

The Better Way for Vehicle Emissions Inspections in Virginia

Virginia Gasoline Marketers Council
Virginia Automotive Association

Legislative Counsel: The Keeney Group

Today & How We Got There

Federal Clean Air Act gave EPA broad regulatory and enforcement power to ensure States comply with Clean Air Act.

EPA determines air quality station locations in each state.

If a state does NOT comply:

- EPA has authority to withhold federal highway funds to state
- Can impose fines on manufacturers

- Extreme but possible provisions include:
 - no dry cleaning establishments
 - ban on grass cutting on weekends
 - ban on barbecues on weekends

Compliance is based on a system of “air quality credits”

- example: if a state’s emissions inspection and maintenance (I/M) program goes beyond the minimum, EPA may provide more flexibility for manufacturers

EPA sets parameters to determine if a region is

- (1) **attainment** area- no vehicle emissions inspections required
- (2) **basic** - limited type of emissions I/M required
- (3) **enhanced**- advanced type of emissions I/M required

Current provisions in Virginia Code:

Metro Richmond is designated to require emissions inspections using a basic I/M program. Program was never implemented since metro Richmond did not reach air quality levels which required Virginia to implement a program. Provisions still in Virginia Code require use of outdated test equipment.

Northern Virginia required to implement an enhanced I/M program.

EPA NOW requires:

Basic: OBD II (On Board Diagnostic) Computer Test for new model vehicles

TSI (two speed idle) tailpipe probe test for older vehicles (those without computers in vehicle)

Enhanced: OBD II computer test for new model vehicles, with higher parameters to pass the emissions test

Tailpipe probe test for older vehicles (those without computers), performed with the vehicle operating at a constant higher speed with vehicle strapped on a “dyno” (dynamometer)

- older vehicles considered “gross polluters” (cause most pollution)

Northern Virginia Enhanced I/M System

Virginia Adopted “Decentralized Test and Repair”- became model for Nation

- convenient with inspections sites in all areas of NVa
- compliance with Clean Air Act surpassed
- highly trained inspectors and repair technicians
- high level customer satisfaction

As an enhanced program, EPA requires Northern Virginia to include **Program Validation to verify program’s effectiveness**

- requires of ½ of 1% of total vehicles to be tested (for program validation)
- States given flexibility in how to conduct program validation

Currently, Virginia contracts with ESP to provide program validation with ESP’s on road RSD (remote sensing device).

Noteworthy for Northern Virginia

- 509 certified emissions stations
- 1,678 certified emissions inspectors
- 710 certified emissions repair mechanics

- 10 minute test for vehicles with on board computer
- 20 minute test time for “gross polluter” (older vehicles with no computer) (EPA requires these vehicles to be strapped onto a dyno for testing)

- In past 3 years and 2.5 million inspections at inspection stations, DEQ received **no complaints regarding tests at stations.**

- Emissions inspection every 2 years, \$28 fee per inspection
- 850,000 vehicles inspected in Northern Va EACH YEAR
- 1.7 million vehicles registered in Northern Virginia
- \$2 ANNUAL fee paid to DMV each vehicle when renewing vehicle registration. Fee transferred to DEQ.
- Total of **\$3.4 million paid by NVa vehicle owners ANNUALLY to DEQ.**

- **DEQ pays \$600,000 per year to outside contractor for “data collection”** (maintaining data from each inspection) and developing required reports for EPA, etc.)
- **DEQ pays \$400,000 per year to ESP for program validation (using RSD)**
- DEQ funds staff, instructors for inspectors and repair techs, and maintains training facilities and regional offices.

Future

States waiting for EPA to announce new parameters to determine which areas in each State will be required to implement emissions inspection and maintenance programs.

All agree Northern Virginia area to remain enhanced.

Most believe Metro Richmond and Hampton Roads will be required to implement a basic emissions I/M program. Winchester, Harrisonburg, Fredericksburg area and Roanoke Valley have also been mentioned.

REAL PROBLEMS WITH ESP's Remote Sensing Device (RSD)

2010 Statistics	Current Program (Testing at Certified Inspection Stations)	On-Road Remote "Clean Screen" or RSD	Notes
Number of tests	791,000	320,000	
% of fleet tested	100%	40.5%*	* $320,000 / 791,000 = 40.5\%$
Number of vehicles in fleet	1,700,000* (in NVa)		* Subject to biennial inspection.
Vehicles identified as polluters	40,245 initial failures	388 Notices of Violation (NOV) issued*	*151 of NOV total never came in for confirmatory testing
Evaporative (gas cap) failures	30,316	0* (not available)	RSD unable to perform required test.
False failure (Vehicles incorrectly identified as gross polluters)	0 (0%)	128 (54%)* These vehicles tested clean.	* $(128 / (388 - 151)) = 54\%$ * Each forced to bring vehicle to a referee station for a retest.
Accurate tests identifying gross polluters	40,245 (100%)	89 (37%)* These vehicles confirmed dirty.	* $128 / (388 - 89) = 37\%$
Referred for legal action for collection	0 (0%)	31 (8%)*	* 8% of people receiving NOV end up in "legal action"

Information from DEQ newsletters and DEQ 2011 stakeholder meetings. Northern VA current program is an Enhanced Inspection and Maintenance Program. ESP is the emission equipment manufacturer that has all patents on RSD technology.

Environmental Impact – Key to Compliance with Clean Air Act

2010 Statistics	Current Program (Testing at Certified Inspection Stations)	On-Road Remote “Clean Screen” or RSD	Notes
Failure rate	5.08%	0.027%*	* RSD only identifies miniscule % of gross polluting vehicles * $320,000/89 = 0.027\%$
False passes (Gross polluters identified as “Clean”)	0 (0%)	16,167*	* These gross polluting vehicles identified at site, but not by RSD
Gross polluters identified with 100% Current Program	43,180*		* $850,000 * 0.0508 = 43,180$
Gross polluters identified with 100% RSD		229*	* $850,000 * 0.027 = 229$
Number of false passes with 100% RSD		42,951*	* These gross polluting vehicles would not be identified by RSD and continue to be gross polluters. * $(850,000 * 5.08\%) - (850,000 * 0.027\%) = 42,951$

Cost–Benefit Analysis

2010 Statistics	Current Program (Testing at Certified Inspection Stations)	On–Road Remote “Clean Screen” or RSD	Notes
Dollars paid to inspection providers by DEQ	\$0.00	\$400,000*	* \$400,000 paid to ESP for program validation testing and 320,000 tests
Dollars paid to ESP by DEQ per gross polluter identified	\$0.00	\$4,494* per gross polluter identified	* $\$400,000 / 89 = 4,494$
Dollars paid to ESP by citizens (with 30% RSD)		\$6,630,000	* $(850,000 * .30) * \$26 = \$6,630,000$
Dollars paid to ESP by citizens per gross polluter identified (with 30% RSD)		\$100,454 per gross polluter identified	* $\$6,630,000 / 66 = \$100,454$

Jobs – Potential for Lost Jobs with RSD

2010 Statistics	Current Program (Testing at Certified Inspection Stations)	On-Road Remote “Clean Screen” or RSD	Notes
Number of Virginian’s Employed- NVa program	2,388*	>10	*1,678 inspectors + 710 certified emission techs
Number of inspection sites	509	1*	* 1 Roadside monitoring van
Net jobs lost with 30% RSD (legislative proposal) Original proposal called for up to 100% RSD testing	660* jobs lost 1,678 jobs lost		* Existing stations would contract both hours and employees. Certified inspectors typically are not trained to perform other jobs in automotive repair.
Potential job gains with expansion into Richmond & Tidewater	2,400 jobs gained		

Note: If 30% of vehicles were tested by RSD, RSD testing may result in the contractor (ESP) hiring approximately 2–9 additional employees (with increase of 1–3 vans).

Customer Satisfaction & Convenience

DEQ reported that during the **past 3 years**, with over **2.5 million inspections** provided at certified inspection stations... **DEQ received NO COMPLAINTS regarding testing at stations.** Perfect record at inspection stations!

Of the 388 Notices of Violation sent as a result of an RSD screening, DEQ indicates “several” complaints were received.

WHAT EPA and DEQ SAY ABOUT “CLEAN SCREEN”

Air Quality Credits Risked with RSD Use for Widespread Testing:

“Low emitter profiling (clean screen) carries a CREDIT LOSS due to the fact that some cars will be incorrectly clean screened out of traditional I/M testing....”

Range of 5% to 10% loss in (air quality) credits. (source: EPA420-F-98-023)

RSD to be Used for Program Validation, NOT a Substitute for Real Testing:

RSDs are to be used only for program validation, not to exceed ½ of 1% of vehicles.

“Federal regulations also require that a nominal 0.5% of the vehicles subject to an I/M program also be subject to “on-road testing” (one option which may include RSDs). ... “ (source: U.S. 40 C.F.R. 51.371 cited in VA DEQ’s 2008 Report to Governor and General Assembly, House Document 4)

For Financial Gain, RSDs Avoid Test Areas with High Emitters:

“ESP has a financial incentive to use high volume sites, as opposed to high emitter sites.” (Contractor paid on number vehicles observed rather than polluters found.)

(source: VA DEQ’s 2008 Report, House Document 4)

RSD Problems noted by EPA Office of Mobile Sources

(source: EPA 420-F-92-017 and EPA Office of Mobile Sources website)

Wider use of RSD for testing is NOT allowed:

NO_x measurement is required by the Clean Air Act for enhanced nonattainment areas. Yet, **“current (RSD) systems cannot measure nitrogen oxides**, another exhaust pollutant and important contributor to smog.”

“RSD also cannot measure “evaporative” emissions—gasoline vapors that vent into the air from hot engines and fuel systems. Fuel evaporation is a very significant source of hydrocarbon pollution that can exceed tailpipe emissions on hot days” (required by Clean Air Act)

“RSD (is) used to identify vehicles with malfunctioning emission controls **between scheduled I/M tests**... (emphasis added) **NOT in lieu of.**

“Can RSD Replace Enhanced Inspection and Maintenance Programs?”

No. The Clean Air Act provides for use of RSD as a supplement to enhanced I/M programs but ***not as a substitute for periodic emissions testing.***” (emphasis added)

RSD incorrectly identifies clean cars as dirty. It fails to use required EPA reference methods involving driving modes of acceleration, cruise and braking.

IMPORTANT FACTS

The suggested, **EXPANDED USE OF REMOTE SENSING DEVICES IS NOT AUTHORIZED** by the Clean Air Act nor has it been sanctioned by EPA.

Expanded use of RSDs raises serious questions **and RISK OF NON-COMPLIANCE, INCLUDING FEDERAL HIGHWAY FUNDS FOR TRANSPORTATION**, mandates on manufacturers, etc.

Use of **RSD FOR EMISSIONS TESTING IS SUBSTANDARD** when compared with testing results performed at emissions inspection stations. Though EPA states RSD does not identify 80-90% of the dirty cars needing repair, experience in Virginia is worse. RSD in Virginia did not identify 99.97% of dirty cars in actual testing. In Virginia, RSD only correctly identified 89 dirty cars out of 320,000 observed.

Increased use of **RSD is a “job killer.”** Based on the to have RSD test 30% of vehicles, over **600 jobs would be lost in Northern Virginia**. Certified inspectors and certified repair technicians are highly specialized and not typically trained for other automotive services

Use of inspection stations, **when the program is expanded into metro Richmond and Hampton Roads, will provide about 3,400 new jobs** (2,400 inspectors and 1,000 technicians.)

It is **FISCALLY IRRESPONSIBLE TO USE RSD**.

- ESP is paid \$400,000 per year to perform EPA mandated program validation and also 320,000 screenings (in 2010). Based on RSD results, ESP is being paid **\$4,494 per gross polluter correctly identified**.
- Based on their current rate of identifying gross polluters, if RSD provides clean screen certificates for 30% of the fleet, at their suggested \$26 per test... ESP will receive over \$6 million per year, at a **cost of \$96,066 per gross polluter identified**.

Solid Satisfaction: Zero complaints on 2.5 million tests (3 yrs) at stations.

Yet, 57% of the time RSD incorrectly labeled a vehicle dirty (generating complaints.)

CONCLUSIONS...

Northern Va's Enhanced I/M Program

Superior to and Preferred over RSDs

Tests at emissions inspections station result in

- ✓ Better test results
- ✓ More accurate testing
- ✓ More comprehensive testing
- ✓ Better on a Cost-Benefit basis
- ✓ Protection of Jobs

AND

- ✓ Compliance with Clean Air Act
- ✓ Best approach to clean air
- ✓ Protection of federal highway funds for Virginia

We can make it even better, and prepare other areas of Virginia...



Contract Coordinator Approach to Virginia's Emissions Inspection & Maintenance Programs

Goals:

- Increase consumer convenience and confidence
 - Use of cutting edge and most current and best technology
 - No increased costs to state or inspection providers
 - Ensure compliance with Clean Air Act
 - Generate cost savings/new revenue to Commonwealth
- 

Contract Coordinator Approach

Obligations of coordinator: selected by DEQ through competitive process

- Full compliance with Clean Air Act
- Qualify emissions inspection stations for license by DEQ
- Provide training and examination for certified inspectors and also certified emissions technicians
- Provide continuing education for inspectors and technicians
- Serve as total data collection entity for State, coordinate data from inspectors, and provide EPA required reports to DEQ. Essentially provide all services now under contract for \$600,000 per year.
- Be responsible for EPA required program validation (currently provided through \$400,000 per year contract.)
- Provide base equipment to all approved inspection stations including state of the art analyzer, computer with windows 7 operating system, and OBD II system meeting DEQ approved specifications. Equipment to use broadband and allow wireless test devices.
- Repair or replace equipment at inspection stations within 24 - 48 hours.
- Equipment to be compatible to inspection site's dyno and certain add on upgrades.

UPDATED SYSTEM OVERVIEW

All I/M Systems in Virginia (basic and enhanced):

- State of the art equipment provided by State Coordinator at no cost to inspection station.
- Based on OBD II system.
- System to allow add ons and upgrades at inspection's cost, including use of wireless devices for testing vehicles.
- Inspection sites to pay Coordinator nominal fee for each inspection, capped at the cost of what inspection provider now pays for maintenance contracts per system.
- Each inspection station, to participate in program, shall agree to provide 1 free program validation inspection per month. Program validation to be arranged by Coordinator. Program validation then uses apples to apples comparison.

Additional System Specifics

Enhanced (Northern VA)

- OBD II, but specifically allowing testing with wireless devices
- Continued use of dyno for gross polluters
- Consumer fee of \$28 per inspection stays same.
- Enhanced threshold points for passing test to be determined by DEQ.

Basic (metro Richmond, Hampton Roads if required by Clean Air Act):

- OBD II, but specifically allowing testing with wireless devices
- Two speed idle tailpipe test for older vehicles without on board computers.
- No dyno required.
- Inspection fee to be determined.
- Threshold points for passing test to be determined by DEQ.

WIN – WIN

- ✓ No increase in fees paid by consumers.
 - ✓ Contractor provides inspection stations with state of the art equipment and service at a cost not to exceed what providers are now annually paying for maintenance agreements.
 - ✓ More accurate program validation is implemented and managed by the contractor, eliminating that expense to Virginia (DEQ).
 - ✓ Competitive process in selecting Coordinated Contractor. Companies with experience in emissions inspection and maintenance programs, both nationally and internationally, are supportive of this approach and anxious to have the opportunity to be considered.
 - ✓ DEQ to supervise Contract Coordinator. Coordinator to provide almost all administration and oversight now being handled by DEQ.
 - ✓ \$1 million to \$1.5 million per year from savings should be available for Northern Va.
 - ✓ Meets EPA and Clean Air Act requirements... and allows other Virginia regions, when required, to implement a proven, efficient program.
- 