

2.39. Liquidated Damages

The assessment of liquidated damages by the State against the Contractor does not supersede or affect the right of the State to impose other remedies available to it including, but not limited to, reductions in or withholding of payments to the Contractor, or imposition of monetary penalties.

In addition to any other remedies available to it in law or under the Contract, in the event that the Contractor fails to provide the services, equipment, or other items required under the Contract within the prescribed time limits, the State may elect to provide or obtain services, equipment, or other items necessary to perform under the Contract. In that event, the Contractor will pay the total cost incurred by the State for obtaining replacement services, equipment and other items necessary to perform a fully functional VEIP program. The State will have the unilateral right of source selection when the Contractor is unable to perform. In addition to the replacement costs described above, the Contractor will also be required to pay the liquidated damages set forth below for any delay or failure in performance as well as other related damages sustained by the State.

2.39.1. Initial System Transition of VEIP Stations

Time is of the essence for transition to the new VEIP program. In the event that the Contractor fails to complete the transition process from the existing program and commence the operation of the new VEIP program at all VEIP stations by the date determined by the Transition Plan agreed to by the MVA and the Contractor, damages will be sustained by the State. In such an event, the Contractor shall pay to the State, as liquidated damages, \$35,000 per calendar day for each day's delay beyond that date, including the day that operations commence.

In the event that the Contractor has failed to complete the transition process by the date determined by the Transition Plan, and work has been completed to a degree that would permit partial implementation of the new VEIP program, the MVA, in its sole discretion, may elect to give notice to the Contractor to proceed with partial operation. In such an event, however, damages will be sustained by the State to the extent that the program is not in full operation, and the Contractor shall pay to the State, as liquidated damages, \$425 per calendar day for each lane that is not in full operation beyond the required date, including the day that the lane operations commence.

2.39.2. Vehicle Wait Time – General Public VEIP Stations

Waiting time means the time period beginning upon the arrival of a vehicle at a public VEIP station to undergo the inspection procedures, and ending when the vehicle actually enters the inspection lane to begin the inspection procedures. Excessive wait time means an amount of time exceeding the maximum waiting time requirement of 15 minutes for 100% of all vehicles tested at each inspection station except when all lanes and test positions are operational and throughput per lane is at least that stated in Offeror's operational plan, as agreed to by MVA.

The MVA shall be entitled to assess and withhold from the Contractor's monthly management fee a liquidated damage amount for any hour, or part thereof, of test station operation during which the waiting time for a vehicle to be tested exceeds fifteen (15) minutes or more. When such a waiting time exceedance occurs during any business hour, the Contractor will be subject to assessment of liquidated damages in the amount of \$150 per hour or part thereof per station of occurrence. Separate (non-consecutive) one-hour exceedances during the same day at the same station will each be subject to assessment of these liquidated damages.

All such occurrences shall be documented by the MVA Station Representative or alternate method, including electronic monitoring of wait times. Actual assessment of waiting time liquidated damages per documented occurrence shall be the decision of the MVA. The MVA and the Contractor shall periodically review waiting time exceedances in conjunction with test lane throughput and equipment downtime per station.

Additionally, it is expected that the Contractor shall strive to keep vehicle waiting times at any station to a minimum. The State reserves the option, in an effort to accommodate its citizens, to issue test waivers when waiting times become excessive at any station. Should the State be required to place a vehicle(s) in test compliance as a result of excessive waiting times at any station, the State shall withhold from the Contractor's management fee \$25.00 for each vehicle placed into test compliance due to excessive waiting times.

2.39.3. Data Transfers

As specified in Section 6 of this RFP, the Contractor is required to transfer a daily batch update to the MVA of all vehicles inspected, reinspected, or issued a waiver, per a time schedule established by the MVA; a weekly transmission to MVA of all vehicles which were scheduled to be inspected or reinspected, which were not inspected or reinspected by the scheduled inspection or re-inspection date (i.e., the “no-show” list); and a daily transmission to the MDE of vehicle inspection records. If a data transfer is not performed on the date it is due, the Contractor will be assessed \$1,000 for each calendar day beyond the due date, including the day the required data transfer is performed.

6.11. Vehicle Test and Repair Data for Vehicle Repair Assistance

- 6.11.1.** The Contractor shall submit a Vehicle Test and Repair Data for Vehicle Repair Assistance Plan for providing vehicle specific information to the vehicle repair industry to facilitate the proper and complete repair of vehicles that fail an emissions test. This assistance program will include but not be limited to the elements listed in this section.
- 6.11.2.** The Contractor shall, upon request, make vehicle test results available via a web service to Certified Emission Repair Facilities (CERFs) and Master Certified Emissions Technicians (MCETs) seeking to repair a failed vehicle, including as applicable: information detailing the vehicle's overall emissions levels for the idle emissions test, the catalytic converter check result with the reason for failure, the results of the gas cap integrity test, and the results of the OBD test, with diagnostic trouble codes (DTCs).
- 6.11.3.** The Contractor shall make the information directly available to the repair industry by secured electronic means (i.e., web site), and at no charge to the requestor. The Contractor must commit to making the vehicle test and repair information available to five hundred (500) CERFs and one thousand five hundred (1,500) MCETs at a minimum. The electronic access from the Contractor to the CERFs and MCETs shall be convenient, standardized, secured, and approved by the MDE. The Contractor shall consider the repair industry needs and equipment in selecting a convenient and cost effective (to the repair industry) data exchange protocol. The Contractor shall be responsible for determining and keeping up with demand for data by electronic means.
- 6.11.4.** The Contractor shall collect all available vehicle repair data from motorists, repair technicians, and repair facilities. The Contractor shall implement methods, subject to approval by MVA and MDE, for collecting repair data, including scanning or transcription of motorist repair data at the VEIP Stations, and a web service to allow repair technicians to submit repair data electronically.
- The Contractor shall collect vehicle repair data from motorists at the VEIP Stations. Repair information will be submitted in paper format via the reverse side of the VEIC and repair receipts. The Contractor shall propose a method for collecting the motorist repair data by scanning, transcription, or other method.
 - The Contractor shall collect vehicle repair data electronically from CERFs and MCETs. The Contractor shall propose a method for collecting these data, through a web service to allow CERFs and MCETs to submit data electronically. The submittal of data by CERFs and MCETs will be voluntary, and may or may not be for a vehicle applying for a repair waiver. The Contractor may propose incentives to maximize the collection of the repair data.
- 6.11.5.** The repair data shall be maintained in a separate database, shall be linked with applicable test records, and shall include at a minimum:
- Vehicle plate number;
 - VIN;
 - VEIC number for the failed test;
 - Vehicle make;
 - Vehicle model;
 - Vehicle model year;
 - Vehicle class;

- Test type;
- Date and time of test;
- Name and identification of who performed the repairs (repair technician or motorist);
- Master Certified Emissions Technician number, if applicable;
- Certified Emissions Repair Facility number, if applicable;
- Repair facility name;
- Repair facility address;
- Repair facility telephone number;
- Emissions related repair costs, broken down into parts and labor;
- Emissions related repair categories (for illustrative purposes, existing repair categories include: Air Intake Management System, Fuel Management System, Air Injection System, Spark Management System, PCV System, EGR System, Engine Mechanical, Vehicle Fluids, Transmission System, Evaporative Control System, Catalytic Converter System, Powertrain Control Module, Gas Cap, MIL Command Status after OBD repairs); and
- Indication of whether all repairs recommended by the repair technician were performed.

6.11.6. The Contractor shall develop and provide quarterly summary reports of the collected repair data to MDE in a format to be approved by MDE.

6.11.7. The Contractor shall maintain all repair data on-line and provide access to MDE.

6.11.8. The Contractor shall provide a mechanism whereby MCETs and CERFs can update, in a secure fashion, their individual and facility information in the database. The system shall provide for automatic notification to MDE when updates are made, and for transmittal of the updated information to MDE.

6.11.9. The Contractor shall provide a mechanism for simplifying the process and minimizing required data entry on the part of the technicians and facilities. For example, entry of a CERF or MCET number will trigger automatic entry of related data elements.

6.11.10. The web service shall allow repair technicians to access the subsequent test records of vehicles they repaired, in order to track their repair success.

6.11.11. The Contractor shall propose a method to consolidate repair data submitted by motorists and repair facilities for the same vehicle, and to avoid duplication or double counting of the repair expenses when processing repair waiver requests.

6.12. Public Information

6.12.1. The Offeror shall provide with its Technical Proposal a Public Information Plan for communications with the public which will permit the public to obtain information directly from the Contractor including, but not limited to, the location of inspection stations, hours of operation, waiting times, and the overall purpose and impact of the VEIP in improving air quality. The Plan shall include:

- General discussion of creative deliverable options such as, but not limited to: use of mailing inserts included with test notices; radio spots; billboards; public service announcements; use of focus groups; and promotional events;

- A strategy and procedures whereby the public can obtain information regarding VEIP station locations, operating hours, holiday closures, and the purpose of the VEIP in improving Maryland's air quality;
- A strategy for motorist access via the internet to inspection results and repair data for their vehicle(s), as well as the next inspection due date;
- A strategy and procedures for notification of the public of changes in the program, including the change from IM240 to idle testing and other notifications required in transitioning to the new program;
- Provisions for the accommodation of media coverage and visits to VEIP test stations by members of the press, dignitaries, and other visitors;
- Procedures to measure and evaluate the effectiveness of public information activities;
- Provisions for informing the public regarding the Gaithersburg station closure and re-direction of motorists to other stations, which is an on-going requirement through at least one (1) full inspection cycle (2 years).

6.12.2. The Plan and all materials and messages to be used in the public information effort must be approved by the MVA and MDE. Upon approval by the MVA and MDE, the Contractor shall implement its Public Information Plan.

6.13. Data Management

6.13.1. Data Management Plan

- Each Offeror shall develop and submit with its Technical Proposal a detailed Data Management Plan, which must include a detailed description of all aspects of the Offeror's central data system, including software and hardware, and a schedule for implementing its data management solution. The Data Management Plan shall describe how the Contractor will meet the requirements specified in the RFP, and, at a minimum, describe how the proposed system will:
 - a. Connect VEIP Stations and inspection equipment to the central data system, and transmit required data between the central data system and these facilities;
 - b. Connect MVA offices to the central data system, and transmit required data between the central data system and the MVA vehicle registration database;
 - c. Connect MDE offices to the central data system, and transmit required data between the central data system and the MDE;
 - d. Connect all Fleet Inspection Stations (and future Remote Inspection Stations) to the data system, and transmit required data between the central data system and these facilities;

- e. Connect vehicle repair facilities to the central data system, and transmit required data between the central data system and these facilities;
 - f. Provide capabilities to allow authorized State personnel to access system databases and files for ad hoc data analysis and reporting purposes;
 - g. Provide standard daily, weekly, monthly, quarterly, and annual management reports;
 - h. Provide test monitoring and trigger reports;
 - i. Migrate and integrate legacy inspection data from the incumbent's database to the new Contractor's data system;
 - j. Meet the specific performance requirements and metrics described in this section;
 - k. Prevent the loss or corruption of data;
 - l. Minimize disruptions in service in the event of hardware or software failure;
 - m. Provide sufficient data backup and recovery systems to promptly reestablish normal system operations and service;
 - n. Employ measures and techniques to prevent unauthorized access to or use of the Offeror's data processing system;
 - o. Adhere to the State security and record retention requirements;
 - p. Perform hardware and software updates necessary to accommodate changes in program requirements and/or advances in technology, while maintaining continuity of operation of the VEIP;
 - q. Test and demonstrate hardware and software updates prior to network deployment; and
 - r. Provide comprehensive technical documentation for use by the State.
- The Contractor's Data Management Plan shall identify the tasks to be accomplished by the Contractor in order to transition and operate the data management system, a date-specific timetable for completing those tasks and obtaining approval from MVA/MDE, and the associated deliverable item(s) to be submitted as evidence of completion of each task and/or subtask.
 - The Contractor shall comply with Maryland Department of Budget and Management (DBM) Information Technology (IT) policies, standards, and guidelines (located at: <http://www.dbm.maryland.gov>). The Contractor must comply with all applicable laws, regulations, policies, standards, and guidelines affecting IT. It is the responsibility of the Contractor to ensure adherence to new or amended IT policies, standards, and guidelines affecting project execution. The Contractor will work with the MVA to determine other policies and guidelines, in addition to those listed on the

DBM website, requiring adherence.

- The Contractor must apply best practices in software development to the data system design, development, testing, deployment, and maintenance.
- The Contractor shall meet with the State to review its proposed solution to meeting the data system requirements. The Contractor and MVA/MDE shall work together to refine and revise, as needed, the Data Management Plan submitted in the bid proposal. The Contractor shall submit an updated Data Management Plan for MVA and MDE approval.
- After approval of the Contractor's Data Management Plan, the Contractor shall conduct detailed sessions with appropriate State staff to clarify the high level data management requirements. The Contractor shall prepare a Vehicle Inspection Database (VID) Requirements Document so that the requirements are sufficiently detailed, documented, and readily understandable. The VID Requirements Document must be approved by the MVA and MDE. Upon approval by MVA and MDE, the Contractor shall proceed with its solutions for meeting the data system requirements.

6.13.2. Data Communications

- All data sent from any of the Contractor's central data system to the MVA or MDE must be sent via an encrypted secure connection that meets the security requirements of the Maryland Department of Budget and Management.
- The Contractor must provide a web interface to the central data system that shall support both internal and external users.
- The Contractor shall establish primary and alternate Internet Virtual Private Network (VPN) connections from the new VEIP office facility it is providing under this contract to the MVA Glen Burnie Headquarters and MDOT Headquarters (7201 Corporate Center Drive, Hanover, Maryland 21076) facilities.
- The Contractor must electronically interface its central data system with the MVA ISC IBM mainframe and data communications network via a secure encrypted connection on the internet. Data transmission format requirements will be developed jointly by the Contractor and MVA prior to implementation..

6.13.3. Data Collection and Transfers

- MVA Registration Database Transactions
 - a. The Contractor shall process a weekly batch update from the MVA identifying vehicles receiving VEIP notices.
 - b. The Contractor shall provide for a daily batch update to the MVA of all vehicles inspected, reinspected (per location), or issued a waiver, per a time schedule established by the MVA.
 - c. The Contractor shall provide for a weekly transmission, with a frequency not to exceed seven (7) calendar days, of all vehicles which were scheduled to be

inspected or reinspected, and which were not inspected or reinspected by the scheduled inspection or re-inspection date (i.e.; the “no-show” list).

- d. The Contractor shall process a weekly batch update from the MVA identifying corrections to the “no-show” list.
- e. The Contractor shall process a weekly batch update from the MVA identifying vehicles granted extensions.
- VEIP Station Data Collection and Transfers
 - a. The Contractor shall provide for real-time, on-line connection between the Contractor’s central data system and the test equipment/software in each inspection position to provide information on vehicles for the purpose of identifying each vehicle, along with the appropriate test procedures and standards, so that data entry at the station will be minimized.
 - b. The Contractor shall provide for real-time, on-line connection between the test equipment/software in each inspection position and the Contractor’s central data system to collect and store emissions test information and other information.
- Fleet Inspection Stations (and future Remote Inspection Stations) Data Collection and Transfer
 - a. The Contractor shall connect all Fleet Inspection Stations (and any future remote inspection stations) to the Contractor’s central data system via the internet and transmit required data from the Contractor’s central data system to the fleet stations. This system shall, at a minimum, provide the FIS with information on vehicles for the purpose of identifying each vehicle, along with the appropriate test procedures and standards, so that data entry at the fleet station will be minimized.
 - b. The Contractor shall provide fleet vehicle test allocations and Vehicle Emissions Inspection Certificates (VEICs) to the FIS.
 - c. The Contractor shall provide for real-time, on-line connection between the test equipment/software in each inspection position and the Contractor’s central data system to collect and store emissions test information and other information from all Fleet Inspection Stations and remote inspection stations. Data collected include all the data elements collected for tests conducted in the VEIP Stations, as identified in Section 8.3 of this RFP, plus facility identification.
- MDE Data Transfer
 - a. The Contractor shall provide daily test data transfer to MDE. The data shall be provided via a secure file transfer protocol to the MDE secure FTP site.
 - b. The Contractor shall provide monthly on disk a copy of the test records for the subject month, including the “No-Show” List; the list of corrections and

the date corrections were made; vehicles granted extensions; and vehicles receiving test notices.

- Certified Emissions Repair Facilities and Master Certified Emissions Technicians Data Transfer
 - a. The Contractor shall provide for real-time, on-line collection of repair data from CERFs and MCETs.
 - b. The Contractor shall provide for access by CERFs and MCETs via the internet to subsequent test results for vehicles repaired by the CERF/MCET.

6.13.4. Reporting and Querying

The Contractor shall provide the MVA and MDE with capabilities and support for access to system databases and files for ad hoc querying, data analysis, and reporting purposes. This capability shall include but not be limited to providing for real-time and batch access to database records as required to generate statistics or data summaries and to access and retrieve selected records or portions of records to provide data and information necessary to verify the quality and integrity of the system and the Contractor work. The system shall be designed to accommodate such MVA and MDE access and processing at any reasonable time, without impacting normal system operation, performance or production.

Online Management Reporting

The system shall provide designated Contractor, MVA, and MDE employees with on-line real-time data and statistics necessary to oversee VEIP operation, including at a minimum, the following reports (the actual format of any and all reports required from the Contractor must be in a format approved by the MVA and/or MDE):

- Basic Network Activity Report: Display(s) of network-wide testing activity summarizing for each station, and network total, by hour for a user specified date (default to the current day):
 - 1) Number of vehicles presented for testing; and
 - 2) Station utilization rate.
 - 3) Total number of vehicles processed in under 15 minutes
 - 4) Total number of vehicles processed in over 15 minutes
 - 5) Average vehicle wait time and transaction time per hour
- Station Activity Report: Display(s) of station specific testing activity summarizing for each lane, testing position, and the station total, by hour for a user specified date (default to the current day):
 - 1) Lane operational status (open, down for repair/maintenance, closed);
 - 2) Number of vehicles presented for testing;
 - 3) Number and percentage of vehicles rejected and reason for rejection (for other than OBD readiness reasons);
 - 4) Number of tested vehicles by test type (idle exhaust/catalytic converter check, OBD, gas cap); and
 - 5) Number and percentage of vehicles failing by reason: idle exhaust test only, catalytic converter check only, OBD test, gas cap test only, and both gas cap test and idle test.

- **Expanded Network Activity Report:** Display(s) of network-wide activity summarizing for each station, and network total, by hour for a user specified date (default to the current day):
 - 1) Number of vehicles presented for testing;
 - 2) Number and percentage of vehicles rejected from testing and reason for rejection (for other than OBD readiness reasons);
 - 3) Station utilization rates; and
 - 4) Number of repair waivers granted.

- **Compliance Report:** Display(s) of accumulated testing activity summarizing by selected date (month and year):
 - 1) Number of vehicles presented for testing; and
 - 2) Number and percentage of vehicles complying (passes and waivers).
 - 3) Number of repair waivers granted.

- **Quality Control Report:** Display(s) of station specific quality control activity, summarized for each lane, testing position, and the station total, by hour for a user specified date (default to current day), including but not limited to:
 - 1) Operational status of lane;
 - 2) Records and results of lane opening test equipment quality control checks;
 - 3) Records and results of periodic test equipment calibration checks, including automatic adjustments for out of limit conditions;
 - 4) Records and results of test equipment zero checks;
 - 5) Records and results of test equipment leak checks;
 - 6) Records and results of test equipment low flow checks;
 - 7) Records and results of test equipment pressurization checks; and
 - 8) Records of equipment maintenance or service.

Data Summary Reports

The system shall provide designated State and Contractor employees with weekly, monthly, and quarterly summary reports necessary to oversee Maryland VEIP operation, including at a minimum, the following reports (the actual content and format of any and all reports required from the Contractor must be approved by the MVA and/or MDE).

- **Weekly, Monthly, and Quarterly Test Summary Reports:** A report shall be prepared for each test station, and a totals report for all stations, summarizing by vehicle type and model year:
 - 1) Number of vehicles tested (initial tests) by test type (idle exhaust/catalytic converter check, OBD, gas cap);
 - 2) Number and percentage of vehicles failing (idle exhaust test only, catalytic converter test only, OBD test, gas cap test only, and both the gas cap test and the idle test);
 - 3) Number of vehicles failing the fast fail provision of the idle test;
 - 4) Number of vehicles receiving the second chance idle exhaust test, percentage of vehicles failing the second chance test for the initial test, and percentage of vehicles failing the second chance test for the second or subsequent retest;
 - 5) Number and percentage of initially failed vehicles receiving a waiver after the first retest, receiving a waiver after the second or subsequent retest, and receiving a waiver after the initial test fail, based on repairs conducted within thirty (30) days prior to the initial test fail;

- 6) Number and percentage of vehicles with special consideration (overrides, voided tests, and manual data entry).
- Monthly VEIC Accounting Report: The Contractor must submit to the MVA a report, by the tenth day of each month, which details the issued, un-issued, and voided VEIC certificates for the previous month at each station. All voided VEIC certificates for the report month must accompany the report when it is sent to the MVA.
 - Weekly, Monthly and Quarterly Station Summary Reports: A report shall be prepared for each test station, and a totals report for all stations, showing the number of operational test positions, total position-hours, and percent of time:
 - 1) Positions were open (adequately staffed and available for testing);
 - 2) Positions were down for maintenance; and
 - 3) Positions were closed during operating hours.
 - Weekly, Monthly and Quarterly Quality Control Reports: A report shall be prepared showing:
 - 1) Number of emission test stations and testing positions in use;
 - 2) Number of internal equipment audits and results (pass/fail) by station and testing position; and
 - 3) Description of repairs conducted as result of failed internal equipment audits by station and testing position.
 - Monthly and Quarterly Inspector/Technician/CSR Summary Reports: A report shall be prepared for each test station and a totals report for all stations:
 - 1) Number of certified inspectors available to conduct inspections;
 - 2) Number of inspectors suspended, fired, or otherwise prohibited from testing as a result of intentionally improperly passing vehicles, or other serious offenses;
 - 3) Number of new inspectors certified, and current inspectors recertified by MVA;
 - 4) Number of certified equipment technicians available;
 - 5) Number of new equipment technicians certified, and current technicians recertified by MDE; and
 - 6) Number of certified customer service representatives.
 - Quarterly Vehicle Repair Reports: A report shall be prepared summarizing vehicle repair data:
 - 1) Number of vehicles repaired;
 - 2) Number and percentage of passes after repair;
 - 3) Number and percentage of failures after repair;
 - 4) Number and percentage of waivers after repair;
 - 5) Average repair cost of vehicles passing after repair; and
 - 6) Average repair cost of vehicles waived after repair.

Due Dates for Summary Reports

- For weekly reporting purposes, a week is a seven (7) day period commencing on Sunday. Weekly reports shall be provided for Sunday through Saturday, beginning with the first week of operation under the new Contract, no later than three calendar days after the last day of the preceding reporting week.

- Monthly reports shall be provided on a calendar basis, beginning with the first month of operation under the new Contract, no later than one calendar week after the last day of the preceding calendar month.
- Quarterly reports shall be provided on a calendar basis, beginning with the calendar quarter in which operation begins under the new contract, no later than one calendar week after the last day of the preceding three calendar month period.

Test Data Monitoring / Trigger Reports

- The Contractor shall monitor the test data in order to identify occurrences of improper or fraudulent test procedures, and/or inaccurate test results. Tests performed in the course of State audits, Contractor staff training, and Contractor technician activity shall be excluded from consideration. The data monitoring shall identify anomalies in vehicle test records; departure by individual lane inspector personnel from the expected performance norm; and deviation in individual emissions test positions, lanes, and stations from overall network performance levels. The Contractor shall establish specific monitoring criteria and triggers that will prompt immediate investigation and corrective action, including:
 - 1) Vehicles with a changed OBD monitor support profile or communication protocol from a previous test (both in current test cycle and in previous test cycle);
 - 2) Consecutive OBD tests from an emissions test position or individual lane with identical scanned data;
 - 3) Vehicles tested more than once on a single day;
 - 4) Lane inspectors logged in simultaneously at multiple testing positions;
 - 5) Lane inspectors with unusually high pass rates, overall and for retests (minimum number of tests and pass rate limits to be defined);
 - 6) Test positions with unusually high OBD communication fail rate (minimum number of tests and fail rate to be defined);
 - 7) Test positions with pre-calibration results deviating from calibration gas standards by more than ten (10) percent;
 - 8) Stations and lane inspectors with unusually high numbers of non-OBD vehicles without completed gas cap tests (minimum number of tests and fail rate to be defined based on Contractor's test and QA procedures);
 - 9) Test positions with gas cap test equipment deviating from the calibration standard by more than a given percentage (to be defined based on Contractor's test and QA procedures); and
 - 10) For lanes with 2 testing positions:
 - Any Position 2 test with an overall start time before the overall end time of a Position 1 test and an overall end time after the test start time of a subsequent Position 1 test.
 - Any Position 1 test with an overall start time before the overall end time of a Position 2 test and an overall end time after the overall start time of a subsequent Position 2 test.
- The Contractor may suggest additional trigger anomalies or data elements that could be indicative of improper, fraudulent, or inaccurate testing.

- The Contractor shall provide to the MVA and MDE a detailed description of the test data monitoring program, including the criteria and triggers to be used, and a description of the investigative procedures and steps to be taken when the need for action arises.
- The Contractor shall:
 1. Provide the MVA and MDE with direct access to the test data monitoring information;
 2. Provide the MDE and MVA with daily reports on the monitoring of subject criteria elements and triggers;
 3. Notify MDE and MVA promptly upon discovery of improper or inaccurate testing; and,
 4. Submit monthly reports summarizing the monitoring data, findings, and corrective actions taken.
- The Contractor shall also have the capability to expand the monitoring criteria and triggers as necessary to address changes and/or enhancements in testing procedures and technologies.

Annual Data Reports for USEPA

- The Contractor shall provide data to MVA/MDE as needed for preparation of annual VEIP data reports in accordance with the requirements of 40 CFR Part 51, Subpart S, Inspection/Maintenance Program Requirements, §51.366 - Data Analysis and Reporting Requirements.
- The data report shall be submitted to MDE by July 15th of each contract year following commencement of operation under the new Contract, and shall cover the previous calendar year. For certain data elements noted below, the report shall include retest and compliance (pass or waiver) results through June 30th following the subject calendar year for initially failed vehicles from the subject calendar year.
- The report shall contain, at a minimum, the following elements:
 - a. The number of vehicles initially tested, by model year, vehicle type, and test type (idle exhaust/catalytic converter check, OBD, gas cap).
 - b. By model year and vehicle type, the number and percentage of vehicles:
 - 1) Passing the initial test, per test type (idle exhaust, catalytic converter check, OBD, gas cap);
 - 2) Failing initially, per test type (idle exhaust, catalytic converter check, OBD, gas cap only, idle emissions and gas cap);
 - 3) Initially failed vehicles failing the first retest per test type (through June 30 of the following year);
 - 4) Initially failed vehicles passing the first retest per test type (through June 30 of the following year);
 - 5) Initially failed vehicles passing the second or subsequent retest per test type (through June 30 of the following year);
 - 6) Initially failed vehicles receiving a waiver (through June 30 of the following year); and
 - 7) Initially failed vehicles with no known final outcome regardless of reason (through June 30 of the following year).

- c. By model year and vehicle type, the number and percentage of vehicles for which:
 - 1) MIL is commanded on and no codes are stored;
 - 2) MIL is not commanded on and codes are stored;
 - 3) MIL is commanded on and codes are stored;
 - 4) MIL is not commanded on and codes are not stored; and
 - 5) Readiness status indicates that the evaluation is not complete for any module supported by on-board diagnostic systems.
- d. The initial test volume by model year and test station.
- e. The initial test failure rate by model year and test station.
- f. To the extent that the Contractor performs overt and/or covert audits of inspection lanes and stations, the data shall include the number of inspection stations and lanes operating throughout the year:
 - 1) Receiving overt performance audits in the year;
 - 2) Not receiving overt performance audits in the year;
 - 3) Receiving covert performance audits in the year;
 - 4) Not receiving covert performance audits in the year; and
 - 5) That have been shut down as a result of overt and/or covert performance audits.
- g. The number of Contractor inspectors:
 - 1) That were suspended, fired, or otherwise prohibited from testing as a result of covert and/or overt audits;
 - 2) That were suspended, fired, or otherwise prohibited from testing for other causes;
 - 3) That received fines as a result of covert and/or overt audits; and
 - 4) That received fines for other causes.
- h. The number of Contractor inspectors certified to conduct testing.
- i. The total number of compliance documents (VEIC) issued to inspection stations.
- j. The number of missing compliance documents (VEIC).
- k. The number of time extensions granted to motorists.

Vehicles with No Final Outcome – Annual Survey Sample

- In order to provide assistance to MDE and MVA in tracking the compliance status of vehicles with no final outcome, i.e., vehicles that failed the initial test but did not pass a retest, receive a waiver, or achieve compliance in some other manner, the Contractor shall:
 - a. Submit a sample of 1,000 vehicles that MDE shall select from the vehicle “No-Show” List to an independent vehicle information service (e.g., CARFAX, AutoCheck) to obtain the most recent information and location for each vehicle;
 - b. Submit the results to the MVA and MDE by July 15th annually.

- The Offeror shall include the cost of the annual survey sample in its base bid, and also itemize the cost as a line item as indicated in Appendix C.

6.13.5. Performance Requirements

Data Accuracy

- Ninety-nine and nine tenths (99.9%) percent of records transmitted by the Contractor shall be error free in all fields created, updated, or retransmitted, except for: data retransmitted to the State unchanged from when the State transmitted it to the Contractor; including MVA registration fields. The Contractor shall edit all records prior to transfer of data files to the MVA and to MDE; this editing process must not interfere with the timely transmission of records. It shall be the Contractor's continuing responsibility to immediately notify the MVA and MDE in any situation where data errors are discovered in, or have impact on, records which have already been transmitted.
- When the MVA or MDE discovers errors or sources of error in the Contractor-transmitted data, the Contractor shall promptly be notified. The Contractor must immediately take all necessary steps to correct the errors and their sources. The Contractor must utilize methods and sufficient resources for error correction and quality control to ensure that corrections are accurate, and completed and transmitted to the MVA and MDE within fifteen (15) business days from the time of the error's occurrence.

NOTE: When any station is off-line, or whenever a station must enter a record manually, prior to transmission of the record the Contractor must reconcile the vehicle identification data manually entered with the vehicle registration/notice data provided by the MVA system. The daily electronic transfer of files from any station to the MVA and MDE must occur the earlier of within two hours of that station's close of business, or the time the Contractor acquires knowledge of the error(s).

- The Contractor shall produce and transmit daily to the MVA daily control records per station that will allow the MVA to verify that the number of records received in transmission from the Contractor agrees with the number of records the Contractor processed for the work volume done that day. The control record shall show tests performed per inspector, per testing position, and per station, with totals for number of tests, number of passes and failures, dollars collected per each payment category, fees waived or returned, and total test fees and late fees collected.

System Availability

- At a minimum, the MVA and MDE shall be provided access to the Contractor's central data system during and outside of normal VEIP station operating hours, according to the following schedule: thirty (30) minutes prior to the opening for business and ninety (90) minutes following the close of business. Exceptions shall be allowed for days on which the MVA is closed.
- The Contractor's central data system shall not incur in excess of six (6) hours down time total for the entire program per calendar month. Down time is defined as computer system inaccessibility to required or expected operations, inputs and outputs.

- The Contractor's central data system shall be accessible and capable of sustained required and expected operations for a minimum of 98% of the time of each day of operation. The hours applicable for each day of operation are defined in Section 7.6 of this RFP.

System Access Performance

- Regardless of the source of the request, the Contractor's central data system shall provide on-line interactive access to vehicle and test data within five (5) seconds of a request.

System Update Performance

- The system shall be designed, operated, and maintained to provide for immediate (within thirty [30] seconds) updating of all necessary Contractor host databases with results of vehicle inspections and other transactions so that this information is available immediately throughout the Contractor's system.
- The system shall be designed and operated to prevent printing of any Vehicle Emissions Inspection Certificate (VEIC) and/or other required reports or documentation (except in manual mode) until the transaction has been posted and all Contractor host database records have been updated.
- An emissions test or any other VEIP transaction (including manual mode transactions) shall not be considered complete until all relevant Contractor host databases have been updated with all required information from the test or transaction.

Storage Requirements

- The system and relevant peripheral hardware shall be of sufficient size and configuration to maintain for at least four (4) years (two [2] inspection cycles) online in the Contractor's system all vehicle information. Following the four-year online storage, these records may be converted to another storage medium approved by the MVA and MDE at least forty-five (45) business days in advance of the Contractor's conversion of any record. Converted records must be retained in this format, form, and medium for the remainder of the required records retention period.
- The system and relevant peripheral hardware shall be of sufficient size and configuration to maintain for at least four (4) years (two [2] inspection cycles) online in the Contractor's system all records of test equipment QA/QC and maintenance.

Priority

- The System shall be designed, operated and maintained to provide equal priority for all requests for on-line vehicle and test data regardless of the source. On-line requests for data and processing of transactions from MVA and MDE access PCs/terminals shall be given the same priority as requests from testing lanes.

6.13.6. Access Network for MVA and MDE

In order for the MVA and MDE to perform administrative duties, the Contractor shall provide an access network consisting of the software and equipment needs shown below. NOTE: Equipment shall essentially include desktop computers and internet connections.

- At each public VEIP Station, the Contractor shall provide software and equipment necessary to support concurrent network access for MVA Customer Service Representatives and MDE personnel. A minimum of two (2) workstations, including printers, shall be available in the Customer Service Office for these purposes.
- At the MVA VEIP Headquarters Office, the Contractor shall provide network access for up to twenty-five (25) MVA program staff.
- At MDE Headquarters, the Contractor shall provide network access for up to twenty (20) MDE program staff.

6.13.7. Security Requirements

- A multi-level access code and security system shall be utilized which shall permit normal testing by the Contractor's staff, control by the station manager, and access for changes by Contractor and MVA/MDE personnel. The Contractor's system will maintain a log of the log-in user id, terminal id, and date and time of usage for each system function. This log must be readily accessible to authorized MVA/MDE personnel, and must be retained by the Contractor for a period of at least ten (10) years after the completion date of the contract. The Contractor's system will also be responsible for maintaining and changing the Peer-to-Peer log-in passwords for the CICS/TIP and FTP log-ins. The same requirements apply to Fleet Inspection Stations and any future Remote Inspection Stations and their personnel.
- The Contractor must comply with all provisions of the latest Maryland Department of Budget and Management (DBM) Information Technology (IT) policies, standards and guidelines (located at <http://www.dbm.maryland.gov>). The Contractor will work with the MVA and MDE to determine other policies and guidelines, in addition to those listed on the DBM website, requiring adherence.
 - a. System access shall be limited to authorized users controlled by IDs and passwords.
 - b. IDs and passwords shall be assigned to all system users (MDE, MVA, Contractor employees, Fleet Inspection Station personnel, and any future Remote Inspection Station personnel). The use of common IDs and/or passwords shall be prohibited.
 - c. Access in VEIP station Customer Service Offices shall allow for simultaneous access (on the same PC/terminal) by up to two authorized users;
 - d. Measures to prevent abuse and/or fraud by preventing a user from being logged-on to more than one device (PC/terminal or testing position);
 - e. Measures to automatically shut down or "put-to-sleep" access PCs/terminals after a specified time to prevent unauthorized use or access to data by unauthorized personnel;
 - f. Provisions to allow the MVA to place a security flag or lock on any VID record(s) that would, if set, alert specified MVA personnel of attempts to access the record and to prevent the application of a transaction (including

the issuance of any compliance certificate) to the record without specific MVA authorization;

- g. Provisions for a permanent audit trail of access (by MVA, MDE, Contractor, Fleet Inspection Station, or future Remote Inspection Station personnel) to individual vehicle database records. The following information shall be logged for all on-line requests for data from testing lanes, PCs, and terminals: 1) Access key (title number, VIN, plate, VEIC number); 2) Lane/PC/terminal address (location); 3) Date and time of request; and 4) User ID.
- Offerors shall also describe in the Data Management Plan the measures and techniques which will be used to prevent unauthorized access to, or use of, the system; and a recommended format for a written report/notification to be sent to the MVA and MDE as soon as possible whenever an unauthorized access attempt is recorded.

6.13.8. System Backup and Disaster Recovery

- The data management system must be designed, operated, and maintained with sufficient features to prevent the loss or corruption of data and minimize disruptions in service in the event of hardware or software failure. Sufficient data backup, redundancy, off-site backups, and recovery systems shall be provided to prevent corruption or loss of all data including, but not limited to:
 - 1) Vehicle data records;
 - 2) Test data and records of other related transactions;
 - 3) MVA enforcement clear records, and
 - 4) Test equipment QA/QC and maintenance records.
- The Contractor must also maintain data backup schedules for on-site backups and off-site data backups at third party hosts. Continuity of testing during operating hours shall be maintained for both a short-term outage and a long-term contingency/disaster recovery. The Contractor must perform a full system backup at least once per week with an incremental backup of all data occurring at least once every twenty-four (24) hours, with minimal disruptions to State business. All backups and system maintenance that require downtime shall be performed during non-business hours and with prior State approval.
- The Contractor shall include in the Data Management Plan the approach for data collection, processing, and report generation in the event of loss of communications service, computer system breakdown, or electrical power failure. Offerors shall describe in detail how the system will prevent such losses, accomplish timely data recovery, and reestablish normal system operations and service. In the event of a disaster affecting the Contractor's system, State records must be, at a minimum, recovered intact with no transactions processed more than once and the loss of no more than one day's transactions. All Contractor-provided system capability must be completely functional within seventy-two (72) hours of the termination of the initial event creating the disaster.

6.13.9. Documentation

- Utilizing a format, standards, and content which are mutually agreed upon by the MVA, MDE, and the Contractor (See Appendix M: VEIP Documentation Requirements), the Contractor is required to supply and periodically update a master copy of the following levels of documentation relative to the Contractor's system:
 - a. End User Manual (identifying file names, record layouts, data dictionary, function descriptions, etc.);
 - b. Test Station Manual (identifying operating procedures, backup and recovery procedures, failed transmission procedures, etc.);
 - c. System Documentation (identifying the predominant program language(s), program functionalities, system flow, etc.).
- The MVA/MDE reserve the right to request any record or documentation or any part thereof pertaining to the management and operations of the program. This could include, but is not limited to, financial reports/statements, operational reports, maintenance reports/records, test data for analysis, procedures manuals, system design tests, etc.

6.13.10. System Updates

- The Contractor must secure MVA and MDE approval by written notification in advance of the desired implementation date for any new software, new versions of existing software, or deletion of software from the system. The network design document and all relevant documentation must clearly show any software additions, changes, or deletions.
- Software updates shall not be performed during VEIP business hours.

Appx X: Test Equipment Technical Specifications; Contractor Requirements for Staff Training & Quality Assurance under Project # ____

SECTION 7 – SCOPE OF WORK –VEIP STATION FACILITIES AND SERVICES

7.10. Training

7.10.1. The Offeror shall submit with its Technical Proposal a Training Plan to develop and implement a training program in accordance with 40 CFR Part 51, Subpart S, Inspection/Maintenance Program Requirements, §51.367 for all vehicle inspectors and technical staff required to operate and maintain the VEIP. The MVA and MDE anticipate that much of the training program will need to be conducted before the start of the contract term; i.e., during the time covered in the Contractor's Transition Plan from the current VEIP to completed implementation of the new program.

7.10.2. The Contractor's training program must be approved by the MVA and MDE, and must include the curriculum, training materials, written examination, and final certification test for lane inspectors and equipment technicians, and Customer Service Representatives. The Contractor must also submit for approval updates of training program components as required for the implementation of program changes or enhancements.

7.10.3. Lane Inspector Training and Certification

- The lane inspector training shall consist of formal classroom and/or computer-based instruction, followed by twenty (20) hours of hands-on practical application. Following the classroom instruction period, a score of eighty (80) percent correct responses is required to pass the written portion of the test. Trainees passing the written test shall then serve a twenty (20) hour apprenticeship under a certified inspector. Following the apprentice period, the trainee shall take the final certification test, which will consist of a demonstration by the trainee of the ability to conduct five (5) complete inspections, without assistance, on the equipment to be used by the inspector. The hands-on demonstration shall include the idle test, catalytic converter check, gas cap integrity test, and OBD test. The demonstration tests shall include a mix, as determined by the MVA, of light-duty vehicles, light-duty trucks, and heavy-duty vehicles. The trainee shall also demonstrate the ability to properly utilize test equipment, to follow other procedures (including, but not limited to collection of fees, identification and classification of vehicles, use of the data handling system, and determination of test eligibility), and to demonstrate an understanding of positive public relations and customer service skills.
- The Offeror's Training Plan shall identify the instructors for the lane inspector training and briefly summarize their qualifications.
- The Lane Inspector Training Program shall specifically include, but not be limited to:
 - a. Manuals and materials for each trainee;
 - b. Air pollution causes and effects;

- c. Maryland VEIP program orientation;
 - d. Vehicle emissions and standards;
 - e. VEIP emissions equipment and inspection procedures;
 - f. VEIP emissions regulations;
 - g. VEIP inspection facility operation and procedures;
 - h. Courtesy and customer relations;
 - i. Complaint handling;
 - j. Safety and health issues related to the inspection process, including gas handling and storage;
 - k. New or revised requirements or procedures as they are implemented in the program;
 - l. Periodic monitoring of employees to gauge effectiveness of previous training and to identify potential needs;
 - m. Periodic review of training program operation; and
 - n. Employee retraining.
- Certification of personnel. All lane inspectors shall be certified by the MVA or other authorized entity after successfully taking the training approved by MVA and MDE, and passing written and hands-on tests administered by the MVA or other authorized entity. On a biennial basis all lane inspectors must take and pass refresher courses and a recertification examination approved by the MVA and MDE to maintain certification to inspect vehicles

7.10.4. Technician Training and Certification

- The Offeror's Training Plan shall identify the instructors for the equipment technician training and briefly summarize their qualifications.
- The Technician Training Program shall include formal classroom instruction, and/or computer-based training, including but not limited to:
 - a. Manuals and materials for each trainee;
 - b. Air pollution causes and effects;
 - c. Maryland VEIP program orientation;
 - d. VEIP emissions equipment and inspection procedures;
 - e. VEIP emissions regulations;
 - f. VEIP inspection facility operation and procedures;
 - g. VEIP test equipment theory, design, operation, maintenance, calibration, and inspection;

- h. VEIP quality control procedures and their purpose;
 - i. New or revised requirements or procedures as they are implemented in the program;
 - j. Safety and health issues related to the inspection process, including gas handling and storage; and
 - k. Periodic monitoring of employees to gauge effectiveness of previous training and to identify potential needs.
- Following completion of the classroom instruction, a score of 80% correct responses is required to pass the written portion of the test. Trainees passing the written test shall receive at least twenty (20) hours of hands-on training on the testing and emissions analysis equipment. Upon completion of the hands-on training, the trainee shall take the final certification test, which will consist of a demonstration by the trainee of the required equipment operation, inspection, maintenance, calibration, and quality assurance procedures.
 - All technicians shall be certified by the MDE or other authorized entity after successfully taking the training approved by the MVA and MDE, and passing the written and final certification tests administered by the MDE or other authorized entity. On a biennial basis, all technicians must take and pass refresher courses and a recertification test approved by the MVA and MDE to maintain certification.

7.10.5. Customer Service Representative Training and Certification

- The Offeror's Training Plan shall identify the instructors for the customer service representative training and briefly summarize their qualifications.
- The Customer Service Representative Training Program shall include formal classroom instruction, including but not limited to:
 - a. Manuals and materials for each trainee;
 - b. Air pollution causes and effects;
 - c. Maryland VEIP program orientation;
 - d. VEIP emissions equipment and inspection procedures;
 - e. VEIP emissions regulations;
 - f. VEIP inspection facility operation and procedures;
 - g. New or revised requirements or procedures as they are implemented in the program;
 - h. Safety and health issues related to the inspection process;
 - i. Waiver certificates, extensions, exemptions, and fee overrides within regulations of the VEIP;
 - j. Recall information for the purpose of referencing any pertinent recall information involving the customer's vehicle; and
 - k. Procedures for advising vehicle owners on how to contact the vehicle manufacturer/dealership regarding recalls.

- Following completion of the classroom instruction, a score of eighty (80) percent correct responses is required to pass the written portion of the test.
- All customer service representatives shall be certified by the MVA or other authorized entity after successfully taking the training approved by the MVA and MDE, and passing the certification tests administered by the MVA or other authorized entity. On an annual basis, all customer service representatives must take and pass refresher courses and a recertification test approved by the MVA and MDE to maintain certification.

7.10.6. During the term of the Contract, MVA may direct the Contractor to temporarily or permanently remove from the services provided under this Contract any Customer Service Representative or any other Contractor personnel who fail to perform their responsibilities adequately or who fail to maintain necessary certification(s) or license(s). Contractor may propose to the MVA to provide retraining and/or recertification of such personnel, within thirty (30) days of MVA's communication regarding the unsuitability of the individual, to re-qualify the individual, and if approved by the MVA, provide documentation of the satisfactory completion of those actions to the MVA prior to reinstatement to duties under this Contract.

7.10.7. The Contractor shall develop and implement, at no cost to the State, a plan for the training and/or retraining of up to fifty (50) MVA and MDE personnel annually in the operation, maintenance, and quality assurance of vehicle testing and analysis equipment.

7.12. Quality Assurance/Quality Control, Operational and Performance Audits

7.12.1. MDE Quality Assurance/Quality Control Audits

- The Contractor shall allow access during operational hours to MDE personnel to conduct audits of the facility and equipment. MDE requires that such audits will not interfere with any station's ability to provide service to the public during business hours.
- The Contractor shall make available immediately to MDE any documentation required to complete the audits upon request and with no prior notification.
- The Contractor shall make available to MDE any inspection equipment, inventories, gases, and supplies required for the purpose of conducting the audits.
- The Contractor shall be subject to penalties based on the results of audit or other findings that indicate a failure to follow proper procedures regarding quality assurance and maintenance per Section 2.40 of this RFP.
- The Contractor shall make available for the audits two (2) qualified equipment technicians who have the knowledge and the tools to correct deficiencies during the audit, and must be trained and certified as required in Section 7.10.4.
- An audit is failed, and the Contractor subject to penalties if the Contractor's qualified technicians are not present to begin the audit within sixty (60) minutes of the arrival of MDE personnel at the station.

- A piece of equipment which fails an audit shall not be used until a subsequent audit of that equipment is passed or until corrective action is taken by the Contractor and approved by MDE.
- A testing position which cannot be audited because it is out of service for repairs and has not been so reported to MDE shall fail the audit.
- The audit may include, but not be limited to the following:
 - a. Review and collection of records, including vehicle testing results, equipment calibration results, quality assurance procedures and results, inventory of spare parts and gases, and equipment maintenance records. Records shall be made available and provided to the MDE in electronic and paper format.
 - b. A gas audit using gases of known concentrations, comparing these concentrations to actual readings;
 - c. A gas audit using a blind sample;
 - d. A check for tampering, worn instruments, blocked filters, and other conditions that would impede sampling;
 - e. A leak check;
 - f. A check to determine that station gas bottles used for calibration purposes are properly labeled, stored, and within the relevant tolerances;
 - g. A check of span gas pressure;
 - h. A mid/zero/span check;
 - i. Check of temperature and humidity levels in equipment enclosures;
 - j. A check of the gas cap integrity test equipment;
 - k. Check of availability of test positions for official testing;
 - l. A check of equipment used for OBD tests;
 - m. A check that all equipment and software settings are within established tolerances; and
 - n. A check for the proper condition and length of sample hoses.

7.12.2. MVA Operational and Performance Audits

- The Contractor shall cooperate with MVA staff who will conduct periodic operational and performance audits.
- The Contractor shall grant access at all facilities to authorized MVA and State personnel for the purposes of monitoring operational activities and conducting audits of the facility, its operations and equipment. Audits and reviews will be conducted at random during VEIP station operating hours and with no prior notification.

- The Contractor shall make available immediately to MVA any documentation required to complete the operational and performance reviews and audits upon request and with no prior notification.
- The Contractor shall be subject to sanction based on the results of audit or other findings that indicate a failure to follow proper procedures regarding fund handling and accounting, including, but not limited to, granting late fee overrides and inspection waivers.

7.13. Motorist Payment Methods Permitted

7.13.1. The Contractor shall collect all required fees, including any late charges, at the time a vehicle is presented for inspection. Arrangements shall be made for customer payment by cash, personal check, traveler's check, American Express, VISA, Master Card, or any other payment method deemed acceptable by the State for VEIP. The Contractor will accept all checks made out to "VEIP". The Contractor shall be required to provide equipment for all credit card customer transactions. The full fee(s) due by the motorist or Fleet Inspection Station for each transaction will be credited to MVA by Contractor for all motorist and FIS transactions.

- Credit charges will be made in the Contractor's name. The Contractor will be directly responsible for all merchant/transaction fees associated with credit card transactions. Transaction fees charged by the credit card companies shall be invoiced back to MVA on the Contractor's monthly M&O invoice at the provider's rate to a State agency along with a copy of the credit card company's actual invoice. Only cards approved by MVA for VEIP may be allowed.
- Contractor will be responsible for collecting funds resulting from any bad (NSF or other) checks, charges, or debit transactions. Contractor shall be responsible for resolving any credit or check disputes which may arise with motorists, credit card companies, banks or any other person or organization.
- Pre-paid FIS inspections shall be credited at the date/time the inspection is performed.

7.13.2. The Contractor must accept cash payments in denominations as large as \$100 bills during business hours at any time at any VEIP station.

7.13.3 All fees collected shall be deposited in an account(s) maintained by the Contractor. The Contractor shall maintain records in sufficient detail that the following can be ascertained for any fee collected, any fee refunded to the motorist (i.e., vehicle rejected as not ready for inspection), and any fee waived (i.e., late fee waived):

- Vehicle Plate Number, Title Number, and Vehicle Identification Number (VIN);
- VEIP Station ID;
- Lane Number and Test Position Number;
- Inspector ID;
- Inspection Date/Time;

- Test Number;
- Inspection and/or Late Fee Collected;
- Mode of Payment (and if cash, amount tendered and change given);
- VEIC Number;
- Override code and ID number, in separate fields, of supervisor approving override for all transactions involving waiver or non-collection of otherwise expected fee to be received from motorist; and
- A supervisor must electronically approve all inspection voids and fee waivers, and a record be maintained of these transactions, the reason for each transaction, and the ID of the supervisor approving an override.

,7.13

SECTION 8 – SCOPE OF WORK – INSPECTION PROCEDURES, EQUIPMENT, AND OPERATIONAL REQUIREMENTS

8.1. General

8.1.1.The inspection procedures specified below and described in detail later in this section shall be performed on 1977 and newer light-duty gasoline vehicles (LDGV), light-duty gasoline trucks (LDGT), and heavy-duty gasoline vehicles (HDGV) up to 26,000 pounds gross vehicle weight rating (GVWR). The requirements of this section apply to VEIP Stations, Fleet Inspection Stations, potential future remote inspection stations, and on-road emissions inspection.

- Idle Emissions Test.
- On Board Diagnostic (OBD) Test.
- Gas Cap Integrity Test.
- Catalytic Converter Check.
- On-Road Emissions Inspection.

8.1.2.Bi-fuel and flex-fuel vehicles, e.g., gasoline/E-85, are subject to the same testing requirements as gasoline powered vehicles, whether operating on gasoline or an alternative fuel. Dedicated alternative fuel vehicles, e.g., compressed natural gas, are exempt from testing.

8.1.3.The emissions testing equipment shall be upgraded as required to accommodate all vehicles

covered by this program throughout the life of the Contract.

8.1.4.Exhibit 8-1 provides a summary of the inspection procedures for different types of vehicles.

Exhibit 8-1: Post-2009 Emission Testing Regime

TEST TYPE	SUBJECT VEHICLES	KEY TEST ELEMENTS
OBD	1996+ LDGV, GVWR up to 8,500 lbs. 2008+ HDGV, GVWR 8,500 to 14,000 lbs.	1) Vehicles not meeting monitor readiness requirements are rejected from testing one time. 2) Retest parameters are the same as initial test parameters, except for vehicles that fail with catalyst or evaporative DTCs.
Idle Test with Tamper Check	1977 - 1995 LDGV, GVWR up to 8,500 lbs. 1977+ HDGV, GVWR 14,000 to 26,000 lbs. 1977 - 2007 HDGV, GVWR 8,500 to 14,000 lbs.	1) Unpreconditioned single speed idle test 2) BAR97 analyzers 3) Fast pass and fast fail per 40 CFR Part 51, Subpart S, Appendix A 4) Visual check of catalytic converter 5) No External Tachometer Measurement of RPM 6) Retest parameters are the same as initial test parameters. 7) Failures receive second chance test, plus pre-conditioning.
Gas Cap Pressure Test	All Idle-Tested Vehicles	1) Gas cap test is pass/fail. 2) Retest for gas cap-only fails will include the idle test with tamper check. 3) Retest parameters are the same as initial test parameters.
Additional Test / Operational Elements		
<p><u>Idle Test:</u> If the CO + CO2 level is below 6%, indicating that the test sample was invalid, a second chance test shall be performed. If the CO + CO2 result on the second chance test is below 6%, the test shall be considered to be void, and the motorist shall be informed that the vehicle cannot be tested in its present condition</p> <p><u>Gas Cap Test:</u> Gas cap test adaptors will be bar coded and delineated by color or other identifier. The inspector will scan the bar code on the adaptor used in the test. The scanned information will be retained in the vehicle test record. The software lookup information must identify the gas cap test adaptor for no less than 98% of the vehicles tested. The “adaptor not identified” rate cannot exceed 2% of the vehicles tested.</p> <p><u>OBD:</u> The OBD software shall include an automatic retry to establish communications with the subject vehicle if the first attempt fails. An Exceptions Table for handling problematic vehicles will be provided by MDE and MVA. Vehicles failing for Catalyst or Evaporative diagnostic trouble codes (DTCs) must have the applicable readiness monitor set upon return for a retest, in addition to meeting the standard readiness requirements (1 or 2 not-ready monitors allowed per EPA guidance). Vehicles will still be rejected for readiness only one time.</p>		

8.1.5. The following documents are listed for reference purposes and background information, and are requirements only where specified as such in this RFP:

- Performing Onboard Diagnostic System Checks as Part of a Vehicle Inspection and Maintenance Program, EPA 420-R-01-015, June 2001, or as subsequently amended;
- Inspection /Maintenance Program Requirements, 40 CFR PART 51, Subpart S, , April 2006, or as subsequently amended;
- U.S. EPA IM240 & Evap Technical Guidance, Document # EPA420-R-00-007,

April, 2000, also referred to as the EPA April 2000 Technical Guidance;

- State of Maryland State Implementation Plan Revision 95-06 for an Enhanced Vehicle Emissions Inspection Program;
- State of Maryland State Implementation Plan Revision 96-02, Amendment to State Implementation Plan 95-06 for an Enhanced Vehicle Emissions Inspection Program;
- State of Maryland State Implementation Plan Revision 98-13 for an Enhanced Vehicle Emissions Inspection Program, September 1998;
- State of Maryland State Implementation Plan Revision 02-01 for On-Board Diagnostic Testing in the Vehicle Emissions Inspection Program, January, 2002;
- Annotated Code of Maryland, Title 23, Vehicle Laws, Subtitle 2, Motor Vehicle Emissions Inspection, as amended from time to time;
- 40 CFR PART 85, Subpart W, Control of Air Pollution from Mobile Sources , as amended from time to time;
- 40 CFR PART 86, Control of Air Pollution from New and In Use Motor Vehicles and New and In Use Vehicle Engines: Certification and Test Procedures, as amended from time to time;
- California Department of Consumer Affairs, Bureau of Automotive Repair, BAR-97 Hardware Specifications, Current Edition, also referred to as the BAR-97 Specifications; and
- Society of Automotive Engineers (SAE International) Standards and Protocols, Current Edition.

8.2. Test Descriptions and Specifications

8.2.1.All inspection equipment shall be provided by the Contractor at its costs, and must be integrated into one system that is tied into the central data system.

8.2.2.All additional and replacement equipment must be operationally compatible with, and able to be integrated with the existing testing equipment to produce accurate and reliable test results; and must meet or exceed, at a minimum, the specifications of the existing equipment, or the specifications contained in the EPA April 2000 Technical Guidance or BAR-97 Specifications, as applicable, and any future EPA, MDE, or MVA guidance or requirements.

8.2.3. Inspection Equipment

- **Compatibility:** All inspection equipment, analyzers, lane terminals, printers, and/or devices shall be capable of operating accurately and reliably under the full range of ambient and climatic conditions which may be experienced in the inspection area, i.e., -5° F to 110° F, and up to 100% humidity. This capability shall be confirmed by manufacturers' statements of functionality based on actual equipment testing; supported by manufacturers' warranties; and demonstrated by acceptance testing and additional testing over the course of one full year. Note

that the Contractor may enclose the test equipment in an environmentally controlled housing. Corrective action shall be taken by the Contractor, at no cost to the State, if requirements are not met.

- At a minimum, emissions inspection equipment shall be:
 - a. Automated to the highest degree commercially available to minimize the potential for intentional fraud and/or human error;
 - b. Secure from tampering and/or abuse; and
 - c. Based upon written specifications.
- The inspection system shall automatically:
 - a. Make pass/fail decisions for all measurements;
 - b. Conduct regular self-testing of recording accuracy;
 - c. Perform electrical calibration and system integrity checks before each test, as applicable;
 - d. Record all calibration data;
 - e. Track repairs and maintenance procedures for all inspection equipment; and
 - f. Initiate immediate system lockouts for tampering with security aspects of the test system or failing to conduct or pass quality assurance procedures.
- The emissions inspection system shall be able to inspect all covered vehicles per the schedule shown on Exhibit 8-1 throughout the life of the Contract. Any updates necessary to inspect future vehicles as required by this RFP will be provided without cost to the State.

8.2.4.Idle Emissions Test

The Contractor shall provide equipment to perform the idle emissions test that meets the requirements of the California Department of Consumer Affairs, Bureau of Automotive Repair BAR-97 Hardware Specifications, Current Edition, with regard to:

- Section 2.2.6 Testing Throughput Capability;
- Section 2.4 Exhaust Gas Analysis Equipment for the Emissions Inspection System (EIS), with the exception that nitric oxide and opacity measurements are not required; and
- Section 2.10 Testing Heavy-Duty Gasoline-Powered Vehicles as applicable to the types of vehicles subject to the Maryland VEIP.

8.2.5.OBD Test

- The Contractor shall provide equipment to perform the OBDII inspection. The OBDII equipment and software must be able to test vehicles as indicated in Exhibit 8-1.
- The OBDII equipment must be able to communicate by using all KWP, VPW, PWM, ISO, and CAN Protocols, and any future communication protocols used by vehicle manufacturers.

- The Contractor must achieve a communication success rate of at least 99.5 percent of all OBD tests. The Contractor will investigate and propose solutions to communication problems in specific year, make, and model combinations that have higher than average (e.g., greater than 5 percent) communication failure rate.
- The interface module must comply with SAE J1979/J2012 specifications.
- OBDII test data must be retrieved and stored during the OBDII inspection process. The OBDII equipment must be capable of reading and recording commanded malfunction indicator lamp (MIL) status, readiness monitors, diagnostic trouble codes, vehicle identification number, communication protocol, and other generic OBD parameters, including Mode \$01 and Mode \$09 data elements, as identified in Section 8.3, Vehicle Test Data. NOTE: Availability of some of these data elements is being phased in by vehicle manufacturers in future model years. The Contractor must demonstrate data collection capability for all of the listed elements during initial system acceptance testing.
- OBDII equipment must show pictures of the diagnostic link connector (DLC) location.
- OBD pass/fail standards, including lists of vehicles excluded from readiness and/or other pass/fail criteria, and the specified allowable number of consecutive OBD communication fails at a single testing position, must be easily updated, without requiring new software versions.
- Each OBDII test system must be supplied with a cable, not to exceed five (5) meters in length (SAE J2284), connected to a SAE J1962 connector. The cable must be retractable.
- For motorists rejected for readiness, Offerors shall propose a method for:
 - a. Recording the rejection as a unique test result;
 - b. Reconciling the return of the test fee to the motorist (since no official test was performed) with the overall fee collection data; and
 - c. Providing the motorist with a printed form that:
 1. Explains the reason for the rejection, including the monitors that were not ready;
 2. Recommends driving the vehicle normally for 2-3 weeks and returning for testing; and
 3. Includes the motorist's due date, adjusted if necessary from the original date to allow the motorist two (2) to three (3) weeks to drive for readiness monitors to set.

8.2.6. Gas Cap Integrity Test

- The Contractor shall provide gas cap integrity test equipment to implement the flow rate method to check gas cap integrity as described in the EPA April 2000 Technical Guidance.
- Equipment for alternative, equivalent test procedures for gas cap integrity may also be proposed. All test equipment shall meet the specifications contained in

the EPA April 2000 Technical Guidance and as may be amended. Any process utilizing proposed alternative equipment and procedures must be fully and clearly described, to include engineering rationale and calculations documenting how the alternative equipment and procedure(s) will provide an analysis of gas cap integrity which is equivalent to or better than the EPA April 2000 Technical Guidance. Any such alternative must be approved by the MVA and MDE prior to implementation by the Contractor.

8.3. Data Collection

Data Entry Panel

- The system shall provide a mechanism for assuring accurate and easy entry of vehicle identification, inspector, and inspection data, including the following elements:
 - a. Wireless barcode reader with a broadcast range of over 40 feet, recharging time less than four (4) hours, depth of field of 0-12 inches or more with a scan angle of at least 45 degrees, and battery capacity of over 8,000 scans. Reader shall be capable of reading 1-D and 2-D barcodes. Wireless devices will be safeguarded from interference from nearby similar units or other signals from other devices.
 - b. Vehicle Information Terminal: The vehicle identification data entry must be correct and visible to the inspector.
 - c. 2-D barcode on failed Vehicle Emissions Inspection Certificates (VEIC) providing test results (test number, items failed) and vehicle information (VIN, year, make, model).
 - d. Software to decode vehicle identification numbers (VINs). System shall use Polk or equivalent acceptable VIN decoder.
 - e. Optional Elements: Contractor is encouraged to propose additional features that will improve lane operation and data accuracy, including the following:
 1. Remote control of data entry operations during inspections, and
 2. Touch screen monitor.

Vehicle Identification Number

- The Contractor will be required to accommodate changes to the Vehicle Identification Number (VIN) as proposed in amendments to the National Highway Traffic Safety Administration's Vehicle Identification Number (VIN) regulation (see 49 CFR part 65, October 2, 2007, pages 56027-56036).

Vehicle Test Data

- The Contractor shall transmit vehicle test data to the MVA and to the MDE on a daily, weekly, or monthly basis as described in this RFP, or as otherwise directed by MVA and MDE.
- The Contractor shall provide the MVA and MDE with a data dictionary defining individual data field definitions, type, and length; codes and abbreviations used to designate units of measure and other indicators, e.g., g = gasoline, 4WD = four wheel drive; and other codes utilized in presenting the required information.

- At a minimum, for each test conducted the Contractor shall collect and transmit to **both** the MVA and MDE, in a format and detail approved by the MVA and MDE, the GENERAL TEST RECORD ELEMENTS and REPAIR WAIVER RECORD ELEMENTS listed below.
- At a minimum, for each test conducted the Contractor shall collect and transmit **only** to MDE, in a format and detail approved by MDE, the OBD TEST RECORD ELEMENTS, IDLE TEST RECORD ELEMENTS, AND GAS CAP TEST RECORD ELEMENTS listed below.

GENERAL TEST RECORD ELEMENTS (applicable to all test types) – MDE and MVA

1. Test day
2. Test date and time
3. Test station name & number
4. Station county
5. Anniversary date
6. Due date
7. Expiration date
8. Vehicle exempt from testing
9. Test station manager's ID
10. Lane number and test position number
11. Lane inspectors' ID
12. Test type
13. Lane software ID, revision
14. Vehicle wait time and data source
15. Test number
16. Overall test start time
17. Overall test end time
18. Overall test result (A [abort], F [fail], P [pass], W [waiver], R [rejected for readiness])
19. Test voided
20. Test abort reason code (exempt, technical or safety problems, other)
21. Previous test data (date, time, station, lane, position, result)
22. Fleet identifier
23. Customer type (mandatory, voluntary, Contractor technician, State audit, federal, out-of-state)
24. Vehicle year, make, model
25. Vehicle type (passenger, truck)
26. Hybrid vehicle ID
27. Vehicle drive (4WD, AWD, etc.)
28. Vehicle class (alphanumeric code from MVA record)
29. Vehicle title number
30. Vehicle plate number
31. Vehicle VIN number
32. Vehicle weight class (LDGT1, HDGT1, etc.)
33. Gross vehicle weight rating (GVWR)
34. Number of cylinders
35. Engine displacement
36. Transmission type

37. Fuel type
38. Odometer reading
39. Indicator for unscheduled tests (dealers, unregistered, out-of-state, police, out-of-cycle, federal vehicles, other)
40. Test payment method (cash, credit card, check, coupon)
41. Brand of Credit Card (American Express, VISA, MasterCard)
42. Coupon ID
43. Test fee
44. Test fee waiver
45. Test late fee
46. Test late fee waiver
47. Total paid
48. Cash (tendered, change)
49. Test fee waiver employee ID
50. Test late fee waiver employee ID
51. Registrant zip code
52. Unique test certificate number
53. Lane to host communication result

REPAIR WAIVER RECORD ELEMENTS – MDE and MVA

1. Repair facility contact information, or Certified Emissions Repair Facility (CERF) Number
2. Repair technician name or MCET number
3. Repair costs (parts, labor, total)
4. Identification of vehicle systems receiving repairs

OBD TEST RECORD ELEMENTS – MDE

1. OBD scanner software version and/or revision number
2. OBD test start time
3. OBD test end time
4. OBD scan duration
5. OBD test result
6. Vehicle RPM during scan
7. e-VIN
8. OBD communications protocol
9. PID count
10. DTC count
11. CAL ID
12. CAL version number
13. ECU Ids for monitors, MIL, & DTCs
14. Parameter ID
15. Service Mode \$01 information, including but not limited to:

PID 1C	OBD requirements to which the vehicle was designed (OBD compliance status)
PID 4D	Minutes run by the engine while the MIL is activated
PID 4E	Time since DTCs were cleared
PID 21	Distance traveled while MIL is activated
PID 30	Number of warm-ups since DTCs were cleared
PID 31	Distance traveled since DTCs were cleared
PID 46	Ambient air temperature

16. Service Mode \$09 information, including but not limited to:

PID 08 In-Use Performance Tracking Ratios (number of times all conditions necessary for a specific monitor to detect a malfunction have been encountered DIVIDED BY the number of times the vehicle has been operated in the specified conditions) for the following monitors:

Catalyst Monitor Bank 1
Catalyst Monitor Bank 2
O2 Sensor Monitor Bank 1
O2 Sensor Monitor Bank 2
EGR Monitor
Secondary Air Monitor
EVAP Monitor

17. Monitor type status/readiness (ready/not ready/not supported) for all monitors
18. Overall readiness status
19. Non-continuous monitor not-ready count
20. Indicators used for evaporative and catalytic converter codes
21. Indicators used for prior test evaporative and catalytic converter codes
22. Rejected vehicle returning for test
23. DLC access result
24. DLC inaccessible codes
25. KOEO result
26. KOER result
27. MIL status result
28. DLC tamper result
29. Communication result
30. DTCs (10 minimum)
31. Employee ID used for overrides of KOEO/KOER fails & inaccessible DLC
32. Monitor support profile: A single string of Y/N characters indicating support of each monitor in alphabetical order
33. Previous test monitor support profile
34. Previous test communication protocol
35. DLC location indicator
36. Indicator(s) for a fail with evaporative or catalytic converter codes
37. Indicators for retest of a vehicle that failed with evaporative or catalytic converter codes
38. Keyless ignition (KI) vehicle ID

IDLE TEST RECORD ELEMENTS – MDE

1. Idle test software version and/or revision number
2. Idle test start time
3. Idle test end time
4. Idle test measurement duration
5. Idle test result
6. Concentration of all measured emissions components. HC in parts per million; all others in percent
7. Standards for HC, CO & CO2
8. 2nd chance test indicator
9. Idle fast pass / fast fail indicators
10. HC, CO & CO2 results

11. Number of exhaust pipes
12. Visual inspection of the catalytic converter
13. CO + CO2 Result

GAS CAP TEST RECORD ELEMENTS – MDE

1. Gas cap test software version and/or revision number
2. Gas cap test result
3. Gas cap test duration (if not standard)
4. Measurement(s) used to make pass/fail determination
5. Standard
6. Gas cap adapter called out in the software
7. Scanned gas cap adaptor used
8. Identifier for vehicles exempt from gas cap testing

8.4. Quality Assurance

8.4.1.The Contractor shall submit a Quality Assurance (QA) and Maintenance Plan for the VEIP program operations, subject to MVA and MDE approval.

8.4.2.The Plan shall be designed and implemented to identify all inaccuracies in tests conducted. The Contractor shall take immediate corrective action for identified test inaccuracies, at no cost to the State. All findings of test inaccuracies must be reported to the MDE and MVA within one business day. The corrective action and results must be reported to the MDE and MVA within one business day after initiation of the corrective action.

8.4.3.The Contractor shall submit a quarterly report to the MVA and MDE on the precision and accuracy of the tests conducted during the calendar quarter. The pertinent statistics and analysis supporting the report shall be included.

8.4.4.The Plan shall describe the procedures and schedules for preventive maintenance of the testing equipment to assure reliability of the testing system over the life of the Contract. All maintenance and repair procedures performed by the Contractor shall be automatically documented for all equipment at all inspection facilities. The Contractor is responsible for reporting to the MVA and MDE any equipment malfunction within one business day of its discovery.

8.4.5.The Contractor shall submit a quarterly summary report to the MVA and MDE on maintenance and repairs performed during the calendar quarter, with the costs and results.

8.4.6.The Contractor shall update the Plan each calendar quarter. The quarterly update of the Plan shall be submitted to the MVA and MDE no later than fifteen (15) business days after the last day of each calendar quarter.

8.4.7.The Contractor shall allow State personnel access to the VEIP stations to observe QA procedures being performed during business and non-business hours.

8.4.8.The Contractor shall provide user interface capability which allows MDE audit inspectors access to perform QA procedures and to review QA and maintenance records.

8.4.9.The Contractor shall, within twenty-four (24) hours of notice by the MVA or MDE, make available an inspection lane and inspection personnel to evaluate QA procedures.

8.4.10. As a minimum, the Contractor shall include the following or equivalent QA procedures as part of the implemented Plan, subject to MVA and MDE approval.

- For the idle emissions test equipment, the Contractor shall implement QA procedures in accordance with the requirements of the BAR-97 Hardware Specifications, Current Edition.
- For the gas cap integrity test equipment, the Contractor shall implement QA procedures in accordance with the specifications contained in the EPA April 2000 Technical Guidance.
- For the OBD test equipment, the Contractor shall follow all manufacturers' QA procedures, and other QA procedures, including daily verification that scanners can communicate with all protocols, as approved by the EPA, MDE, and MVA.

8.5. Test Procedures

8.5.1. General

- The Contractor shall develop and maintain throughout the term of the contract written, up-to-date procedures for conducting the required vehicle emissions tests. The MVA and MDE shall approve all such written procedures.
- All written procedures shall be first provided to the MVA and MDE at least one month prior to beginning the transition period from the previous contractor to the new Contractor. Following approval by MDE and MVA, the new Contractor shall evaluate these procedures each calendar quarter thereafter. A report of the evaluation and any proposed revisions shall be submitted to the MVA and MDE no later than fifteen (15) business days after the last day of each calendar quarter. MVA/MDE and Contractor will meet to discuss the proposed revisions, schedule live demonstrations, if applicable, and set a date to begin implementation in the network. Contractor shall review and include relevant elements of current VEIP procedures manuals.
- All test procedures shall be conducted utilizing equipment that is properly calibrated and warmed up in accordance with the manufacturers' specifications.

8.5.2. Vehicle Preparation

- No repair or adjustments to any vehicle may be performed at a Public VEIP Station.
- Unless there is an obvious reason to reject a vehicle (e.g., overheating; oil, coolant or fuel leaks; excessive visible smoke, etc.), the test will proceed. Vehicles with obvious overheating, coolant or oil leaks, or any mechanical condition or other circumstance which may cause injury to inspection personnel, damage to the station or inspection equipment, or will affect the validity of the inspection, shall be rejected from inspection.
- All accessories shall be turned off prior to performing the test procedures.
- Vehicle information shall be entered into the system as specified in the RFP.

8.5.3. Emission Test Procedures

- The Contractor shall perform the On-Board Diagnostic (OBD) test for all applicable vehicles.
- The Contractor shall perform the idle test (including the catalytic converter check) and the gas cap integrity test for all applicable vehicles.
- The test system shall record the test results.
- The Contractor shall provide the vehicle operator with the inspection results.
- The Contractor shall refer the owner of a vehicle which has failed a test to a Customer Service Representative assigned to the inspection station for further information concerning waivers, certified emissions repair facilities, and the clean air benefits of vehicle emissions inspection and vehicle maintenance.

8.5.4. Gas Cap Integrity Test

- The gas cap integrity test shall be performed on all vehicles receiving the idle emissions test and catalytic converter check.
- The gas cap integrity test shall be performed in accordance with the flow rate method and procedures contained in the EPA April 2000 Technical Guidance, or with alternative, equivalent procedures approved by the MDE and MVA. Vehicles that fail the gas cap integrity test while passing the tailpipe emissions test shall fail the emissions inspection, for gas cap only. The Vehicle Emissions Inspection Certificate (VEIC) shall indicate inspection failure for gas cap only. For vehicles failing both the emissions test and the gas cap test, the VEIC shall indicate inspection failure for both emissions and gas cap.
- The software lookup information must identify the gas cap test adaptor to be used for testing for no less than ninety-eight (98) percent of the vehicles tested. The “adaptor not identified” rate cannot exceed two (2) percent of the vehicles tested. If this requirement is not met, the Contractor must implement corrective action, at no cost to the State, including software changes and/or updates as necessary.
- Gas cap test adaptors will be bar coded and delineated by color or other identifier. The inspector will scan the bar code on the adaptor used in the test. The scanned information will be retained in the vehicle test record.

8.5.5. Catalytic Converter Check

- The catalytic converter check shall be performed on all vehicles that receive idle tests.
- The catalytic converter check shall be performed through direct observation or through indirect observation using a mirror or other visual aid. These inspections shall include determination as to whether the converter is present and appears to be properly connected and in good repair.
- If the catalytic converter is not present, the Contractor shall be responsible for verifying the subject vehicle was originally equipped with a catalytic converter. Catalytic converter requirements can be verified by using emission control system resources such as Emission Control Systems Application (Cascade

Automotive Resources), Emission Control Application Tables (Mitchell Manuals), and Automotive Emissions Systems (Colorado State University).

- A vehicle shall fail the catalytic converter inspection if the catalytic converter is part of the original certified configuration and is found to be missing, disconnected, improperly connected, or visibly damaged.
- Vehicles that pass the idle emissions test while failing the catalytic converter check shall fail the emissions inspection, for catalytic converter only. The Vehicle Emissions Inspection Certificate (VEIC) shall indicate inspection failure for catalytic converter only, and shall describe the reason for the failure, e.g. missing, disconnected, improper, or damaged catalytic converter. For vehicles failing both the emissions test and the catalytic converter check, the VEIC shall indicate inspection failure for both emissions and catalytic converter, and shall provide, in addition to the emissions levels, the reason for the catalytic converter failure.

8.5.6.Idle Emissions Test

- The Contractor shall perform the idle test in accordance with procedures and requirements provided by MDE and MVA.
- The idle test shall include fast pass and fast fail per 40CFR Part 51, Subpart S, Appendix A.
- Vehicles failing the idle emissions test shall receive a second chance test with preconditioning.
- To verify that the exhaust reading is not being diluted in the exhaust system or at the sampling point, the test shall immediately end and any subject gas measurements voided if the sum of CO and CO₂ measurements falls below six (6) percent. When this occurs, a second chance test shall be performed. If the CO + CO₂ result on the second chance test is less than 6%, the test shall be voided and the motorist informed that the vehicle cannot be tested in its present condition.
- Vehicles with dual exhaust pipes shall be tested by having the inspector insert a single sample probe into the nearest exhaust pipe. These vehicles will be subject to the same test logic presented above for single exhaust pipe vehicles. A second chance retest may be done on either exhaust pipe.

8.5.7.On-Board Diagnostic (OBD) Test

- The Contractor shall perform the OBD test in accordance with procedures and requirements provided by MDE and MVA.
- The OBD software shall include an automatic retry to establish communications with the subject vehicle if the first attempt fails.
- An Exceptions Table for handling problematic vehicles will be provided by MDE and MVA.
- Vehicles not meeting monitor readiness requirements are rejected from testing

one time. Vehicles rejected for readiness shall be handled in accordance with procedures proposed by the Contractor, and approved by MVA/MDE, in response to Section 8.2.5 of the RFP.

- The OBD software shall flag tests where the VIN for the vehicle under test does not match the VIN provided by vehicle's OBD system, if OBD VINs are supported by the vehicle. The inspector must be prompted to check the VIN on the vehicle to determine that the correct vehicle is being tested.
- Vehicles failing for Catalyst or Evaporative diagnostic trouble codes (DTCs) must have the applicable readiness monitor set upon return for a retest, in addition to meeting the standard readiness requirements (one (1) or two (2) not-ready monitors allowed per State requirements). Vehicles will still be rejected for readiness only one time.

8.6. Vehicle Standards

8.6.1.All vehicles subject to the gas cap integrity test shall be tested against standards consistent with the EPA April 2000 Technical Guidance.

8.6.2.The idle emissions tests and catalytic converter checks shall be conducted in accordance with 40CFR PART 51, Subpart S, Appendix B (IV), and with standards provided by MDE and MVA, except that a tachometer will not be required. The Contractor shall provide a means of applying idle test standards for combinations of model year, vehicle type, and GVWR. The Contractor must be able to easily modify these standards at the direction of MVA/MDE without requiring a new software version.

8.6.3.All vehicles subject to the OBD test shall be tested against standards specified by MDE and MVA, and in accordance with 40 CFR PART 51, Subpart S.

8.6.4.Standards for the idle emissions test, catalytic converter check, OBD test, and gas cap test shall be applied as follows for re-inspection of all failed vehicles:

- Pass/fail standards for idle emissions retests shall be the same as initial test standards.
- Pass/fail standards for catalytic converter check retests shall be the same as initial test standards.
- Pass/fail standards for gas cap retests shall be the same as initial test standards.
- Vehicles with gas cap-only, idle test only, or catalytic converter check only initial test fail shall receive the idle emissions test, catalytic converter check, and gas cap test, during retest.
- Pass/fail standards and monitor readiness standards for OBD retests shall be the same as initial test standards, with the exception of vehicles that fail the initial test with catalyst or evaporative DTCs as specified in Section 8.5.7.

8.6.5.The Contractor shall make provisions to permit the implementation of potential future revisions or changes to any of the test standards at no cost to the State.

8.7. Waivers

8.7.1.All functions concerning the issuance of waivers shall be performed by MVA personnel where such personnel are assigned and on-duty at a Station, otherwise the Contractor's Customer Service Representative or Station Manager on-duty shall issue a valid repair waiver. The waiver shall be printed at the station, using the Contractor's data system, in a format and on a form approved by the MVA.

8.7.2.The Contractor's data system shall allow the Contractor's Customer Service Representative and/or MVA representatives on-duty at the time, if any, to enter waiver information into the Contractor's data base in a format prescribed by the State, and print the waiver information at the station on a form approved by the MVA. The waiver transaction record will be transmitted to the MVA on the same day the waiver is issued. Repair waiver records on both the Contractor's and the MVA's databases must be traceable to specific and corresponding test failures, for both initial and final emissions tests.

8.8. Vehicle Emissions Inspection Certificate (VEIC)

8.8.1.The Contractor shall provide the vehicle owner with a Vehicle Emissions Inspection Certificate (VEIC) in a format approved by the MVA and MDE, which clearly indicates the pass/fail status, all test results, time period that certificate is valid, whether the inspection was an initial inspection or a re-inspection, and the Valid Through Date. The VEIC shall contain the general statement that, "Vehicle repairs may be covered by the manufacturer's warranty."

NOTE: The VEIC form is used for all vehicle emissions inspections. The MVA requires that each VEIC must have a unique number. The Contractor must keep an up-to-date record/copy at each station of any VEIC which is voided, damaged, spoiled, or otherwise not issued. The Contractor shall be responsible for printing the VEICs, maintaining an adequate supply at each station, and maintaining control and security of the forms.

The VEIC for failed inspections shall include a 2-D barcode providing test results (test number, items failed) and vehicle information (VIN, year, make, model).

8.8.2.The Contractor's data system must be capable of allowing the printing of a record of the test results, in lieu of a duplicate VEIC, at the VEIP offices, VEIP stations, and MDE offices. This test record must contain all the information of the original VEIC, except it should not be pre-printed with the unique original VEIC number.

8.8.3.The Contractor must submit to the MVA a report by the tenth day of each month, which details the issued, un-issued, and voided certificates for the previous month at each station. All voided certificates for the report month must accompany the report when it is sent to the MVA.

8.9. Emission Related Recalls

8.9.1.The MDE will provide a database of recalls indexed by VIN when and if the US EPA makes such a list available to states. The Contractor shall provide and maintain as part of the system a means to identify vehicles with unresolved emissions recalls based upon data to be provided by the MDE when such data become available from the EPA on a regular basis. At a minimum, the Contractor and the MVA shall have a capability to store, retrieve, and update recall data that consists of the VIN, the numbers of the recall campaigns(s), and the date(s) that the repairs were performed, if applicable. The system shall be designed and

operated to ensure that:

- The State can provide owners of vehicles with unresolved recalls with information (via initial test notices) regarding the vehicles recall and test status; and
- The Contractor will automatically reject from testing vehicles with unresolved emissions related recalls.

8.9.2. Until an electronic database of recalls indexed by VIN is available, the Contractor will maintain at the front counter at each VEIP station the Recall Book for the purpose of referencing any pertinent recall information involving a customer's vehicle; keep current and review the Recall Book on a monthly basis; inform owners of vehicles that failed the inspection of any bulletins in the book involving their vehicle; and advise the owner that they may wish to contact the vehicle manufacturer / dealership and determine whether their vehicle is involved.

8.10. On-Road Emissions Inspection

8.10.1. The Offeror shall submit an On-Road Emissions Inspection Plan, for MVA and MDE approval, for conducting annual on-road emissions inspections using remote sensing as described below. The plan shall include a description of the site selection criteria, equipment to be utilized, target dates for the inspections, test procedures to be utilized, data collection procedures, and data record fields and formats. No testing procedures shall be implemented without prior approval of the MVA and MDE. The On-Road Emissions Testing Program shall be implemented only after direction from the MVA and MDE to proceed. MDE and MVA will establish exhaust standards and test frequencies, and are responsible for any enforcement processes outside of actual vehicle emissions inspections.

8.10.2. Equipment. The Contractor shall conduct on-road emissions inspections in each VEIP county and in Baltimore City, utilizing remote sensing equipment approved by the MVA and MDE. The Contractor shall furnish no less than one vehicle (and more than one if necessary), and all of the equipment required for this inspection program. The equipment shall be capable of:

- Measuring and recording levels of HC, CO, NOx, and CO2 in the vehicle exhaust;
- Capturing the complete license plate identification of the subject vehicle, including alpha numeric characters, state identification, and selected information printed on the license plate; and
- Assuring that the recorded exhaust measurements correspond accurately to identified vehicles.

8.10.3. Data Collection. Within thirty (30) calendar days after the on-road emissions inspection, the Contractor shall submit to the MVA and MDE a report along with the raw inspection data, in a format approved by the MVA and MDE, to include HC, CO, NOx, and CO2 test readings; the date, time and location of the inspection; the license plate numbers and state of the vehicles inspected; the identification of high and low emitters, as specified by MDE; vehicle speed and acceleration; and ambient temperature and humidity. Multiple inspections on the same vehicle shall be flagged in the data to ensure that vehicles are not double counted. Both formatted raw data and summary data shall be submitted in electronic form, as specified by the MVA and MDE. The summary report shall also include:

- Emissions data from the VEIP test lanes which are available for the vehicles subject to emissions inspection;
- The level of correlation between the test lane emissions data and the on-road emissions data for subject vehicles;
- Extrapolation of the on-road results to emissions results for the Maryland vehicle fleet subject to the VEIP; and
- The Contractor's assessment of the performance of the on-road emissions testing technology and methodology.

8.10.4. Quality Assurance. The Contractor shall submit a quality assurance and maintenance plan for the on-road emissions testing equipment, procedures, and data collection to MDE and MVA for approval. The plan shall include test assurance procedures, periodic quality assurance checks, and the maintenance procedures specified by the equipment manufacturer.

8.10.5. Inspection Procedures. The Contractor shall develop and maintain written on-road inspection procedures approved by the MVA and MDE. Additionally, the Contractor shall submit to the MVA and MDE for approval, no less than ten (10) business days in advance, its schedule of on-road emissions inspection dates, times and locations.

- The on-road emissions inspections shall be scheduled to occur at least once each year in each affected VEIP county and Baltimore City (i.e., each political subdivision subject to the VEIP). The testing shall be done between May 1st and October 31st annually. The on-road inspection shall produce valid readings and test results for at least 0.5 percent of the affected vehicles in each affected county and Baltimore City. If subsequent analysis by the MVA and MDE indicates that the inspections performed did not yield valid test results for at least 0.5 percent of the affected vehicles in each affected county and Baltimore City, MDE and MVA may require the Contractor, at no additional cost to the State, to increase the inspection rate in order to secure the required number of valid test records.
- The on-road emissions inspections may, at the discretion of the MDE and MVA, also include the collection of valid emissions inspections and test records for 0.5 percent of the vehicles in four (4) counties designated by MDE and MVA that are not subject to the VEIP. The testing shall be done between May 1st and October 31st annually. If subsequent analysis by MDE and MVA indicates that the inspections performed did not yield valid test results for at least 0.5 percent of the affected vehicles in each county, MDE and MVA may require the Contractor, at no additional cost to the State, to increase the inspection rate in order to secure the required number of valid test records.
- Before beginning the annual on-road inspection, the Contractor shall submit to MDE and MVA for approval a Scope of Work including the schedule for testing, the projected number of vehicles to be tested in each subject jurisdiction, a list of all potential sites, a description of how each site conforms with the site selection criteria, and an outline of the information and analyses to be presented in the final report.

- MDE will notify each affected jurisdiction of the plan to conduct on-road testing. The Contractor shall secure advance authorization and all necessary approvals from the local jurisdictions in which the testing will be conducted. The authorizations shall be submitted to MDE and MVA no less than ten business days in advance of the initiation of testing.

8.10.6. Subcontracting of On-Road Emissions Testing. With the written consent of the Procurement Officer, the Contractor may subcontract the on-road emissions testing program. Any subcontractor's proposal for the on-road emissions testing program will be subject to approval by the MVA and MDE prior to implementation. Any subcontract for the on-road emissions testing program will be subject to all the provisions of this RFP which concern subcontractors and subcontracting.

