>Date</u>
Passage of enabling statutory authority for emissions program (Senate Bill 1856)	6/19/1997
Issuance of final requests for offers on the Texas Data Link Project	Completed
Proposal of draft commission regulations	02/28/96
Issuance of final specifications of the Two Speed Idle Test	11/01/99
Adoption of final commission regulations	05/29/96
Final DPS Rules	04/24/98
Issuance of EPA's final specifications on the ASM Loaded Test	06/26/96
Issuance of Texas ASM Specifications	11/01/99
Passage of enabling statutory authority making non-compliance with the I/M program a Class B & C Misdemeanor	06/19/97
Passage of enabling statutory authority to implement additional enforcement authority to DPS	06/19/97
Analysis of data for program evaluation to meet the NHSDA of 1995 requirements	02/08/99
On-Board Diagnostic (OBD) II testing	01/01/01
<b>DFW Program Area</b>	
Certified Stations on line, phase I	07/31/96
Texas Data Link System project completed	09/01/96
Certified stations on line, phase II	10/31/96
Full-stringency cut points	01/01/97
Certify 12 counties (Dallas, Tarrant, Collin, Denton, Parker, Hood, Johnson, Ellis, Henderson, Kaufman, Rockwall, and Hunt) on line with ASM	01/01/01

Incorporate OBD Testing

01/01/01

**Harris County**

Texas Data Link System project completed	09/01/96
Certified stations on line	12/31/96
Emissions testing start date	01/01/97
Full-stringency cut points	01/01/97
Incorporate OBD Testing	01/01/01

**El Paso County**

Texas Data Link System project completed	09/01/96
Certified stations on line	12/31/96
Emissions testing start date	01/01/97
Full-stringency cut points	01/01/97
Incorporate OBD Testing	01/01/01

TECHNICAL SUPPLEMENT

THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION (TNRCC) MODELING  
ANALYSIS OF THE TEXAS INSPECTION/MAINTENANCE PROGRAM

## TECHNICAL SUPPLEMENT

### INSPECTION/MAINTENANCE (I/M) PERFORMANCE STANDARDS FOR LOW ENHANCED PROGRAM AREAS (EPA Flexibility Amendments)

#### (A) Overview

The TNRCC commits to implementing an I/M program which meets or exceeds the minimum emission reductions required in the low enhanced performance standard (EPA Flexibility Amendments) promulgated on September 18, 1995. A performance standard is the targeted motor vehicle emission reduction generated from specific I/M program input parameters (design elements) using EPA's current MOBILE emissions factor computer model. The most recent computer modeling performed for the TNRCC indicates that the proposed I/M program meets or exceeds the required I/M performance standard for the applicable air pollutants. This version of the Technical Supplement includes modeling inputs, procedures and results based on updated information regarding the I/M programs in the three nonattainment areas. This Technical Supplement revises the information provided in an earlier document dated February 29, 1996.

A state is required to meet or exceed the applicable performance standard for any I/M non-attainment area. The DFW, Houston/Galveston, and El Paso non-attainment areas are required to implement low enhanced I/M programs. The low enhanced performance standards are less stringent than the enhanced performance standard and, thus, provide greater I/M program parameter flexibility. However, if one input parameter for a proposed I/M program design is more lax than the applicable performance standard parameter, the proposed I/M program design must compensate by being more restrictive in another input parameter in order to meet the performance standard. The Texas I/M Program design is an equilibrium of the applicable performance standard parameters and compensations.

The I/M program areas have been modeled using EPA's MOBILE5a\_H emissions factor model. For each program area, we have provided the emissions factor for the EPA low enhanced performance standard and the emissions factor for the area's I/M program commitment for each pollutant and applicable evaluation year.

Local parameters used in the MOBILE5a\_H input include data collected on a county-wide basis. Modeling for all program areas included use of class B volatility gasoline. No refueling emissions were modeled for I/M program purposes since they are considered to be area (stationary source, not mobile source) emissions in the TNRCC inventory. Modeling for the program areas also included a technician training component. Waiver-qualified repairs must be performed by Recognized Emission Repair Technicians whose qualifications are provided in the I/M program description preceding this section. January evaluation dates have been used to approximate milestones or deadlines occurring the previous November.

I/M programs subject to the low enhanced I/M performance standard will be shown to obtain the same or lower emission levels as the model program described in the low enhanced I/M performance standard by 2000 for ozone nonattainment areas and 2001 for CO nonattainment areas, and for severe and extreme nonattainment areas, on each applicable milestone and attainment deadline, thereafter. Since El Paso is serious nonattainment for ozone and moderate nonattainment for CO, the earlier evaluation date requirement of 2000 has been used. Evaluation dates of 2000, 2003, 2006, and 2008 have been used for the Houston/Galveston area since it is a severe ozone nonattainment area. DFW is a serious ozone

nonattainment area; therefore, the required evaluation date of 2000 has been modeled. In addition, evaluation dates of 2003, 2006, and 2008 have been modeled to further demonstrate that the DFW area continues to meet the performance standard after the I/M program switches to an ASM-2 test in January 2001. The modeling analysis explanations below will have three sets of I/M program parameters (one specific to each nonattainment area). The revised DFW I/M program will be implemented in Dallas, Tarrant, Denton, Collin, Ellis, Henderson, Hood, Hunt, Johnson, Kaufman, Parker, and Rockwall counties. However, only Dallas, Tarrant, Denton, and Collin counties require modeling to demonstrate that the applicable performance standard is met.

## (B) Modeling Analysis for Low Enhanced I/M Programs

### (1) Network Type

#### (a) Performance Standard

A state must model the performance standard for each low enhanced I/M program area using a test-only (centralized) I/M network design.

#### (b) Houston/Galveston Program Area

The I/M program is a decentralized program composed of test-only and test-and-repair facilities. On August 20, 1999, EPA published Additional Flexibility Amendments to Vehicle Inspection Maintenance Program Requirements; Proposed Amendment to the Final Rule. In this proposed rule, Section 51.353(b) pertaining to an automatic effectiveness credit discount for decentralized test-and-repair networks was deleted. For this reason, we have modeled the I/M program with the assumption of a “centralized network” so that the automatic discount would not be applied by the model and 100% effectiveness credit would be given.

#### (c) DFW Program Area

The I/M program is a decentralized program composed of test-only and test-and-repair facilities. On August 20, 1999, EPA published Additional Flexibility Amendments to Vehicle Inspection Maintenance Program Requirements; Proposed Amendment to the Final Rule. In this proposed rule, Section 51.353(b) pertaining to an automatic effectiveness credit discount for decentralized test-and-repair networks was deleted. For this reason, we have modeled the I/M program with the assumption of a “centralized network” so that the automatic discount would not be applied by the model and 100% effectiveness credit would be given.

#### (d) El Paso Program Area

The I/M program is a decentralized program composed of test-only and test-and-repair facilities. On August 20, 1999, EPA published Additional Flexibility Amendments to Vehicle Inspection Maintenance Program Requirements; Proposed Amendment to the Final Rule. In this proposed rule, Section 51.353(b) pertaining to an automatic effectiveness credit discount for decentralized test-and-repair networks was deleted. For this reason, we have modeled the I/M program with the assumption of a “centralized network” so that the automatic discount would not be applied by the model and 100% effectiveness credit would be given.

### (2) Start Date

#### (a) Performance Standard

A state must model the performance standard for each low enhanced I/M program area with a start date of 1983 for any non-attainment area having an existing I/M program; otherwise, a start date of 1995 applies toward any non-attainment area with a newly subject I/M program.

The Houston/Galveston Area performance standard was modeled with an I/M program start date of 1995 and an ATP start date of 1983. For the DFW Area performance standard, Dallas and Tarrant counties were modeled with an I/M program and ATP start date of 1983, and Denton and Collin were modeled with an I/M program start date of 1995 and an ATP start date of 1983. The El Paso Area performance standard was modeled with an I/M program start date ATP start date of 1983.

(b) Houston/Galveston Program Area

The I/M program in Harris county was modeled with a start date of 1997 and the ATP with a start date of 1984.

(c) DFW Program Area

For Dallas and Tarrant counties, the I/M program was modeled with a start date of 1990 and the ATP with a start date of 1986. For Denton and Collin counties, the I/M program was modeled with a start date of 2001 and the ATP with a start date of 1990.

(d) El Paso Program Area

The I/M program for El Paso county was modeled with a start date of 1987 and the ATP with a start date of 1986.

(3) Test Frequency

(a) Performance Standard

A state must model the performance standard for each low enhanced I/M program area with an annual emission inspection frequency.

(b) Houston/Galveston Program Area

The I/M program in Harris county will be an annual emissions inspection.

(c) DFW Program Area

The I/M program will be an annual emissions inspection.

(d) El Paso Program Area

The I/M program will be an annual emissions inspection.

(4) Model Year Coverage

(a) Performance Standard

A state must model the performance standard for each low enhanced I/M program area with an emissions inspection of 1968 and newer model year vehicles.

(b) Houston/Galveston Program Area

Vehicle coverage for the I/M program in Harris county is based upon a 24-year rolling window from the year in which the test is being performed with an exemption from testing for the 2 newest model years.

(c) DFW Program Area

Vehicle coverage for the I/M program is based upon a 24-year rolling window from the year in which the test is being performed with an exemption from testing for the 2 newest model years.

(d) El Paso Program Area

Vehicle coverage for the I/M program is based upon a 24-year rolling window from the year in which the test is being performed with an exemption from testing for the 2 newest model years.

(5) Vehicle Type Coverage

(a) Performance Standard

A state must model the performance standard for each low enhanced I/M program area for light-duty vehicles and light-duty trucks (types 1 and 2).

(b) Houston/Galveston Program Area

The I/M program in Harris county includes gasoline powered light-duty vehicles, light-duty trucks (types 1 and 2), and heavy-duty gasoline vehicles. Motorcycles are excluded from emissions inspection requirements.

(c) DFW Program Area

The I/M program includes gasoline powered light-duty vehicles, light-duty trucks (types 1 and 2), and heavy-duty gasoline vehicles. Motorcycles are excluded from emissions inspection requirements.

(d) El Paso Program Area

The I/M program includes gasoline powered light-duty vehicles, light-duty trucks (types 1 and 2), and heavy-duty gasoline vehicles. Motorcycles are excluded from emissions inspection requirements.

(6) Exhaust Emissions Test Type

(a) Performance Standard

A state must model the exhaust emissions test type in the performance standard for each low enhanced I/M program as an idle exhaust emissions test (as described in Appendix B of Subpart S of EPA's final I/M rule.)

(b) Houston/Galveston Program Area

The exhaust emissions test type for the I/M program in Harris county is a steady-state preconditioned two-speed idle exhaust emissions test. . Beginning in January 2001, an OBD test will be conducted on 1996 and newer model year vehicles in Harris county. However, the OBD test could not be included in the modeling because EPA has not yet released any written guidance on how to model an OBD test using MOBILE5.

(c) DFW Program Area

The exhaust emissions test type for the DFW Area I/M program consists of a steady-state preconditioned two-speed idle exhaust emissions test in Dallas and Tarrant counties only until January 2001. Beginning in January 2001, the I/M program will consist of an ASM-2 test on pre-1996 model year vehicles and an OBD test on 1996 and newer model year vehicles in Dallas, Tarrant, Denton, Collin, Ellis, Henderson, Hood, Hunt, Johnson, Kaufman, Parker, and Rockwall counties. However, the OBD test could not be

included in the modeling because EPA has not yet released any written guidance on how to model an OBD test using MOBILE5.

(d) El Paso Program Area

The exhaust emissions test type for the I/M program in El Paso county is a steady-state preconditioned two-speed idle exhaust emissions test. Beginning in January 2001, an OBD test will be conducted on 1996 and newer model year vehicles. However, the OBD test could not be included in the modeling because EPA has not yet released any written guidance on how to model an OBD test using MOBILE5.

(7) Emission Standards

(a) Performance Standard

Modeling the performance standard for emission standards requires cutpoints no weaker than specified in 40 CFR Part 85, Subpart W (steady-state exhaust emission testing) for 1981 and newer model year light-duty vehicles and light-duty trucks.

(b) Houston/Galveston Program Area

The emission standards in the I/M Program for steady-state exhaust emission testing are 220 parts per million (ppm) of hydrocarbon (HC) and 1.2 percent CO in accordance with 40 CFR Part 85, Subpart W.

(c) DFW Program Area

The emission standards in the I/M Program for steady-state exhaust emission testing are 220 parts per million (ppm) of hydrocarbon (HC) and 1.2 percent CO in accordance with 40 CFR Part 85, Subpart W. The emission standards in the I/M program for the ASM-2 test are EPA's phase-in 25/25-50/15 combination default standards.

(d) El Paso Program Area

The emission standards in the I/M Program for steady-state exhaust emission testing are 220 parts per million (ppm) of hydrocarbon (HC) and 1.2 percent CO in accordance with 40 CFR Part 85, Subpart W.

(8) Emissions Control Device Inspections

(a) Performance Standard

Modeling of the low enhanced performance standard requires a visual inspection of the PCV on all 1968 through 1971 model year vehicles, inclusive, and of the EGR valve on all 1972 and newer model year vehicles.

(b) Houston/Galveston Program Area

The emissions control device inspection for the Houston/Galveston program area includes a visual inspection of the EGR system, evaporative emission control system, gas cap, PCV system, thermostatic air cleaner, and the air injection system (smog pump) for all model year vehicles. A visual inspection of the catalyst will be performed for model year vehicles 1984 and newer.

(c) DFW Program Area

The emissions control device inspection for the I/M program includes a visual inspection of the EGR system, evaporative emission control system, gas cap, PCV system, thermostatic air cleaner, and the air

injection system (smog pump) for all model year vehicles. A visual inspection of the catalyst will be performed for model year vehicles 1984 and newer.

(d) El Paso Program Area

The emissions control device inspection for the I/M program includes a visual inspection of the EGR system, evaporative emission control system, gas cap, PCV system, thermostatic air cleaner, and the air injection system (smog pump) for all model year vehicles. A visual inspection of the catalyst will be performed for model year vehicles 1984 and newer.

(9) Evaporative System Function Checks

(a) Performance Standard

No evaporative system function checks are required when modeling the performance standard for low enhanced I/M programs.

(b) Houston/Galveston Program Area

The evaporative system function check performed in the Houston/Galveston program area is a gas cap system integrity test for all model year vehicles two years old and older. 40% of the pressure test credit is taken for this check per EPA guidance.

(c) DFW Program Area

The evaporative system function check included in the I/M program is a gas cap system integrity test for all model year vehicles two years old and older. 40% of the pressure test credit is taken for this check per EPA guidance.

(d) El Paso Program Area

The evaporative system function check included in the I/M program is a gas cap system integrity test for all model year vehicles two years old and older. 40% of the pressure test credit is taken for this check per EPA guidance.

(10) Stringency

(a) Performance Standard

Modeling of the low enhanced I/M performance standard requires a 20% emissions test failure rate among pre-1981 model year vehicles.

(b) Houston/Galveston Program Area

Modeling of the I/M program in Harris county includes a 20% emissions test failure rate among pre-1981 model year vehicles.

(c) DFW Program Area

Modeling of the I/M program includes a 20% emissions test failure rate among pre-1981 model year vehicles.

(d) El Paso Program Area

Modeling of the I/M program includes a 20% emissions test failure rate among pre-1981 model year vehicles.

(11) Waiver Rate

(a) Performance Standard

The low enhanced performance standard includes a 3% waiver rate provision for modeling purposes.

(b) Houston/Galveston Program Area

The waiver rate for the I/M program in Harris county provides a 3% waiver rate.

(c) DFW Program Area

The waiver rate for the I/M program provides a 3% waiver rate.

(d) El Paso Program Area

The waiver rate for the I/M program provides a 3% waiver rate.

(12) Compliance Rate

(a) Performance Standard

Modeling the performance standard requires a 96% compliance rate of the covered vehicles in an I/M program.

(b) Houston/Galveston Program Area

The I/M program in Harris county is modeled with a compliance rate of 96%.

(c) DFW Program Area

The I/M program is modeled with a compliance rate of 96%.

(d) El Paso Program Area

The I/M program area is modeled with a compliance rate of 96%.

(13) Evaluation Date

(a) Performance Standard

Modeling the performance standard for a low enhanced I/M program requires an evaluation date of 2000 for ozone non-attainment areas and 2001 for CO non-attainment areas. For severe ozone non-attainment areas, an evaluation date of 2000 and each applicable milestone and attainment deadline thereafter is required.

(b) Houston/Galveston Program Area

The I/M program in Harris county is modeled with evaluation dates of 2000, 2003, 2006, and 2008 since the Houston/Galveston area is severe nonattainment for ozone.

(c) DFW Program Area

The I/M program for Dallas and Tarrant counties is modeled with the required evaluation date of 2000 since the DFW area is serious nonattainment for ozone. However, since the test type will be switched from a two-speed idle to an ASM-2 test in January 2001, we also modeled evaluation dates 2003, 2006, and 2008 for Dallas, Tarrant, Denton, and Collin counties to demonstrate that the area continues to meet the performance standard after the program change in 2001.

(d) El Paso Program Area

Since El Paso is serious nonattainment for ozone and moderate nonattainment for CO, the I/M program is modeled with the earlier required evaluation date of 2000.

(C) MOBILE5a Summary Output Tables

TABLES 1- 4 reflect vehicle emissions reductions (in grams per mile) calculated by EPA's MOBILE5a-H computer model for the I/M program in each of the program areas.

TABLE 1. Aggregated Dallas/Tarrant County MOBILE5a\_H Output (g/mi)

January 2000	VOC	NO <sub>x</sub>	CO
Performance Std.	1.569	1.791	10.151
DFW Program	1.372	1.688	8.283

<u>January 2003</u>	<u>VOC</u>	<u>NO<sub>x</sub></u>	<u>CO</u>
<u>Performance Std.</u>	<u>1.419</u>	<u>1.671</u>	<u>9.399</u>
<u>DFW Program</u>	<u>1.156</u>	<u>1.334</u>	<u>6.648</u>

<u>January 2006</u>	<u>VOC</u>	<u>NO<sub>x</sub></u>	<u>CO</u>
<u>Performance Std.</u>	<u>1.329</u>	<u>1.615</u>	<u>9.119</u>
<u>DFW Program</u>	<u>1.065</u>	<u>1.275</u>	<u>6.276</u>

<u>January 2008</u>	<u>VOC</u>	<u>NO<sub>x</sub></u>	<u>CO</u>
<u>Performance Std.</u>	<u>1.286</u>	<u>1.588</u>	<u>9.022</u>
<u>DFW Program</u>	<u>1.020</u>	<u>1.250</u>	<u>6.140</u>

TABLE 2. Aggregated Denton/Collin County MOBILE5a\_H Output (g/mi)

<u>January 2003</u>	<u>VOC</u>	<u>NO<sub>x</sub></u>	<u>CO</u>
<u>Performance Std.</u>	<u>1.329</u>	<u>1.601</u>	<u>8.980</u>
<u>DFW Program</u>	<u>1.100</u>	<u>1.317</u>	<u>6.544</u>

<u>January 2006</u>	<u>VOC</u>	<u>NO<sub>x</sub></u>	<u>CO</u>
<u>Performance Std.</u>	<u>1.237</u>	<u>1.534</u>	<u>8.598</u>
<u>DFW Program</u>	<u>1.001</u>	<u>1.245</u>	<u>6.065</u>

<u>January 2008</u>	<u>VOC</u>	<u>NO<sub>x</sub></u>	<u>CO</u>
<u>Performance Std.</u>	<u>1.196</u>	<u>1.504</u>	<u>8.457</u>
<u>DFW Program</u>	<u>0.960</u>	<u>1.215</u>	<u>5.887</u>

TABLE 3. Aggregated El Paso MOBILE5a\_H Output (g/mi)

January 2000	VOC	NO <sub>x</sub>	CO
Performance Std.	2.91	2.22	23.28
El Paso Program	2.50	2.06	18.61

TABLE 4. Aggregated Harris County MOBILE5a\_H Output (g/mi)

January 2000	VOC	NO <sub>x</sub>	CO
Performance Std.	1.145	1.905	8.128
Houston/Galveston Program	0.987	1.789	6.464

January 2003	VOC	NO <sub>x</sub>	CO
Performance Std.	1.043	1.758	7.259
Houston/Galveston Program	0.887	1.636	5.670

January 2006	VOC	NO <sub>x</sub>	CO
Performance Std.	0.971	1.673	6.714
Houston/Galveston Program	0.815	1.550	5.168

January 2008	VOC	NO <sub>x</sub>	CO
Performance Std.	0.944	1.639	6.599
Houston/Galveston Program	0.788	1.516	5.062