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**Gateway Clean Air Program
RapidScreen Annual Report
January – December 2006**

Prepared for:

Missouri Department of Natural Resources

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July 2007

Acknowledgments

The authors wish to acknowledge the support and input given by a number of individuals and organizations. Particular thanks are extended to the following contributors:

Haskins Hobson, MDNR for providing many helpful comments and suggestions.

ESP Program Operations Division for providing data access and operational information.

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Glossary of Terms and Abbreviations

Basic	A set of vehicle I/M program inspection requirements defined by the U.S. EPA that may be used in areas not required to implement an Enhanced I/M program; the inspection procedure usually involves idle testing
Clean Screening	The process of identifying vehicles with low emissions that are then exempt from emission inspection at an inspection station
CO	Carbon monoxide
CO ₂	Carbon dioxide
Cutpoint	An emissions level used to classify vehicles as having met an emissions inspection requirement
Enhanced I/M	A set of more rigorous vehicle I/M program inspection requirements defined by the U.S. EPA that usually involves IM240 testing
EPA	United States Environmental Protection Agency
ESP	ESP Missouri Inc., the MDNR contractor for the Gateway Clean Air Program
Excess Emissions	Vehicle emissions that exceed an I/M cutpoint
FTP	Federal Test Procedure
g/mi	Grams per mile, the units of measurement for FTP and IM240 tests
GVWR	Gross Vehicle Weight Rating
HC	Hydrocarbons
High Emitter Identification	The on-road identification of vehicles with high emission levels
Hybrid	The vehicle passed the most recent remote sensing measurement and meets low emitter index cutpoints.
I/M	Inspection and maintenance program
Idle Test	A tailpipe emission test conducted when the vehicle is idling and the transmission is not engaged
IM240 Test	A loaded-mode transient tailpipe emission test conducted when the vehicle is driven for up to 240 seconds on a dynamometer, following a specific speed trace that simulates real world driving conditions

kW/t	Kilowatts per metric ton, the units of measurement for vehicle specific power
LDGV	Light-duty Gasoline-powered Vehicle
LDGT	Light-duty Gasoline-powered Truck
LEI	Low Emitter Index
MDNR	Missouri Department of Natural Resources, the oversight agency for the Gateway Clean Air Program
MDOR	Missouri Department of Revenue, the state agency responsible for vehicle registration renewal and tracking
NO _x	Oxides of nitrogen, usually measured as nitric oxide (NO)
OBD-II	On-board Diagnostic system
OBD I/M	OBD-II inspection method
Repairable Emissions	The emission reductions that can be obtained by repairing a vehicle. The amount of repairable emissions is equal to or greater than the amount of excess emissions
RS≡A	Remote Sensing Air Inc., a St. Louis-based company that ESP Missouri has contracted to conduct RapidScreen quality assurance
RSD	Remote Sensing Device
RSD-2	The RapidScreen method for exempting vehicles from station inspections by requiring that the two most recent passes by the RapidScreen vans meet the clean screen requirements.
VIN	Vehicle Identification Number
VDR	Vehicle On-road Record
VMR	Vehicle RapidScreen Mailing Record
VMT	Vehicle Miles Traveled
VSP	Vehicle Specific Power; estimated engine power divided by the mass of the vehicle
VTR	Vehicle Test Record

I. Summary

The Missouri Department of Natural Resources (MDNR) operates a centralized vehicle emissions inspection and maintenance program to improve air quality in the greater St. Louis metropolitan area. The Gateway Clean Air Program consists of a biennial enhanced I/M program in Jefferson County, St. Charles County, St. Louis County and St. Louis City and a basic I/M program in Franklin County. The centralized program testing is performed by ESP Missouri, Inc. under contract to the MDNR.

The Gateway Clean Air Program is the first I/M program in the country to integrate clean screening from the outset as a means of improving motorist convenience and reducing the overall number of inspection lanes required. The program design has a goal of using clean screening to exempt up to 40% of the fleet from station based testing for the convenience of the vehicle owners. The clean screen methods available in the design were a mandatory exemption for the two most current model years with the balance to be exempted using remote sensing clean screening methods, and, at the beginning of the program, low emitter indexing. The contractor is required to report annually on the effectiveness of the clean screen program known as RapidScreen.

Preliminary remote sensing data collection started in October 1999. The first pilot RapidScreen notices were issued in the first quarter of 2000. Full RapidScreen processing and full testing at stations commenced in April 2000. The first RapidScreen audit report¹ covered the preliminary six-month startup period from October 1999 through March 2000 and the first twelve months of full program operations from April 2000 through March 2001. In order to bring the reporting back onto a calendar year cycle, the 2001 report covered the full calendar year for 2001. The present report covers the calendar year 2006.

A. *RapidScreen Effectiveness*

In 2006, RapidScreen notices were sent to 184,110 vehicle owners and 144,178 owners took advantage of the program by redeeming notices (21% of the tested fleet). New model vehicles exemptions for 2006 and newer vehicles are typically 16%. Therefore, with total exemptions of 37% the program nearly reached the goal of exempting up to 40% of vehicles from station inspections using clean screening methods. Section III of this report contains specific information on the number of on-road measurements and the monthly RapidScreen notices issued and redeemed.

Quality control and quality assurance continue to be important elements of the success of the RapidScreen program. The tag editing of license plate images is controlled using 200 quality assurance samples per dataset with an annual error rate of <1% for plates entered. All errors identified are corrected. The average QA error rate in the RapidScreen notice processing (RSD Image QA) for 2-Hit Clean screen matching two images with registration is ~0.5% from tag edit errors and about 2.1% from other sources. Additional statistics on quality control and quality assurance activities are provided in section III. C.

The emissions effectiveness of the RapidScreen program has been calculated using the results of a random 2% audit sample of vehicles identified as clean by the RapidScreen program. Instead of receiving RapidScreen notices, these vehicles are tested at the inspection stations. The audit sample test results are then used to calculate the air quality impact of exempting the RapidScreen vehicles from a station-based test. The calculations are described in section IV and section VI.

The RapidScreen program exempted 34% of the vehicles from station testing while retaining the vast majority of the I/M program benefits. The RapidScreen program retained at least 93% of HC tailpipe reductions, 85% of gas cap related HC reductions, 98% of CO reductions and 96% of NOx reductions of the Gateway Clean Air Program. The credit loss measured for OBD vehicles is very small compared to the Mobile6 projected I/M benefits for these vehicles. Therefore, the program continues to be effective even though most affected vehicles are OBD equipped.

The measured emissions reductions for the Gateway Clean Air Program for 2005 were 512 tons of exhaust HC, 6,025 tons of CO, and 302 tons of NOx for one year of vehicle travel based on the IM240 driving cycle. Pre-OBD-II vehicles (1995 & older) were 25% of vehicles tested and yielded 70% of the measured HC and CO reductions and 60% percent of the measured NOx reductions. Emissions reductions from repairs made between inspection cycles or prior to initial inspection, e.g. as a result of a malfunction indicator light, are not all included in the measured reductions. In addition, the reductions noted above are based on the IM240 driving cycle. Reductions estimated by the EPA Mobile emissions model, which models regional highway driving conditions and cold start emissions, are greater.

B. On-Road Fleet Emissions

The approximately 3.1 million measurements collected for the RapidScreen program in 2006 have been used to establish the emissions characteristics of the on-road fleet. Charts showing emissions by vehicle type and model year are provided in section V.

C. Suggested Follow-up

Suggested follow-up issues are presented in section VII. The introduction of pass/fail OBD inspections without tailpipe measurements in June 2005 required that consideration be given as to how to evaluate these vehicles. On-road remote sensing measurements have been converted to IM240 g/mi equivalent values using a correlation of RSD vs. IM240 emissions created from 2002 on-road measurements and station test results in order to provide emissions data for program evaluation.

Testing a random sample of OBD-II equipped vehicles using IM240 would facilitate a more accurate correlation of RSD emission values to IM240 g/mi emission values for these vehicles. This was recommended in the 2005 Annual Report but was not implemented.

Most I/M benefits from OBD vehicles are not directly measurable except by comparison to Mobile6 projected non-I/M emissions levels. The impact of clean screening on OBD vehicles

needs to be considered in this context. It may also be appropriate to review the use of tighter RSD screening standards for OBD-II vehicles.

In 2007, the program will switch to a decentralized model with OBD testing being performed at licensed test and repair facilities in combination with safety testing. Tailpipe testing will cease and be replaced by evaporative tests on older vehicles and OBD testing for newer vehicles. Maintaining a remote sensing presence would permit continued evaluation of vehicle emissions and the effects of the program change.

II. Program Description and Reporting Requirements

A. *RapidScreen and I/M Program Elements*

1. *I/M Program Overview*

The Gateway Clean Air Program implemented in the St. Louis metropolitan area consists of a centralized enhanced biennial I/M program in Jefferson County, St. Charles County, St. Louis County and St. Louis City and a centralized basic I/M program in Franklin County. The program tests gasoline-powered passenger vehicles under 8,500 pounds Gross Vehicle Weight Rating (GVWR). Station-based testing began on April 5, 2000 for May 2000 vehicle registrations. In the Enhanced area, even model year vehicles are tested in even years and odd model year in odd years. The EPA phase-in cutpoints were used from April 2000 through February 2002 when the final cutpoints were adopted for the Enhanced Area. The EPA recommended idle test cutpoints are currently in use in the Basic Area.

The Missouri Department of Natural Resources (MDNR) oversees the Gateway Clean Air Program. ESP Missouri, Inc. was contracted through a competitive bid process to perform the testing operations for the Gateway Clean Air Program.

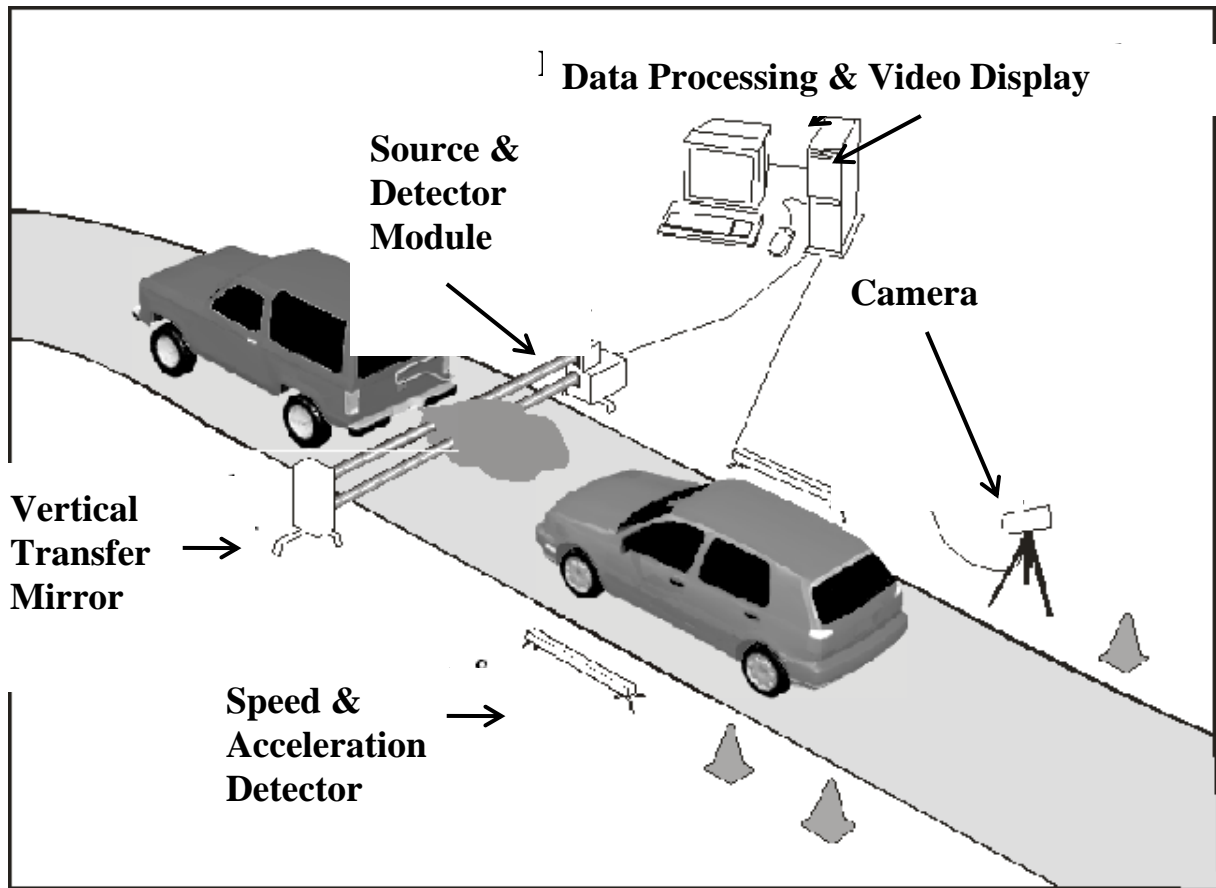
The Gateway Clean Air Program is the first I/M program in the country to incorporate clean screening from the outset. Clean screening is a relatively new I/M program feature announced by the U.S. EPA in a guidance document issued in May 1998³ that allows low emitting vehicles to be exempted from emission testing at inspection stations. On-road vehicle emissions are typically measured using remote sensing devices (RSD). The typical setup is illustrated in Figure II-1. Those vehicles that are determined to have emissions below specific cutpoints are exempted from having to come to an emissions testing station to obtain their emissions test. The clean screening program implemented in Missouri is known as RapidScreen.

RapidScreen was designed into the Gateway Clean Air Program to maximize motorist convenience. Up to 40% of the vehicles do not have to be emission tested at a test station. Owners of these vehicles can forego the travel to a test station, which is estimated to be an average round-trip distance of 8 miles and an average travel time of 30 to 45 minutes, in addition to the time actually spent at the test station.

Vehicles registered in the Basic area (Franklin County) were allowed to obtain an annual basic inspection and registration prior to August 28, 2003 when they were required to have a biennial basic inspection and registration. Both prior to and after August 28, 2003, Franklin County residents could obtain a biennial inspection and registration including the option of participating in the RapidScreen program.

As of August 28, 2004, all vehicles more than 26 years old are exempt from the IM testing.

Figure II-1 On-road Remote Sensing Setup



2. *RapidScreen Methods*

The RapidScreen program design includes a statutory exemption for the newest two model year vehicles, accounting for approximately 15 to 17% of the fleet, and for additional vehicles to be selected using clean screening methods to exempt up to a total of 40% of vehicles from station inspections. During the first three and a half years of the program, 20% of vehicles were to be selected for RapidScreening using remote sensing.

Initially three clean screening methods were used to select vehicles for the RapidScreen program:

- RSD-2 – the vehicle passed the two most recent RSD measurements made on different days.
- Hybrid – the vehicle passed the most recent remote sensing measurement and meets low emitter index cutpoints.
- LEI – the vehicle is a make/model that has performed well on past emissions tests and, thus, meets low emitter index cutpoints.

Additional details about the three clean screening methods are provided in Missouri I/M Program Clean Screening Plan².

The original MDNR design called for the contractor to select at least 20% of the vehicles to receive RapidScreen notices using the two measurement RSD Clean Screening method described in the EPA Clean Screening Guidance document³, which is designated in this documents as RSD-2. This method uses the two most recent RSD measurements for a vehicle collected on different days within the twelve months prior to the registration renewal date. The remaining vehicles were to be selected to receive RapidScreen notices using either the EPA-approved LEI method or an alternative method that has been approved by the EPA and the MDNR. In their response to the MDNR Request for Proposals, ESP proposed, in addition to the RSD-2 method, to use both the LEI method and the Hybrid method, which is an alternative method. The LEI method was dropped in fall 2000 and only the RSD-2 and Hybrid methods were used after that time.

The RapidScreen cutpoints used for the RSD-2 method were unchanged from the previous year at 200 ppm HC, 0.5% CO and 2,000 ppm NOx. Vehicle emissions must not be greater than any of the three values on the most recent two measurements collected within 12 months of the registration due date and the previous test result for the vehicle must not be a fail (F) in order to be eligible for a RapidScreen notice.

With the Hybrid method, only the most recent on-road measurement within one year of the registration renewal date is considered. The vehicle emissions must not be greater than any of the three RSD-2 cutpoints on the most recent measurement and the previous test result for the vehicle must not be a fail (F). In addition, the vehicle must be in a group of vehicles shown to have low repairable emissions or low fail rates within the last two years.

B. Reporting Requirements

1. RapidScreen Reporting Requirement

ESP Missouri, Inc., the vehicle emissions testing contractor for Missouri Department of Natural Resources, conducts the RapidScreen program as part of the Gateway Clean Air Program. The contract requires ESP Missouri to report annually:

- The number of vehicles clean screened broken down by vehicle year, make and model and by county and ZIP code (See section III. B.);
- Information regarding the random sample of vehicles required to undergo emissions testing instead of being clean screened, including, but not limited to, a comparison of the remote sensing records, vehicle profile or model year compared with the actual emissions testing records of the random sample (See sections IV. B. and IV. C.).

2. On-Road Reporting Requirement

The Clean Air Act Amendments of 1990 require enhanced I/M programs to supplement the station-based testing with an on-road/remote sensing-based high emitter identification element.

The Code of Federal Regulation (CFR), chapter 40, section 51.371, defines on-road testing as “the measurement of HC, CO, NOx and/or CO₂ emissions on any road or roadside in the

non-attainment area or the I/M program area. On-road testing is required in enhanced I/M areas and is an option for basic I/M areas.”

The general requirements are:

- (1) On-road testing is to be part of the emission testing system but is to be a complement to testing otherwise required.
- (2) On-road testing is not required in every season or on every vehicle but shall evaluate the emission performance of 0.5% of the subject fleet on each inspection cycle, including any vehicles that may be subject to the follow-up inspection provisions of paragraph (4) below.
- (3) The on-road testing program shall provide information about the emission performance of in-use vehicles by measuring on-road emissions through the use of remote sensing devices or roadside pullovers including tailpipe emission testing. The program shall collect, analyze and report on-road sensing data.
- (4) Owners of vehicles that have previously been through the normal periodic inspection and passed final retest and found to be high emitters shall be notified that the vehicles are required to pass an out-of-cycle follow-up inspection; notification may be by mailing in the case of remote sensing on-road testing or through immediate notification if roadside pullovers are used.

Although the Gateway Clean Air Program is an enhanced I/M program, the St. Louis non-attainment area is only required to meet the basic I/M program performance standard. Therefore, while the Gateway Clean Air Program is collecting, analyzing and reporting on-road information (See section V), neither the program or the state agency have the resources or authority to notify high emitters and to mandate an emissions test for an out of cycle vehicle. Significant additional resources, contractual changes and statutory and/or rulemaking changes would be needed for adding these tasks to the program.

C. Sources of Data

Data used in the analyses in this report are primarily drawn from the RSD unit measurements, the database of vehicle registrations and the I/M test database maintained on ESP Missouri’s host computer system.

The following sections describe the key information in the host computer system.

1. Remote Sensing Information

RSD Measurements: RSD Unit, Date and Time, Vehicle Plate, HC, CO, CO₂, NO_x, speed and acceleration.

RSD Deployment: RSD Unit, Shift, Site and Date.

RSD Sites: Site, Description of location, Slope of site in degrees.

2. *Low Emitter Index (LEI)*

The low emitter index (LEI) table is indexed by vehicle type, model year, make, model, engine type and number of cylinders. The table contains estimates of failure rates and repairable emissions for each make/model based on the results of over one million emissions tests. For the 2006 registrants, the table was compiled using IM240 and OBD I/M tests in Missouri during 2004 and 2005. In prior years, Colorado data was also used to ensure sufficient data.

The low emitter index is updated periodically, incorporating station-based results from the testing of Missouri vehicles. For 2005 and 2006 registrants, the table has been updated monthly.

3. *Vehicle Registration Data*

The vehicle registration table (VRR) contains information about each registered vehicle, including the unique vehicle identification number (VIN), the vehicle plate, make, model, model year, fuel type, owner name and address, zip code and county code.

4. *Gateway Clean Air Program Data*

Several tables contain emissions test information:

- VDR – repository of all RSD measurements with the registered vehicle VIN added from the VRR when a plate is matched.
- VMR – repository of RapidScreen mailer (notice) records that contains references to the RSD measurements or LEI status that make a vehicle eligible for RapidScreen.
- VTR – the primary repository for all emission test results, including records for vehicles that have completed the RapidScreen process through the redemption of notices. The VTR contains a result that indicates whether and by what method vehicles redeemed a RapidScreen notice. A RapidScreen status indicator identifies vehicles selected as part of the RapidScreen audit sample and the RapidScreen method used to determine eligibility.

Remote sensing records are first stored in the VDR table. Each month, registration records for vehicles that are due to renew and are subject to the inspection program are identified. The VDR table is scanned to identify matching remote sensing records that are then analyzed to identify the vehicles that have qualified for RapidScreen. The registration and remote sensing information for qualifying vehicles is written to the VMR file. After quality control and quality assurance checks have been completed (See section III. C.), the VMR file is used to generate RapidScreen notices that are mailed to vehicle owners. If a vehicle owner chooses to redeem the notice, the RapidScreen result is recorded in the VTR table.

5. *RapidScreen Random Audit Sample*

Two percent of the vehicles that qualify for RapidScreen notices are randomly selected for the RapidScreen audit sample (2% audit sample). These vehicles are not mailed RapidScreen notices and instead receive a station-based emissions inspection. As noted

earlier, the results of the station inspections for RapidScreen audit sample vehicles are stored in the VTR table.

III. RapidScreen Operations

A. Monitoring Activities

1. Sites used

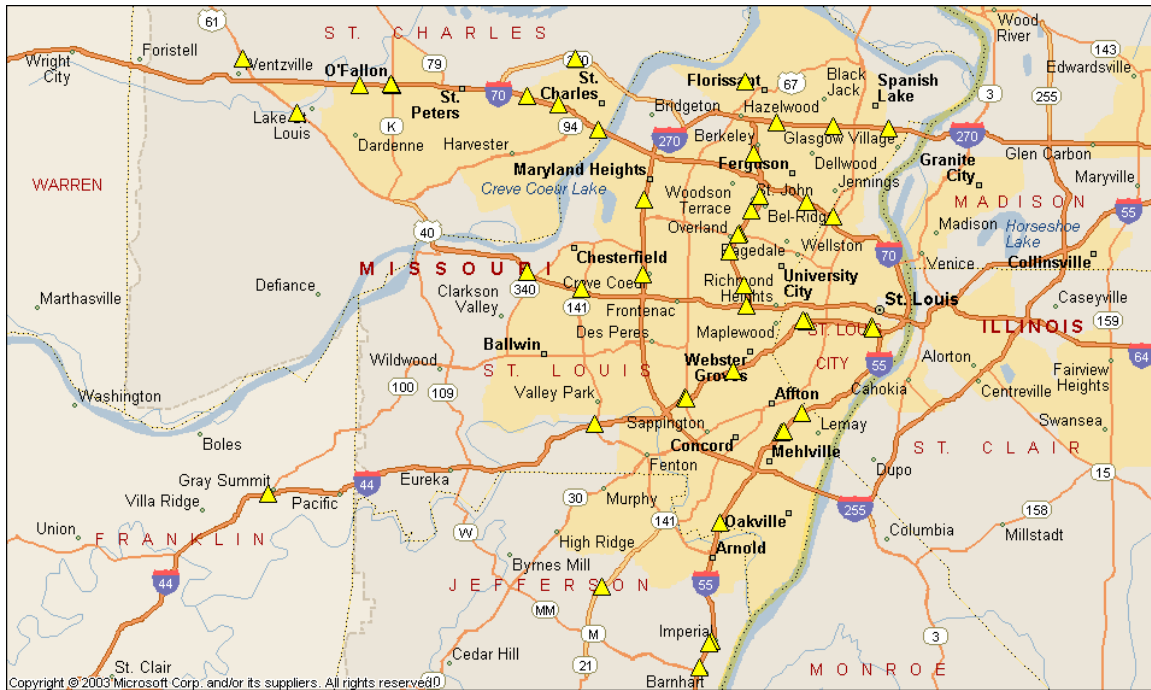
Forty-five sites were used during the period (See Appendix A1). A map showing the sites is presented in Figure III-1. During 2006, two new sites were approved by the Missouri Department of Transportation (MODOT). Information retained about each site includes the type of site, e.g. on-ramp or surface street, cross streets, city/county, township, zip code, slope. The slope of a site combined with vehicle speed and acceleration is used to determine the specific power output of the vehicle engine at the time the remote sensing measurement is made. At preferred sites, a majority of vehicles are operating with moderate engine power.

Vehicle specific power (VSP)^{4,5} is a useful measure of the vehicle load in kilowatts per metric ton (kW/t). The engine power output of a vehicle passing a remote sensing unit depends upon the grade of the site, the vehicle speed and the vehicle acceleration. The grade of the site is measured during the site selection process. Speed and acceleration are measured for each vehicle. Ideally, vehicles passing remote sensing units will have a VSP in the 3 to 22 kW/t range. Above and below these power levels, tailpipe concentrations can be significantly higher than normal. At low power levels, engines virtually shut down and yield only a small volume of tailpipe gas. This can result in significantly higher pollutant concentrations than when the engine is running normally even though the mass of pollutants is quite small. At high power levels, vehicles are likely to be operating in a commanded enriched fuel/air ratio. The Federal Test Procedure (FTP) used to certify new vehicles only simulates VSP levels up to 22 kW/t. Above this level, vehicles are often designed to use enriched mixtures to obtain more power.

For clean screening, the VSP range is important to the extent it may prevent a vehicle from passing the RapidScreen criteria. Measurements made when the vehicle is outside the controlled range may prevent the vehicle from meeting the clean screening cutpoints even though it is operating correctly. Since NO_x emissions vary with engine load, it is possible that vehicles that would fail a station test for NO_x could emit sufficiently low NO_x to pass the RapidScreen NO_x standard when operating at low VSP levels. However, the RSD results do not indicate this to be a problem at current cutpoints.

For fleet evaluation and high emitter identification, it is useful to use remote sensing measurements that are within the range of engine operating conditions over which emissions are intended to be controlled.

Figure III-1. RapidScreen Sites used in 2006



2. RSD Units

The remote sensing units deployed in Missouri are RSD-3000 mobile units also called AccuScanTM. The design is based on a technical platform developed at the University of Denver by Dr. Donald Stedman. ESP engineers have commercialized this equipment and continue its development.

The mobile unit includes the equipment required to provide measurement of emissions as well as speed and acceleration readings and license plate software. Five main components comprise the RSD-3000 system:

- Infrared and ultraviolet source and detector units;
- Camera to collect plate image coordinated with gas reading;
- Control console with computer system;
- Laser-based speed and acceleration measurement system;
- License plate tag editing system.

The primary combustion gases HC, CO, NO_x and CO₂ are measured simultaneously along the same optic path to ensure the proper application of the combustion gas equations. HC, CO and CO₂ are measured using the infrared beam, and NO_x is measured using the ultraviolet beam. To avoid interference between vehicles, the RSD-3000 unit is capable of completing the vehicle emission measurement within 0.6 second and all measurements for a vehicle including emissions, speed, acceleration and license plate image within one second.

The RSD unit takes multiple rapid readings for each vehicle to characterize the exhaust plume profile and evaluate whether a valid measurement of a vehicle's exhaust has been achieved. The criteria include how much vehicle exhaust plume is available for the duration of a 0.6 second sampling period, evaluation of whether plume measurements are consistent with normal plume dissipation, and correction for changes in background concentrations of emissions.

RSD units are certified to meet accurate measurement of calibration gas trailed by a specially- modified vehicle under controlled conditions using quad-blend [CO₂, HC (propane), CO, NO_x (NO)] calibration gases. The RSD tolerance for each pollutant is:

- Hydrocarbon (HC): ± 150 parts per million (ppm) or $\pm 15\%$ of the expected HC concentration {whichever is greater} throughout the range of HC concentrations. Hydrocarbon measurements are expressed in their hexane equivalent measurement in ppm.
- Carbon monoxide (CO): 0.25% CO or $\pm 10\%$ of the CO value {whichever is greater}.
- Oxides of nitrogen (NO_x): ± 250 parts per million (ppm) or $\pm 15\%$ of the expected NO_x concentration {whichever is greater} throughout the range of NO_x concentrations. Calibrations and calculations are for NO.

The mobile unit is equipped with a speed and acceleration measurement system that uses extremely accurate low energy lasers to calculate the speed of the vehicle to within ± 0.5 mile per hour and acceleration to within ± 0.3 miles per hour per second at the same time the exhaust is measured.

The system captures emissions readings and rear pictures of vehicles that pass through the RSD beam. The video and emissions readings taken are stored directly on the hard drive of the collection PC in the collection van. Image files are compressed and transferred to the Host system at the ESP Missouri headquarters at the end of each collection day.

3. *Number of Measurements*

Table III-1 provides a monthly summary of the data collection statistics by record, dataset and shift. A calendar year summary is provided at the foot of the table. A dataset is a unique set of data collected by one RSD unit at one site on one day. The data may have been collected over either one or two shifts. The shift is a collection period of one remote sensing unit operated by one operator for a given shift period. For 2006, data collection was performed using single shifts of 13.5 hours. The collections on Monday, Wednesday and Friday were set for 7 am to 5 pm and for Tuesday and Thursday from 8 am to 6 pm.

Water droplets in the air interfere with remote sensing operation. Remote sensing units are not operated in the rain and snow or when there is excessive spray from tires. Freezing weather can also cause water vapor in the tailpipe exhaust stream to rapidly condense into mist and prevent remote sensing units from operating. The relatively low number of records collected in the winter months was due to the poor weather conditions described above that reduced the number of days of operation.

A total of over 3.1 million remote sensing records were collected during the calendar year 2006.

Table III- 1 Summary of 2006 Collection Data

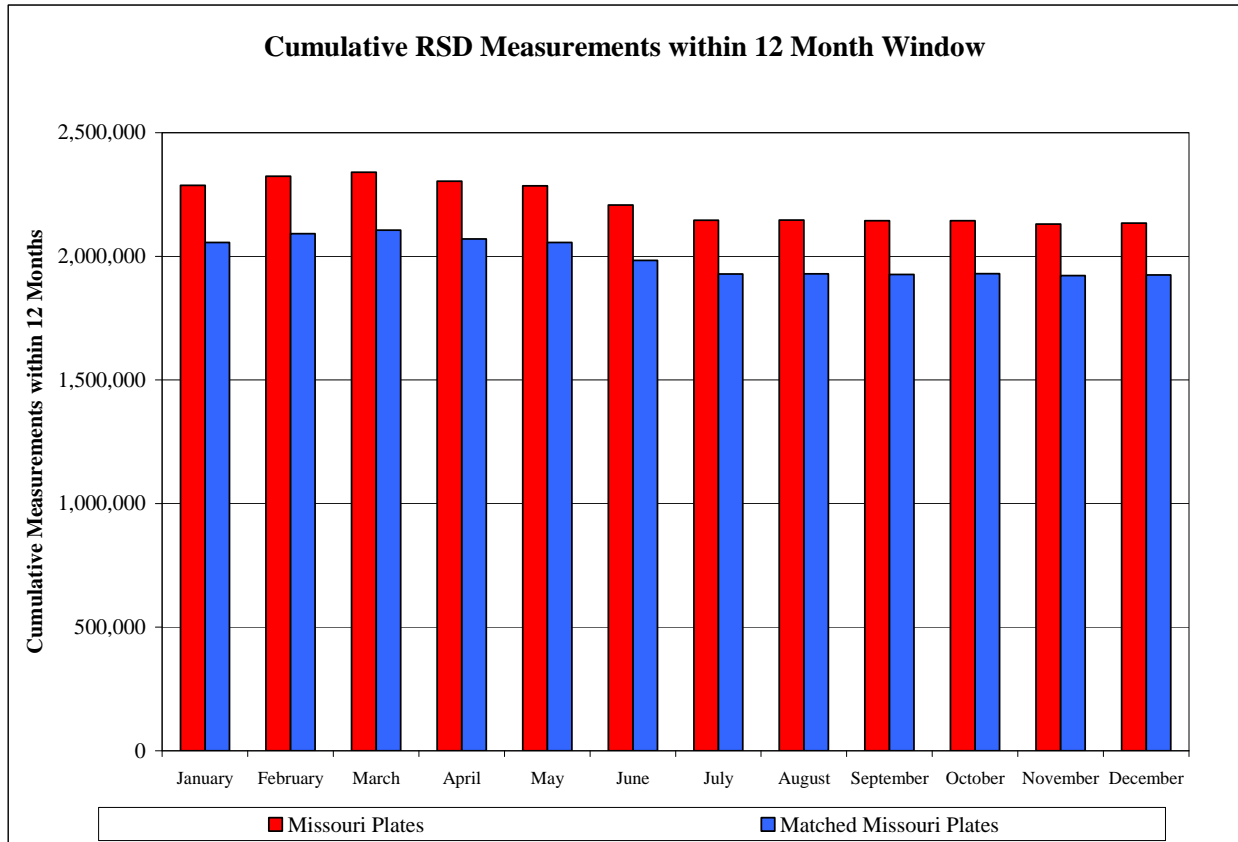
Year	Month	Avg. Units	Active Days	Total Datasets	Average Records Per Dataset	Shifts	Avg. Records Per Shift	Total Records	Valid Records	%Valid Records
2006	1	3.6	18	64	4,085	118	2,216	261,464	194,809	75%
2006	2	3.7	19	70	3,841	130	2,068	268,884	211,965	79%
2006	3	3.3	21	70	3,509	125	1,965	245,645	203,355	83%
2006	4	3.2	21	68	3,970	122	2,213	269,985	228,440	85%
2006	5	3.0	24	72	3,997	112	2,570	287,818	244,362	85%
2006	6	3.2	22	70	4,233	115	2,576	296,283	248,467	84%
2006	7	3.5	24	85	3,546	145	2,079	301,422	253,537	84%
2006	8	3.0	24	71	4,118	118	2,478	292,387	253,814	87%
2006	9	2.9	22	64	4,417	103	2,745	282,697	248,316	88%
2006	10	2.5	23	58	3,852	92	2,428	223,402	196,733	88%
2006	11	3.1	22	69	3,130	108	1,999	215,936	183,943	85%
2006	12	3.3	16	52	3,561	82	2,258	185,165	153,634	83%
TOTAL 2006			256	813	46,260	1,370	2,285	3,131,088	2,621,375	84%
<i>Average 2006</i>		<i>3.2</i>	<i>21</i>	<i>68</i>	<i>3,855</i>	<i>114</i>	<i>2,300</i>	<i>260,924</i>	<i>218,448</i>	<i>84%</i>

The cumulative number of remote sensing records collected within a twelve-month period is shown by month in Figure III-2. The corresponding number of records with valid HC, CO, CO₂, NO_x, speed, and acceleration measurements with a Missouri plate entered are indicated by the shorter bars. Of the total records collected during 2006 (3.1 million), 68% (2.1 million) had Missouri plates entered and 60% (1.9 million) were matched to Missouri registrations in the non-attainment area in the VRR. The difference between total records and those with Missouri plates is due to incomplete measurements (~16%), obscured plates (~7%), out-of-state plates (~7%), heavy-duty vehicles (GVW) not entered (~1%), and special government plates not in the registration database (~1%). The difference between the plates entered and plates matched to registrations (~8%) is due to valid Missouri plates from out of area (i.e. not from counties in the non-attainment area) and due to purchase of a new vehicle or transfer of ownership not in the registration database at the time of the match run. All parameters have improved significantly each year from 2001 to 2006 due improvements in training, equipment maintenance, site strategies, tag editing capabilities, and updating of the registration database.

According to the EPA Clean Screening Guidance document³, remote sensing measurements must be gathered within twelve months of a vehicle's registration renewal date. Records collected more than twelve months previously are not used to make a clean screen determination. Therefore, for example, the last pair of bars in Figure III-2 shows the measurements made from January 1 through December 31, 2006.

Cumulative valid records with Missouri plate entries and collected within a twelve month period (red lines) decreased slightly from 2.3 to 2.1 million Missouri plates throughout 2006 while records matched to IM area vehicles fell from just above to just below 2 million records available each month.

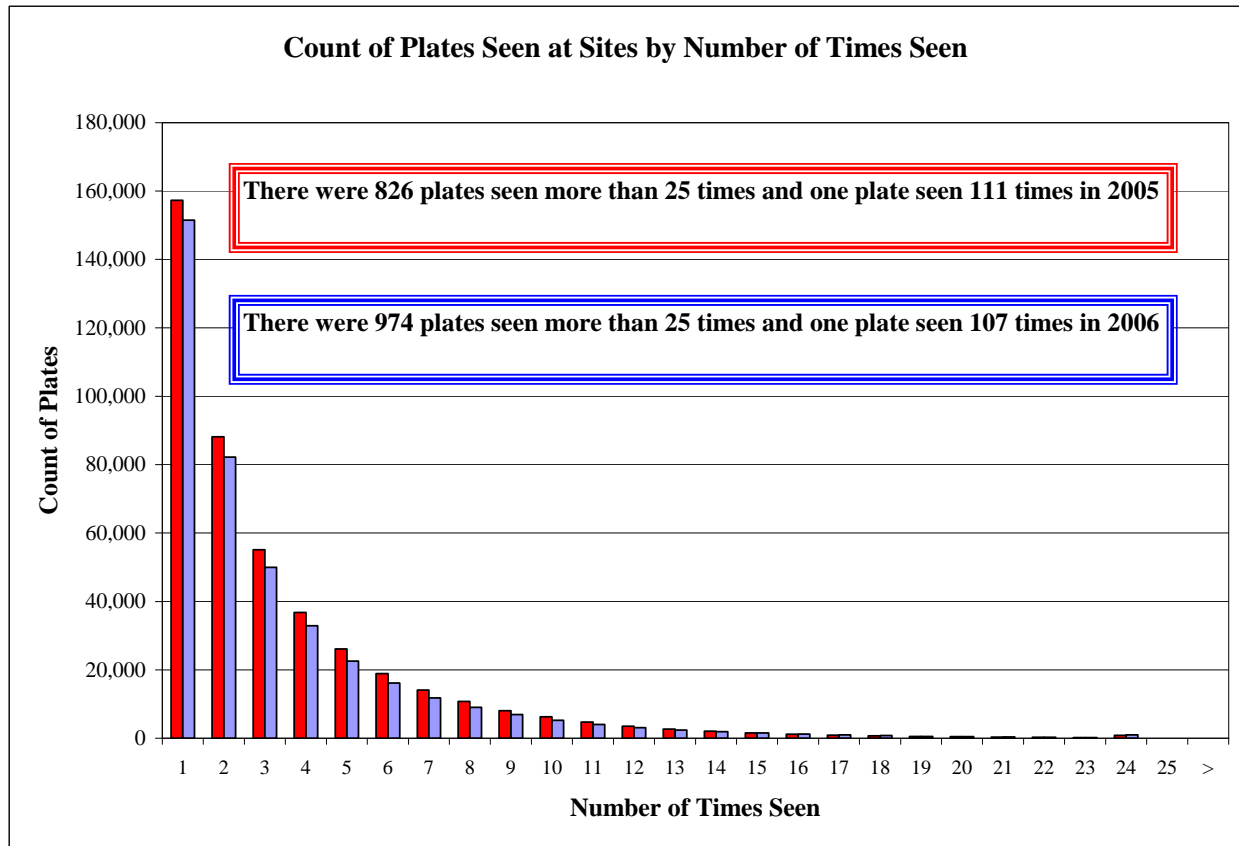
Figure III-2 Cumulative Remote Sensing Measurements



Note that the numbers stated above for total plates entered and IM area plates represent multiple records for the same plate in many cases. Two clean records are needed for a clean screen exemption and one for a hybrid. The total unique Missouri plate records collected between January and December 2006 were 757,523 while the total unique matches were 654,433 or 86% of the total unique plates.

Figure III-3 shows the distribution of plates seen by the number of times seen for collections in 2006. One plate was seen 107 times and 974 were seen more than 25 times. In 2006, 46% of plates were seen only once, 54% two or more times, and 34% more than two times.

Figure III-3 Count of plates seen at sites during 2006 by number of times seen.



4. Notices Issued and Redeemed

Figure III-4 shows the number of RapidScreen notices issued for vehicles by registration renewal month. Notices are prepared approximately a month and a half prior to the month in which the vehicle is due to renew. Notices for vehicles due to re-register in January 2006 were processed in November 2005.

Participation in the RapidScreen program is voluntary. A vehicle owner must choose to respond to a RapidScreen notice in order for a vehicle to complete the RapidScreen process. Vehicle owners who do not choose to respond to a RapidScreen notice must have their vehicles emission tested at a station. Figure III-5 compares notices issued by vehicle registration month with the number of vehicles completing their emission test requirements for the corresponding registration month because the vehicle owner redeemed a RapidScreen notice.

A summary of notices issued and redeemed in the year is shown in Table III-2. The percentages of notices redeemed are 82% for the 2 Hit method and 72% for the Hybrid method. The lower redemption rate for the Hybrid vehicles is consistent with these vehicles being seen less frequently on-road and may have been seen longer ago with a greater proportion of them likely to have moved or changed owner since they were last observed.

Approximately 10% of all vehicle owners sent RapidScreen notices neither redeem the notices nor have their vehicles tested at a station. About 5% of all notices are returned for addressee not at the address even though the mailing list goes through a NCOA (National Change of Address) check before mailing. There may be some overlap between these two groups. Some notices are ignored by recipients who may have subsequently traded the vehicle. Vehicles that are sold or transferred to another area will not obtain a station inspection. Other owners who do not redeem notices go to the stations for testing. A survey of those who were sent notices but went to the stations in July of 2002 indicated that some had to pay in cash, some were taking other vehicles to be tested anyway, some did not know they had a notice, and many had thought that they had waited too long to redeem.

Figure III-4. RapidScreen Notices Issued by Registration Month for 2006

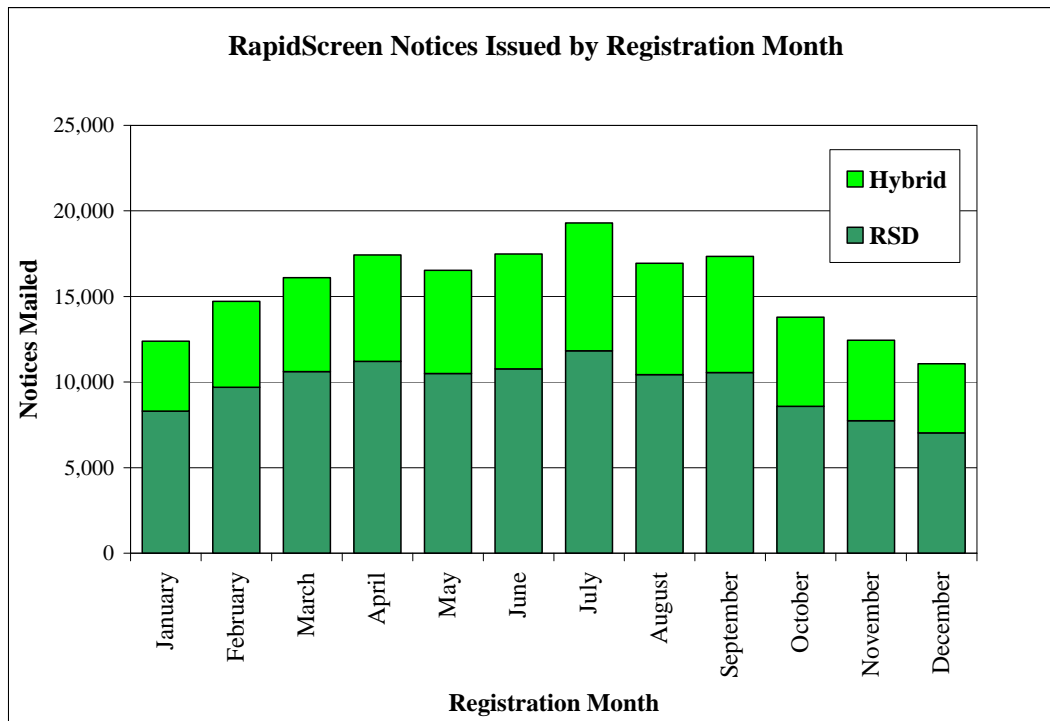


Figure III-5. RapidScreen Notices Issued and Redeemed

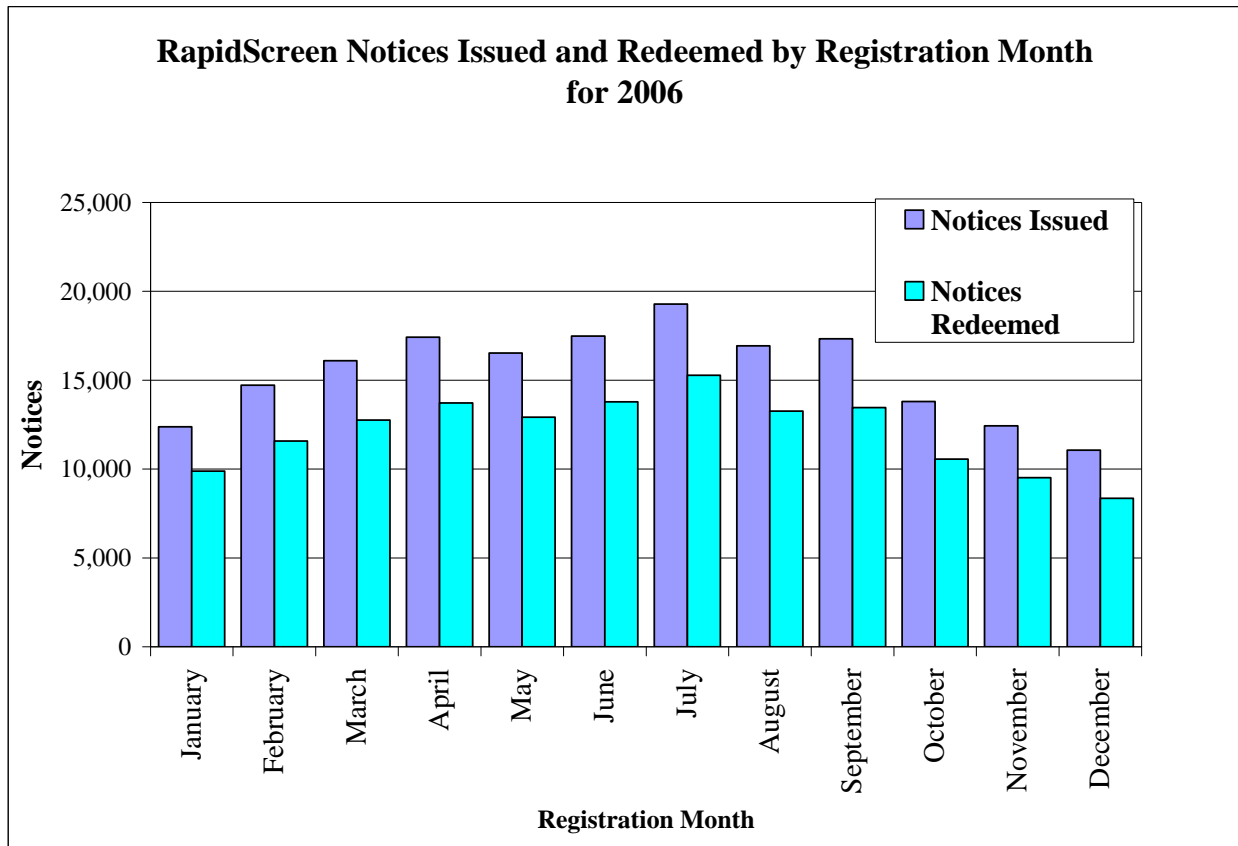


Table III- 2. RapidScreen Notice Redemption Rate

	RSD	Hybrid	LEI	Total
Notices Issued in 2006	115,693	68,417	0	184,110
Notices Redeemed in 2006	95,005	49,173	0	144,178
Percentage Redemptions of Notices Mailed	82%	72%	0	78%

B. Distribution of Vehicles Clean Screened

1. RapidScreen Tests by Model Year

The distribution of initial tests by model year and type of emissions test or RapidScreen method is shown in Figure III-6. In the Enhanced I/M area, even model year vehicles are scheduled for testing in even years and odd model years in odd years. In the Basic I/M area starting in August 2003, all vehicles are tested biennially the same as for the Enhanced I/M area. Transfer of ownership tests are performed regardless of the vehicle model year. Therefore, the testing period being reported here, January through December 2005, contains a greater proportion of odd model year vehicle tests.

Figure III-6 shows the frequency of each of the emissions tests conducted by the Gateway Clean Air Program for vehicles tested in the calendar year 2006. Two of the seven test types, RSD and Hybrid, are RapidScreening methods. All vehicles in both enhanced and basic areas are eligible to participate in the RapidScreen option. Five of the seven test types, IM240, TSI, SSI-E, SSI-B and OBD are station-based test methods. IM240 tests are only performed on 1981 and newer model year vehicles in the Enhanced area. Two-speed idle tests (TSI) are only performed on 1981 and newer vehicles in the Enhanced area that cannot be IM240-tested. Single-speed idle tests are performed in the Enhanced area (SSI-E) on all 1971-1980 model year vehicles and on all vehicles, regardless of model year, in the Basic area (SSI-B). The LEI method was discontinued in late 2000. The On Board Diagnostics (OBD) test was initiated in January 2003 for 1996 and newer OBD-II equipped vehicles and used in the pass mode through June 5, 2005 and for pass and fail after June 5, 2005. For the first half of 2005, vehicles could pass the inspection if they passed the OBD test and those vehicles failing the OBD test were then tested by one of the tailpipe methods. Thus, the OBD tests shown are those for vehicles that have passed the OBD test before June 6, 2005 and virtually all OBD-II equipped vehicles from June 6, 2005.

The percentages of each model year vehicle for which RapidScreen notices were redeemed are shown in Figure III-7. A table showing the distribution of vehicles with redeemed notices by model year, make, and model is provided in Appendix A3.

The proportion of vehicles passing a RapidScreen test is greatest among the newest vehicle models. The newest vehicles have a higher probability of being measured by the RapidScreen vans because they tend to be driven more miles each year (See section VI. B.) and have a higher probability of passing the RapidScreen cutpoints because they typically have lower exhaust emissions than older vehicles. These factors increase the chance of newer vehicles qualifying for the two hit clean screen RapidScreen notices and, thus, for redeeming such notices. It should be noted, however, that even the pre-1991 vehicles had 1,229 two hit redemptions while there were 106 hybrid redemptions for this range of model years. If an older vehicle is well maintained and driven past an RSD van, it can receive a notice. Station tests were performed for some for 2005 models and odd-year models that changed ownership or were due to renew registration in 2006 and were inspected in late 2005. There were also RapidScreen redemptions for vehicles due to renew registration in January and February 2007 that were sent notices in November and December 2006.

Figure III-6 Initial Tests by Model Year and Type of Test

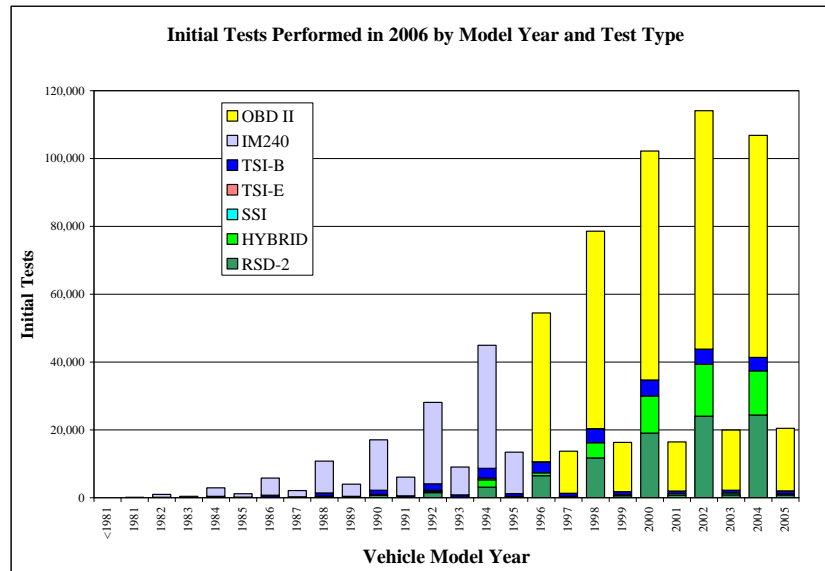
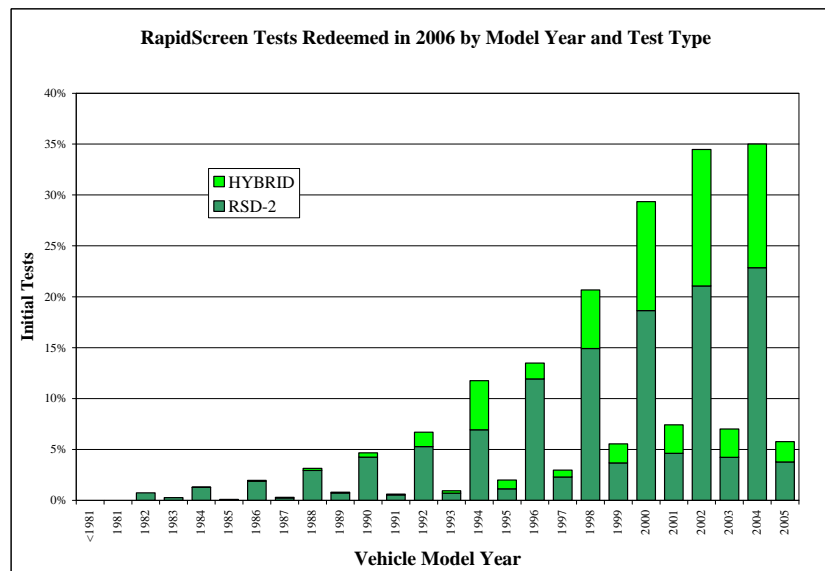


Figure III-7 RapidScreen Redemptions by Model Year and Method



2. *RapidScreen Redemptions Per County and ZIP Code*

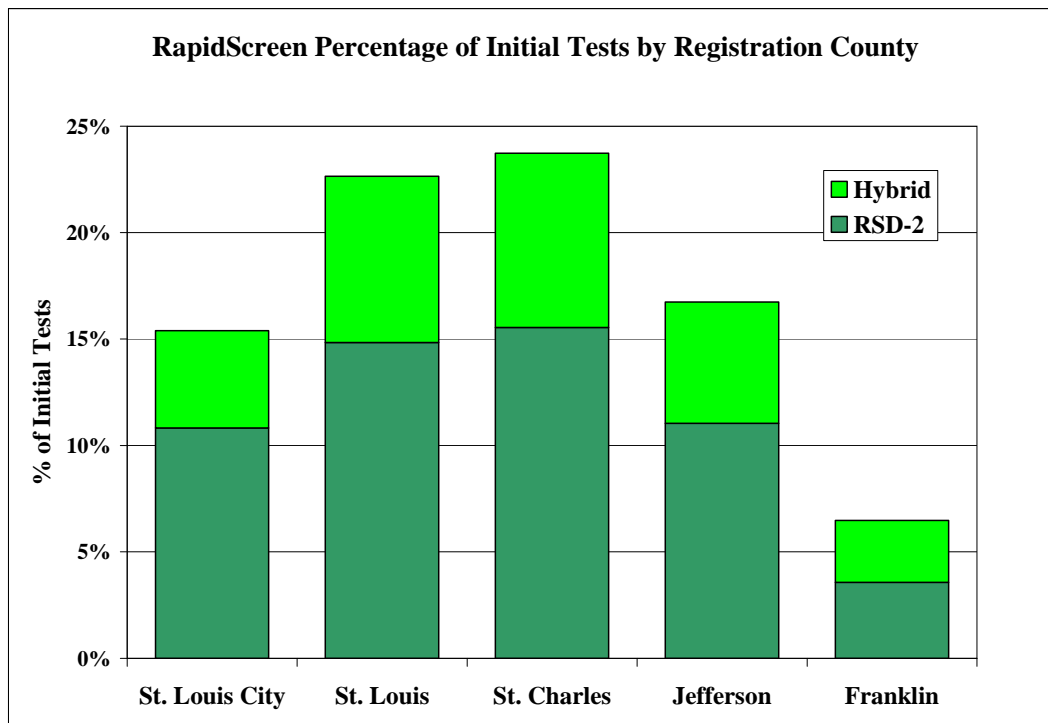
The percentage of vehicles RapidScreened in each county depends upon a number of factors:

- The age distribution of vehicles in the county
- The population and traffic density in the county
- The availability of remote sensing sites in the county
- The frequency of RSD unit deployment in the county
- The motorist response rate to RapidScreen notices

- The frequency of the emission test requirement (annual or biennial) in the county

Figure III-8 shows the percentage of RapidScreen redemptions to total initial tests by registration county (including the RapidScreen redemptions) made in 2006. Until August 2003 owners in Franklin County had the option to obtain the \$10.50 annual test rather than the \$24 biennial test, which meant they were less likely to take advantage of the RapidScreen program. Franklin County changed to a biennial test starting in August of 2003. Lower traffic density in the County also reduces RapidScreen effectiveness. A table showing the percentage of tests that were RapidScreen redemptions by ZIP code is provided in Appendix A2.

Figure III-8 Percentage of Tests that are RapidScreen Redemptions in Each County



Efforts are made to distribute the hours of collection among the counties to allow for even coverage in relation to registration percentages. However, the goal of obtaining measurements on the largest number of vehicles registered in all counties is not necessarily achieved by spending more time at sites in the county. For example, more vehicles registered in Franklin County are seen per hour at two sites in St. Louis County than at either site in Franklin County.

C. Quality Control and Quality Assurance

ESP Missouri subcontracted Remote Sensing Air (RS=A) to provide RSD data management and quality assurance functions for the RapidScreen program. Therefore, RS=A has prepared the majority of this section of the RapidScreen Annual Reports.

RapidScreen data management activities include:

- Ensuring that all datasets collected are tracked from collection through inclusion in the full database of records available for matching.
- Ensuring that all valid records have been tag edited.
- Ensuring that all datasets are properly transferred to the full database for matching.
- Archiving all raw data to digital video discs (DVDs) for ESP Missouri and MDNR.

The quality control (QC) and quality assurance (QA) procedures include:

- Checking for the presence of correct RSD unit calibration records.
- Training of tag editors.
- Quality control on tag editors.
- Quality assurance of the tag edit process through a 200 record per set audit sample.
- Quality assurance of the correct matching of vehicle images and RSD measurements to registration records through image verification of a 10% sample of vehicles that are being issued RapidScreen notices.

A complete list of RapidScreen data management, QC and QA activities is provided in Table III-3.

Table III- 3. List of QC and QA Tasks and Responsibilities.

Task	2006	Responsibilities	
	Frequency	Company	Personnel
Upload data from Vans (must be done daily)	Daily	ESP	Lead Operator
Verify all files present (must be done daily)	Daily	ESP	Lead Operator
Check data recieved against expected schedule	Daily	ESP	Lead Operator
Check images for each folder for clearness and position	Daily	ESP	Lead Operator
Check cal gas values in log file against known values	Daily	ESP	Lead Operator
Enter RSD Daily Log Sheet Information into SDM check database	Daily	ESP	Lead Operator
Check pot settings against certification values	Daily	ESP	Lead Operator
ESP must also maintain & repair equipment & keep up database o	Daily	ESP	Lead Operator
Create data tracking forms (DTF) and QA sheets	Daily	ESP	Tag Edit Manager
Enter DTF information into Data Tracking database	Daily	ESP	Tag Edit Manager
Create site statistics	Daily	ESP	Lead Operator
Compare hit rate of new data to avg. for site	Daily	ESP	Lead Operator
Assign data to tag editors & log in database	Daily	ESP	Tag Edit Manager
Track proggess of tag editors	Daily	ESP	Tag Edit Manager
Log in tag edited files	Daily	ESP	Tag Edit Manager
Move completed folders to NEED QA	Daily	ESP	Tag Edit Manager
Give tag edited DTF forms to RSA Data Manager	Daily	ESP	Tag Edit Manager
Train tag editors	As needed	ESP	Tag Edit Manager
Run QC check on tag edited data & provide feedback to TEM	Daily	ESP	Tag Edit Manager
QA data	Daily	ESP	Tag Edit Manager
Enter QA results into Data Tracking & QA/QC DB	Daily	ESP	Tag Edit Manager
Create revised text file and send it to To Database folder	Daily	ESP	Tag Edit Manager
Move folder from Needs QA to Copy to DVDs	Daily	ESP	Tag Edit Manager
Copy correspondimg images to RSD Images	Daily	ESP	Tag Edit Manager
Copy files to DVDs & create logs for ESP and MDNR	Daily	ESP	Tag Edit Manager
Perform RSD Image QA for mailers	Monthly	RSA	Project Manager
Process audit data and create summaries for SDM performance	Monthly	RSA	Project Manager
Create reports on site statistics	Monthly	RSA	Project Manager
Evaluate the 2% of vehicles witheld from mailers and sent to IM	Monthly	RSA	Project Manager
Perfom site audits for each operator once per month & report	Monthly	RSA	Project Manager
Assist with new site selection	As needed	RSA	Project Manager
Prepare reports on QA, site statistics, and data flow	Monthly	RSA	Project Manager
Evaluate cut point choices for Clean Screen & Gross Emitter using	Annually	RSA	Project Manager
Ensure that all tasks are being done efficiently	Daily	RSA	Project Manager
Assist in providing more efficient procdures	As needed	RSA	Project Manager
Assist in report design	As needed	RSA	Project Manager
Assist in modifications of ATP requirements	As needed	RSA	Project Manager

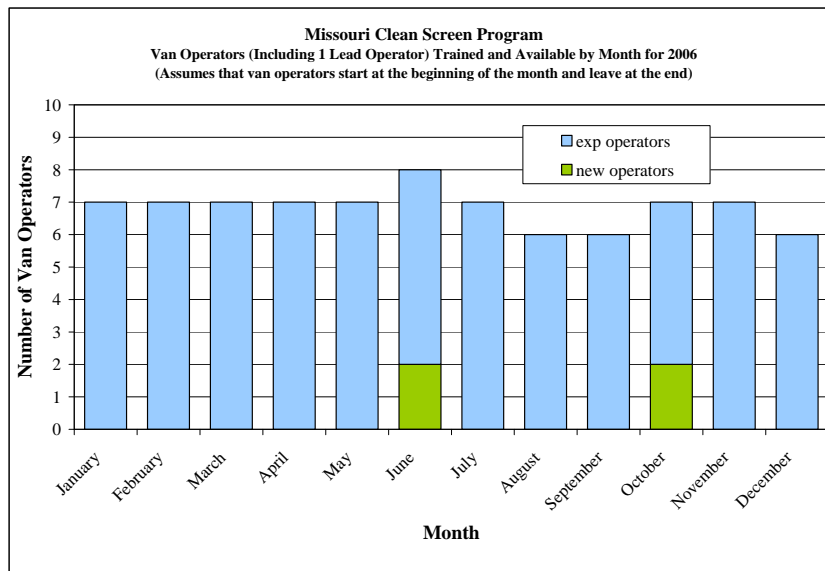
1. Training of Tag Editors

Each tag editor is provided a set of tag editing rules and photographs of various types of license plates. A short training session covering the rules and best ways to perform the tag editing is provided by the tag-editing department. Then each tag editor is provided 500 records from a test set to tag edit. The use of the test set was introduced in 2003 to allow automatic checking of the tag edit test set against a set that had been tag edited by an experienced tag editor. The additional advantage over using actual data is that if the trainee has a significant number of errors, a full set does not need to have 100% QC performed. These 500 records are checked for errors, and the dataset is reviewed with the tag editor.

The trainer explains the types of errors found and provides guidance to the tag editor for avoiding those errors. This process is repeated until the tag editor has fewer than 15 errors (3%) at which point the tag editor is given an actual set to tag edit. If at any point, a tag editor has an increase in error rate above 20 errors (4%), the dataset is 100% checked, and the tag editor is required to review the types of errors found.

The numbers of trained and experienced van operators are presented in Figures III-9. In 2006, the number of van operators (including 1 lead operator) varied from a high of 8 in June to a low of 6 with 7 operators for most of the year.

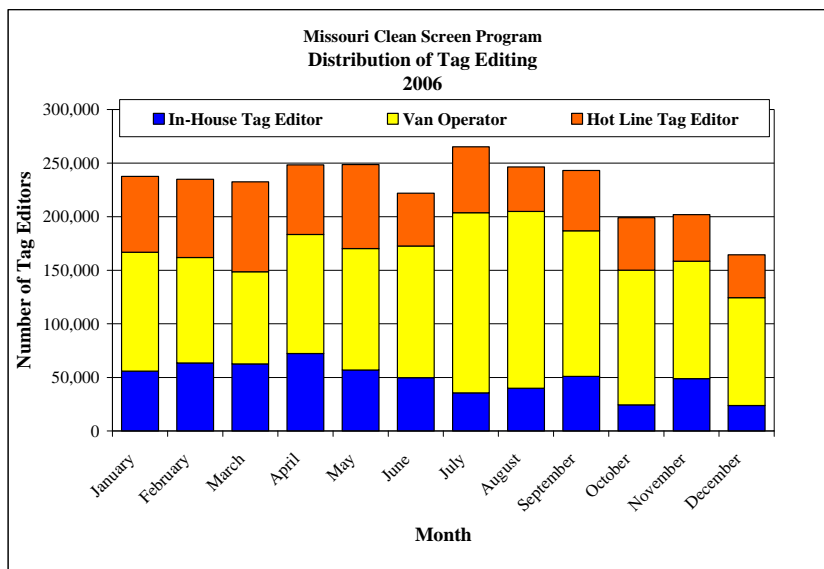
Figure III-9 Van Operators Trained and Experienced by Month



The number of in-house tag editors decreased in 2003 due to the decision in late 2002 to have the van operators participate in the tag editing process. In June 2004, Hot-line operators, who handle calls from the public in relation to the program, were added to provide additional resources during times of high volumes of records and low volume of calls.

For 2006 there was one full-time tag edit supervisor and one part-time tag editor with four hot-line tag editors. The distribution of tag editing in-house and by van operator is presented in Fig. III-10.

Figure III-10. Distribution of Tag Editing between Operators and In-House Tag Editors



2. *Quality Control on Tag Editors*

Quality control on tag editors provides the trainer with an understanding of the performance of each tag editor and the opportunity to provide feedback and additional training as necessary. After initial training, each new tag editor is provided with a test set to tag edit. Each test set is a blank copy of a “key” set that has been completed by an experienced tag editor. The trainee is asked to tag edit in 500 record bins and after each bin, the records are compared with the “key” set and the errors computed. After each bin, the errors are reviewed by the tag editor and trainer and ways to avoid the errors are discussed. The process is repeated until the error rate is below 3%. The errors from these test sets are not included in the QC statistics in Table III-4 since they will not impact the actual data used for matching. After the error rate for the test sets fall below 3%, the routine QA of each real dataset (See section III. C.4.) is used to verify the error rates for each tag editor. If the error rate goes above 4%, then the dataset goes through a 100% QC check, the tag editor reviews the errors made, and the trainer gives the tag editor guidance on how to avoid the problems exhibited. Most tag editors stay below the 3% error rate for their period of tag editing (generally below 1%). During QA checking, all errors found are corrected in the dataset to ensure as accurate a database as possible.

An RSD dataset from one RSD unit is assigned to a tag editor. The number of tag edit datasets and records requiring QC are provided in Table III-4 by month. Because of the new training methods, no datasets required 100% QC checks during 2004.

Table III- 4 Monthly Summary of QC on Tag Editors

Collect Month	Actual Records Tag Edited	Average Records Per Tag Edit Dataset	Number of Tag Edit Datasets	Number of Records QC Checked	Number of Datasets Needing QC	Percent of Datasets Needing QC
2006 01	194,809	3,044	64		0	0.0%
2006 02	211,965	2,944	72		0	0.0%
2006 03	203,355	2,905	70		0	0.0%
2006 04	228,440	3,217	71		0	0.0%
2006 05	244,362	3,347	73		0	0.0%
2006 06	248,467	3,451	72		0	0.0%
2006 07	253,537	2,914	87		0	0.0%
2006 08	248,263	3,448	72		0	0.0%
2006 09	248,316	3,820	65		0	0.0%
2006 10	196,733	3,334	59		0	0.0%
2006 11	183,943	2,666	69		0	0.0%
2006 12	153,634	2,955	52		0	0.0%
TOTAL 2005	2,615,824	3,167	826	0	0	0.0%
<i>Average 2005</i>		<i>3,171</i>	<i>69</i>		<i>0</i>	<i>0.0%</i>

3. *Quality Control on Tag Edit Datasets*

When a tag editor completes a particular tag edit dataset, all of the records are checked for errors using specific queries. In this way, common errors, such as inclusion of improper symbols or spaces, inappropriate number of characters, or inappropriate combinations of data field contents, are found and corrected before the final QA is performed (See section III. C. 4). This QC process ensures that the VDR table contains accurate information. The numbers and types of errors are tracked so that each tag editor knows the types of errors being made and how best to avoid such errors.

Table III-5 shows the total and average number of these common errors found each month through this QC process. This query review of 100% of the data for the month takes little actual time and is a worthwhile step because, although the average percentage of errors found is small (0.09%), the average number of errors found (200) is over twice the average number of errors found during the QA process (99) (See Table III-6).

Table III- 5 Monthly Summary of QC on Tag Edited Datasets

Month	Actual Records Tag Edited	Errors Found	% Errors by Month
2006 01	194,809	295	0.15%
2006 02	211,965	164	0.08%
2006 03	203,355	272	0.13%
2006 04	228,440	170	0.07%
2006 05	244,362	151	0.06%
2006 06	248,467	111	0.04%
2006 07	253,537	360	0.14%
2006 08	248,263	161	0.06%
2006 09	248,316	164	0.07%
2006 10	196,733	244	0.12%
2006 11	183,943	170	0.09%
2006 12	153,634	135	0.09%
TOTAL	2,615,824	2397	0.09%
<i>Average</i>	<i>217,985</i>	<i>200</i>	<i>0.09%</i>

4. *Quality Assurance on Tag Edit Datasets*

Quality assurance of the datasets provides information on the accuracy of the VDR table used for RapidScreen image and registration matching. Each dataset is divided into four equal parts. A random number is chosen from the first quarter of data and the valid records in the range of 50 records from that quarter is visually checked. The process is repeated for each subsequent quarter using the same random number added to the first record of each bin. In July 2000, the tag edit program was modified to only allow the tag editing of records with valid HC, CO, NO_x, CO₂, speed, and acceleration measurements. At that point, the QA checks were also performed only on the tag edited records. This process of checking the valid records in the four 50-record bins has resulted in the checking of an average of 6% of all tag-edited records. The percentage will be higher for small datasets and smaller for large sets. It was determined after looking at the data from 2000 and 2001 that this procedure provided equivalent or better determination of the accuracy of a set because of the similarity of percentage errors for large sets using both the 10% and 200 record methods.

If the number of errors found exceeds 4% for any tag editor, then the dataset undergoes 100% QC check on the records for the tag editor (See section III. C. 3.). If there is a specific type of error that can be checked, then only those records with that type of error are checked. After a 100% QC check, the dataset again undergoes a routine QA check using a different set of random records to provide the actual quality of the final data in the VDR table.

Table III-6 provides a summary of the QA results by month. The average QA error rate for the VDR table is less than 1% (greater than 99% accuracy). The actual final quality of the tag-edited data in the VDR table will be higher than that reported since all errors found during the QA process are corrected.

Tag edit errors result in incorrect license plate numbers that may not match any vehicle registered in the Gateway Clean Air Program area or may create an incorrect match. When remote sensing measurement records in the VDR table containing these errors are compared to registrations to obtain vehicle information, these records with plates that do not match any vehicle subject to the program are discarded. Therefore, not all of the <1% of tag editing errors are carried forward to the RapidScreen notice generation process. However, some of the errors in plate entries match an actual plate but not the actual vehicle causing two records to be invalidated during the RSD Image QA.

Table III- 6 Monthly Summary of QA on Tag Edited Datasets

DATE By Month	Records TE	Records QA Checked	%QA Check	QA Errors	% QA Errors
2006 01	194,809	9,647	5%	80	0.83%
2006 02	211,965	11,162	5%	71	0.64%
2006 03	203,355	11,822	6%	93	0.79%
2006 04	228,440	11,712	5%	85	0.73%
2006 05	244,362	12,524	5%	84	0.67%
2006 06	248,467	11,900	5%	83	0.70%
2006 07	253,537	14,891	6%	139	0.93%
2006 08	248,263	15,724	6%	153	0.97%
2006 09	248,316	11,482	5%	80	0.70%
2006 10	196,733	10,724	5%	118	1.10%
2006 11	183,943	11,919	6%	109	0.91%
2006 12	153,634	8,781	6%	90	1.02%
TOTAL	2,615,824	142,288	5%	1,185	0.83%

5. *Quality Assurance on VMR Images*

Each month, vehicle mailing records (VMRs) are created for vehicles that qualify for RapidScreen and are due to renew their registration. This is the first step in creating and mailing monthly RapidScreen notices. RSD image quality assurance verifies that the license plate images of the two qualifying remote sensing records match each other and match the vehicle identified by the MDOR registration information. This QA process is performed for each monthly set of data in the VMR table that is used to generate the RapidScreen notices. A program written by ESP is used to QA a random 10% of the RapidScreen notices. There are five choices when checking the images:

- P (Pass) – both RSD images are the same and match the registration data for that record.
- R (Fail) – both RSD images match each other but do not match the registration database. This is generally due to a time lag in ownership and the

update of the MDOR database, but the vehicle cannot be passed since the vehicle does not match the registration.

- DO (Fail) – the RSD images do not match each other. This may be due to the same plate being used for different vehicles, or a change in ownership of the vehicle/plate between the time of the collection of the two images and the update of the data in the MDOR database.
- DTE (Fail) – both RSD images do not match each other due to a tag edit error.
- O (Fail) – other issues. All of these failures were due to problems with new software through April of 2004 registrants as discussed below. After April 2004 registrants, the failures were due to heavy trucks with light truck plates.

Table III-7 provides a summary of the VMR image matching failure rate for each registration month and overall. Figure III-11 provides details of the type of failure by month.

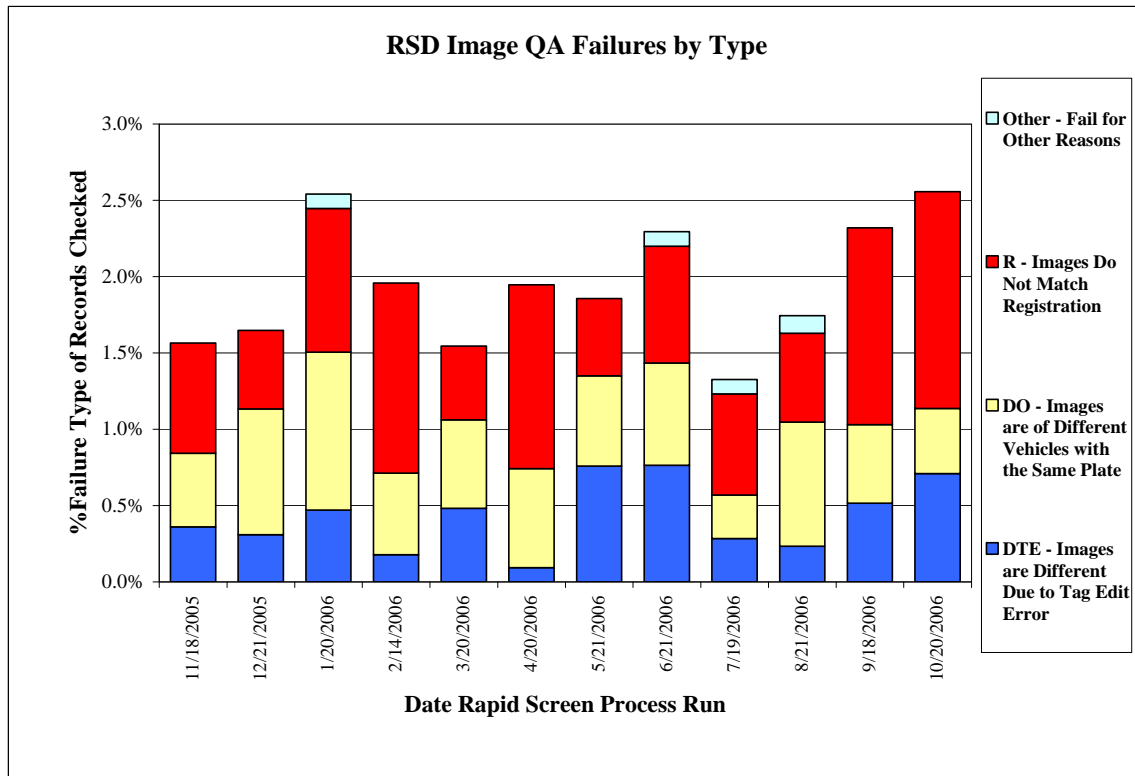
Table III- 7 Monthly Summary of QA on VMR Images

Date Process Run	Registration Due (2002)	RSD Records Matched	RSD Records QA'd	RSD Image Fail for All Reasons	%RSD Images Fail	RSD Image Fail Due to TE Error	%RSD Fail Due to TE Error
11/18/05	01/31/06	8,478	831	13	1.6%	3	0.36%
12/21/05	02/28/06	9,913	971	17	1.8%	3	0.31%
01/20/06	03/31/06	10,850	1,063	27	2.5%	5	0.47%
02/14/06	04/30/06	11,468	1,124	22	2.0%	2	0.18%
03/20/06	05/31/06	10,732	1,036	16	1.5%	5	0.48%
04/20/06	06/30/06	11,010	1,079	21	2.0%	1	0.09%
05/21/06	07/31/06	12,092	1,185	22	1.9%	9	0.76%
06/21/06	08/31/06	10,673	1,046	24	2.3%	8	0.76%
07/19/06	09/30/06	10,777	1,056	14	1.3%	3	0.28%
08/21/06	10/31/06	8,775	860	15	1.7%	2	0.23%
09/18/06	11/30/06	7,915	776	18	2.3%	4	0.52%
10/20/06	12/31/06	7,188	704	18	2.6%	5	0.71%
TOTAL		119,871	11,731	227	1.9%	50	0.43%
<i>Average per month</i>		<i>9,989</i>	<i>978</i>	<i>19</i>	<i>2.0%</i>	<i>4</i>	<i>0.43%</i>

The average failure rate of the VMR image matching is 2.0% for 2006 including 0.84% for not matching the registration, 0.62% for the same plate but different vehicles, 0.43% for tag edit errors, and 0.03% for other reasons. The values for the failures due to registration, different vehicles and tag edit errors are similar to those for previous years. The Other entries for registration due dates from January through April 2004 are high due to a problem with new software introduced in 2003 and impacting the RSD Image QA results for data collected through March of 2003. As detailed in the 2003 report, a selection of these errors were checked manually to verify that the issue was not with the actual data but an

incompatibility between the new software and the RSD Image QA program. It was decided to revert to the original collection/tag-editing program in April 2003. The Other entries are from heavy-duty trucks with light duty plates after the April 2004 registrants. The average QA rate of failures in the VMR table due to tag edit errors is less than 0.5%, which is lower than the average QA error rate of less than 1% for the tag edited datasets in the VDR table (See Table III-6).

Figure III-11 details the types of image matching failures as a percent of the total number of VMR images checked.



6. Dry Gas Audits of RSD Units

Starting in October of 2001, Dry Gas Puff Audits were performed on the RSD SDM/VTM units with MDNR oversight. These procedures were documented and provided to the MDNR in February 2002 as *AccuScan™ Quality Assurance Test Procedures for the Missouri Clean Screen Program*, ESP-MAN1100, Version 2.0. This document was revised in relation to MDNR comments and resubmitted as Version 3.0 in December 2002. The primary audit procedure is a Dry Gas Puff Audit which is used to verify the functioning of the AccuScan™ SDM/VTM unit within ESP certified tolerances.

The Dry Gas Puff Audits have been performed monthly on all units present in Missouri (some units were in Tucson for annual preventative maintenance during scheduled puff audits) except months in which Dry Gas Truck Audits are performed. In addition, all units

went through biannual Dry Gas Truck Audits (May and November 2006). A description of each type of audit and the results of the audits for 2006 is summarized below.

The Dry Gas Audits are performed using four different blends of the four test gases (quad blends) - CO, CO₂, HC (as propane), and NO_x (as NO). Gas blend values used for the audits are shown in Table III-8. In order for an SDM/VTM unit to pass the Dry Gas Puff Audit, all four gas blends must be within the tolerances listed in Table III-9 for five sequential puffs/runs. For Dry Gas Puff Audits if there is a failure with an initial test with one or two points out, the test is repeated with no changes to the setup or calibration to see if there was a random ambient gas issue. If the second test fails, the system is cleaned (if necessary), realigned, re-calibrated and re-tested. If the third test fails, then the SDM/VTM unit is taken out of service and checked out at ESP Headquarters and re-tested to pass before being put back in service. Each cylinder is tested sequentially by attaching the cylinder gas directly into the SDM unit through the calibration port on the outside of the SDM and puffing the gas into the SDM as is done with the calibration gas. The on-site Dry Gas Puff Audit allows an evaluation of SDM/VTM units functioning under real collection conditions (beam path, equipment setup, and site conditions) without emitting the larger amounts of gas required by the Dry Gas Truck Audit into the atmosphere.

Table III- 8 Recommended Gas Blends for Dry Gas Audits

Cylinder Designator	CO %	HC ppm (as Propane)	NO _x ppm	CO ₂ %
1	0.2	50	2000	15
2	0.3	100	1000	15
3	0.5	200	500	14
CalA	3.0	1500	1500	13
CalB	4.0	1200	2000	12

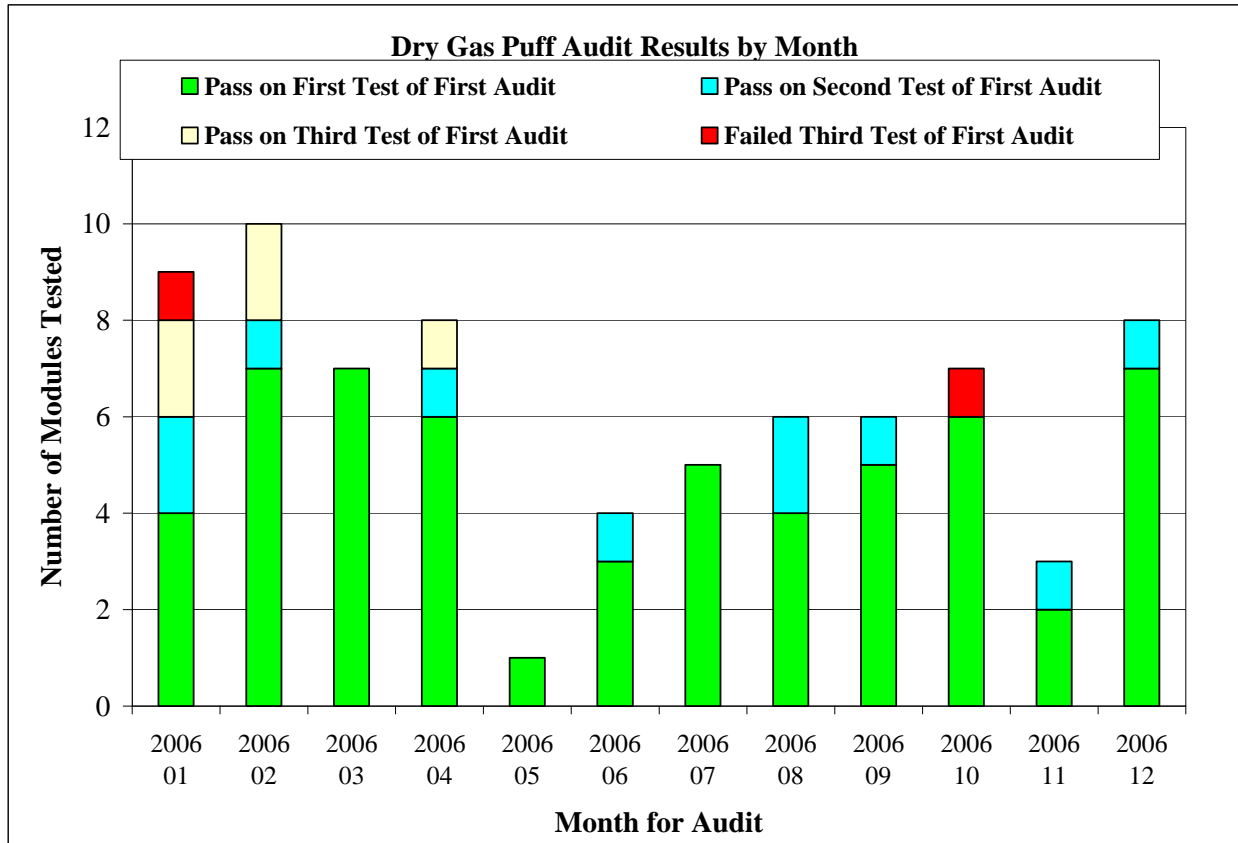
Note that the calibration gas cylinder was changed from blend CalA to CalB in May 2003 to provide a calibration closer to the NO_x cutpoint of 2000 ppm. Also, only blends 1, 2, and 3 are used for Dry Gas Truck Audits.

Table III- 9 ESP Tolerances for AccuScan™ Dry Gas Audits

Test Gas	Tolerances Using Dry Gas (from 20 to 120 deg F)
CO	$\pm 0.25\%$ CO or $\pm 10\%$ of actual concentration, whichever is larger
CO₂	$\pm 0.25\%$ CO ₂ or $\pm 10\%$ of actual concentration, whichever is larger
HC	± 150 ppm as hexane or $\pm 15\%$ of actual concentration, whichever is larger equivalent to ± 300 ppm as propane (used for Puff Audits)
NO_x	± 250 ppm as NO or $\pm 15\%$ of actual concentration, whichever is larger

Results of the monthly Dry Gas Puff Audits are shown in Figure III-12. There are a total of ten SDM/VTM units available for the Missouri RapidScreen program; in 2006, only nine were available with unit 560 not used during the year. There are usually 4 to 5 units in service in the vans with 2 to 4 spare units and 1 to 3 units in Tucson for maintenance. All in-service and spare units (7 to 9) are Dry Gas Puff and/or Truck audited each month. The total units Dry Gas Audited for 2006 were 89 (74 puff audits and 15 truck audits) with an average of 6 puff audits per month. Of these 89 Dry Gas Audits, 6 (2 Puff and 4 Truck) failed a full audit of three tests and the units were removed from service, repaired as necessary, and retested at headquarters. The nine units had puff audits performed during the months that they were in Missouri. The majority of puff audits (91%) passed the first test or a second with no changes to set-up, alignment, cleaning or calibration. About 7% of the audits required that the unit be cleaned, realigned or re-calibrated before passing the test. The results of the Dry Gas Truck Audits were used to determine whether the units would be taken out of service. On average, 78% of all puff audits were performed on-site. During 2006, 11 operators were audited with 9 of those having no failures, one having 1 failure out of 11 audits and one having 1 failure out of 3 audits during 2006. During 2006, 29 sites were audited with 2 sites each having one failure. During 2006, all 9 units available in Missouri were audited at least 5 times. All but 2 units passed all puff audits. One unit passed 8 out of 9 and one passed 6 out of 7 puff audits.

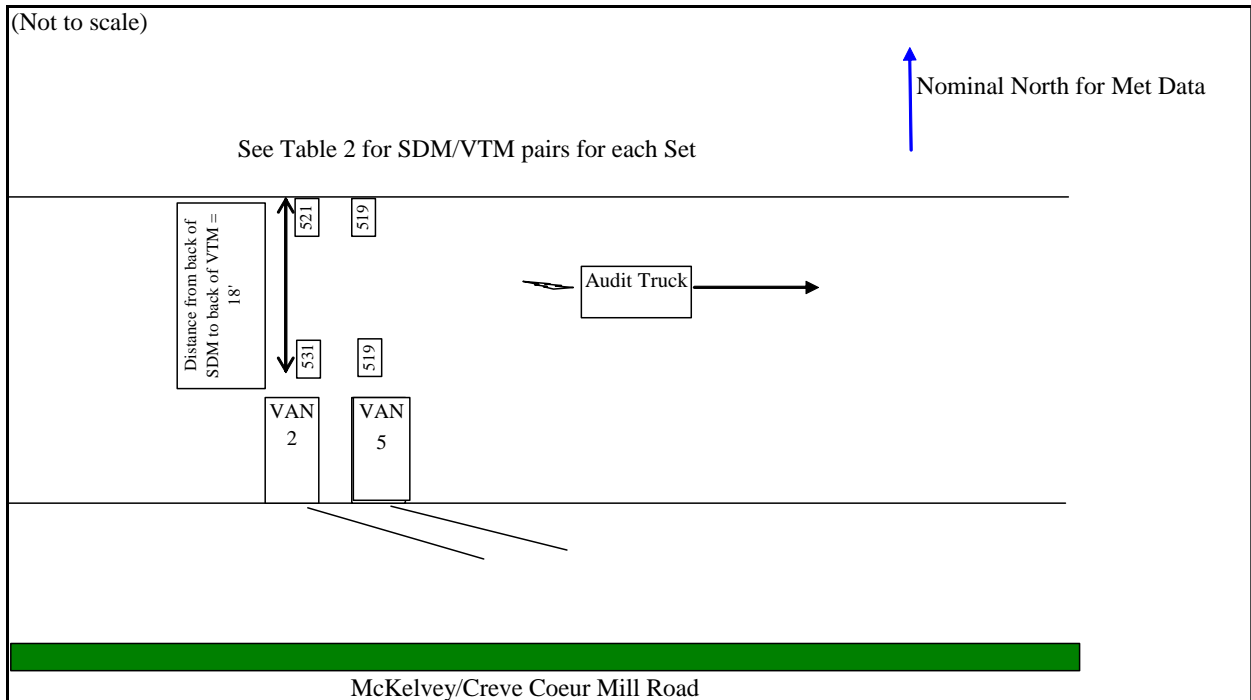
Figure III-12 Summary of Dry Gas Audit Results (Puff & Truck) for 2005



The Dry Gas Truck Audits are performed biannually using individual gas cylinders configured to release a “mock” vehicle exhaust plume behind the truck as the truck is driven at a known speed and acceleration through the beam path. The Dry Gas Truck Audit uses only blends 1, 2 and 3 from Table III-8. The actual exhaust of the audit truck is removed from the testing sample by means of a diversion pipe sealed at its connection to the truck exhaust pipe using high temperature-resistant Teflon™ gaskets. The Dry Gas Truck Audit allows evaluation of the SDM/VTM unit’s ability to detect plumes released in the beam path, similar to that of an actual vehicle. An important difference between the audit truck plume and actual vehicle plume is the fact that the audit truck has a dry gas plume while the actual vehicle plume has moisture. The dry gas plume dissipates more quickly. Because the gas plume is not enclosed as with the Dry Gas Puff Audit, significantly more gas must be used provide detectable levels similar to those of an actual vehicle for the Dry Gas Truck Audits. If an SDM/VTM unit fails a Dry Gas Truck Audit, it will be re-audited using the Dry Gas Puff Audit following the procedures above. The results of the Dry Gas Puff Audit override the Dry Gas Truck Audit as per the MDNR. For the May 2006 tests, unit 563 failed 3 tries and was retested at headquarters. For November 2006, units 543, 548, and 550 failed 3 tries and were retested at headquarters. Unit 563 was in Tucson for maintenance during the November audit. All failures were due to high NOx as usual.

The Dry Gas Truck Audits in May and November 2006 were performed in the parking lot behind a church near ESP Missouri headquarters to provide a site that would not be busy during weekday testing. The parking lot behind the ESP Missouri headquarters is very busy during the day resulting in safety hazards as well build-up of gases that might interfere with the tests. An example of the set up used for both audit sessions in 2006 is shown in Figure III-13. Auditing two units at a time proved more efficient than five units.

Figure III-13 Set up of vans and SDM/VTM units for Dry Gas Truck Audits



For the May 2006 Dry Gas Truck Audits, four units (521, 527, 550 and 560) were in Tucson and were not tested. Of the remaining six units one (563) failed the audit. Three units passed on the first test. The first test for one unit was aborted due to rain. One unit failed the first run due to high NO_x levels; the audit were rerun with no changes and the unit passed the audit.

For the November 2006 Dry Gas Truck Audits, three units (554, 560 and 563) were in Tucson and not tested. Of the remaining seven units only three units (543, 548, and 550) failed. Four units passed (519, 521, 527, and 531). All failures were due to high NO_x.

IV. RapidScreen Program Emissions Performance

A. *RapidScreen Audit Sample*

A random sample of two percent of vehicles meeting RapidScreen criteria are not mailed notices. These vehicles are required to go to a test station to obtain a station-based emission inspection. This random sample of vehicles is used to evaluate the effectiveness of the RapidScreen program.

Table IV-1 provides a summary of the audit sample for the RSD-2 and Hybrid tests in 2006. The Tests are the number of notices redeemed in 2006 and the Audits are the number of audit samples actually tested at the stations in 2006. Audit vehicles are selected by picking the first two out of each hundred vehicles in the VMR table. The reason that the percent of audit samples tested does not equal 2% of the Tests is because the RapidScreen redemption rate is less than 80% and because not all audit samples actually get tested.

Table IV-1 RapidScreen Audits

Type	Tests	Audits	%
RSD-2	95,005	2,059	2.2%
Hybrid	49,173	1,235	2.5%
LEI	-	-	-
Total	144,178	3,294	2.3%

B. *RapidScreen Program Effectiveness*

The reporting requirement to make a comparison of the remote sensing records, vehicle profile or model year compared with the actual emissions testing records of the random sample has been interpreted in the RapidScreen Startup Report and subsequent annual reports as an evaluation of the emissions reductions that were obtained by station testing of the audit sample. The effectiveness of the RapidScreen program is then estimated by projecting the result for the random audit sample to all vehicles that were RapidScreened.

1. Pass / Fail Statistics

The results of the emissions inspections of the RapidScreen audit vehicles are shown in Table IV-2. The table shows the number of audit vehicles receiving each type of tailpipe testⁱ. The Gateway Clean Air Program uses five test types at the test stations. These test types were described in section III. B. 1. and are abbreviated in Table IV-2 as follows:

- SSI – Enhanced area biennial Single-Speed Idle
- TSI-E – Enhanced area biennial Two-Speed Idle
- TSI-B – Basic area Single-Speed Idle
- IM240 – Enhanced area biennial IM240
- OBD-PF – OBD (pass/fail from June 6th, 2005)

The test results of the audit sample are grouped by the RapidScreen method used to select the vehicle. The overall test result includes the tailpipe test or OBD test and a gas cap pressure test. In aggregate, 0.2% of the audit vehicles failed their tailpipe emissions inspection, 4% of the audit vehicles failed the OBD test, and 1.3% of the audit vehicles failed their gas cap pressure test.

The results in Appendix B show that the average tailpipe emissions of the audit vehicles that failed the IM240 test are considerably lower than those of the average vehicle failing the IM240 test.

Subsequent to June 5th 2005, OBD-II equipped vehicles were passed and failed using the OBD I/M test procedure that does not measure emissions as part of the test. The emissions of these vehicles before and after the I/M test have been evaluated using remote sensing measurements made in the 90 days before their first test and in the 90 days following their final test. A correlation of 2002 IM240 results vs. RSD measurements made in 2002 was used to convert the RSD emissions values to equivalent IM240 g/mi values. The methodology used is described in subsequent sections. The RSD results show that the 4% of RapidScreen audit vehicles failing OBD also had much lower emissions than vehicles failing OBD that did not receive a RapidScreen exemption.

ⁱ To avoid potential double counting of emissions reductions, the emissions analysis only considers the first and last result for each vehicle during the year. Therefore, a small percentage of vehicles that had a station inspection prior to being selected for audit were omitted from the audit test analysis. A few vehicles selected for audit that were tested using a different tailpipe procedure on their first and last test and were also omitted from the analysis because a direct measurement of the change in emissions was not available. Therefore, 3,216 of the 3,294 audit vehicles (97.6%) are included in the first-last test analysis in Table IV-4 and Appendix B.

Table IV-2 RapidScreen Audit Test Pass / Fail Statistics

Type	Test Type	Vehicles	Overall Pass	Overall Fail	OBD Fail	Tailpipe Fail	Gas Cap Fail	Scr Status
RSD-2	TSI-E	1	1	0	n/a	0	0	2
	TSI-B	38	37	1	n/a	0	1	2
	IM240	130	122	8	n/a	6	3	2
	OBD-PF	1,828	1,721	107	83	n/a	26	2
Total		1,997	1,881	116	83	6	30	
			94.2%	5.8%	4.2%	0.3%	1.5%	

Type	Test Type	Vehicles	Overall Pass	Overall Fail	OBD Fail	Tailpipe Fail	Gas Cap Fail	Scr Status
Hybrid	TSI-E				n/a			13
	TSI-B	29	28	1	n/a	0	1	13
	IM240	68	67	1	n/a	0	1	13
	OBD-PF	1,122	1,070	52	45	n/a	9	13
Total		1,219	1,165	54	45	0	11	
			95.6%	4.4%	3.7%	0.0%	0.9%	

Type	Test Type	Vehicles	Overall Pass	Overall Fail	OBD Fail	Tailpipe Fail	Gas Cap Fail	Scr Status
Both	TSI-E	1	1	0	n/a	0	0	2 & 13
	TSI-B	67	65	2	n/a	0	2	2 & 13
	IM240	198	189	9	n/a	6	4	2 & 13
	OBD-PF	2,950	2,791	159	128	n/a	35	2 & 13
Total		3,216	3,046	170	128	6	41	
			94.7%	5.3%	4.0%	0.2%	1.3%	

2. Tailpipe Emissions

In order to evaluate the Gateway Clean Air Program emission reductions and the impact of the RapidScreen component, vehicle test results were sorted by VIN, test date and time. Vehicles were then further classified based on their first and last test result during the period. Interim results are ignored. In the list below, the first and last results are indicated in parenthesis, where P is pass, F is fail, W is waiver and null indicates that there was only a single test result for a particular vehicle. The expected combinations that apply to the vast majority of vehicles are underlined.

- P – Passed initial test (P/null, P/P, P/F, P/W)
- R – Failed and successfully repaired (F/P)
- U – Failed unresolved (F/null, F/F)
- W – Failed and received a waiver (F/W)

The difference between the initial and final tests is used to determine the percentage of tailpipe emissions reduction of each group. For vehicles with only one test, the final result is the same as the initial result.

Adjustment of Fast-Pass Results

To allow for comparison of emissions of vehicles tested over different durations of the IM240 test cycle, the emission results for vehicles that fast-pass the IM240 inspection must be extrapolated. During the IM240 test, the highest gram per mile values occur at second 30 and decrease as the test continues. Gram per mile emissions are highest at the beginning of the test for two reasons. First, some vehicles may not have been properly preconditioned prior to testing, so that their engines and catalytic converters are not fully warmed up, resulting in higher emissions at the start of the test. The emissions of these vehicles decrease once the engine and converter are hot. Second, the first part of the IM240 test simulates urban driving, while the second part simulates highway driving. The mass of tailpipe emissions per mile is higher over the first part of the IM240 cycle.

Several methods have been developed for estimating full test values from fast-pass IM240 test results. The Lawrence Berkeley Livermore Laboratory (LBNL) method developed by Tom Wenzel⁶ has been used here. The LBNL method is based on a sample of second-by-second emissions of 4,000 vehicles given the full IM240 in Arizona in 1992. The grams per mile (g/mi) emissions were calculated for each vehicle for each second of the test, by dividing the cumulative grams of emissions over the cumulative distance driven at each second of the test. The g/mi emissions for each second were then averaged over the entire sample. The ratio is calculated of the emissions at each second to the emissions for the full IM240, for each pollutant for each vehicle. The adjustment factors are as high as three for vehicles passed immediately after 30 seconds. Each of the adjustment factor curves reaches unity at second 240. The adjustments are greater for HC and CO emissions than for NOx emissions. The simplicity of the LBNL method allows it to be applied to stored IM240 test results.

Vehicles with Waivers

Approximately 1,500 vehicles received waivers in 2006 (compared to 1,214 in 2005, 1,295 in 2004, 2,600 in 2003, 15,000 in 2002 and 7,800 in 2001). The inspection records for the waiver transaction do not contain tailpipe emission test results. The final emissions data used for these vehicles are, therefore, the results from the last tailpipe emissions inspection preceding the waiver. The reductions shown for these vehicles may not always reflect the final repairs made to the vehicle after it received a waiver and may therefore understate the Gateway Clean Air Program emission reductions.

First and Final Emissions Results

When vehicles fail their initial inspection, they must obtain a repair and return for re-inspection. This process is normally completed in 30 days, but can take longer. To avoid overstating the number of vehicles that have not completed the repair process, the initial and final matching process selects initial tests conducted from January 1, 2006 through December 31, 2006, and final tests conducted from January 1, 2006 through February 28, 2007. This allows 60 days for vehicles to have completed their test and repair cycle, which should be the majority of those that will complete the cycle.

A number of vehicles do not complete the repair/re-inspection process. In most cases, these vehicles are either scrapped or removed from the non-attainment area, which does reduce emissions in the area. Surveys in Arizona⁷ and Colorado⁸ have found that some vehicles continue to operate in the area in violation of the program rules, either with expired license

plates or with stolen license plates or license plate stickers. In this report, it is assumed that two-thirds of these unresolved vehicles leave the area and one third continues to operate.

Table IV-3 contains an example of the initial and final tailpipe results for 1981 to 1984 passenger vehicles inspected using the IM240 test. The table shows the average initial and average final emissions for each group of vehicles together with the percentage reduction.

For example, of the 530 passenger vehicles with model year 1982 tested using the IM240 transient test, 23.8% of vehicles initially failed inspection and were repaired (Pass) with 80% reductions in HC and CO and a 37% reduction in NO_x. Another 14.5% of vehicles failed their initial inspection and had not successfully passed a retest by February 28, 2007 (Unresolved). Reductions from these vehicles are estimated to be approximately 67% for HC, CO and NO_x, because two thirds are assumed to have left the area. The remaining one third of the vehicles provide modest reductions. Finally, 4.2% of vehicles received waivers (Waiver), and the measured reductions prior to the waiver were 34.6% HC, 32.6% CO and 9.3% NO_x. In aggregate, including vehicles that passed their initial inspection, emission reductions for 1982 passenger vehicles were 57.2% for HC, 58.0% for CO and 27.0% for NO_x.

Complete tables by model year and vehicle type are provided in Appendix B for vehicles tested using the IM240, the Enhanced and Basic area idle test procedures, and the OBD I/M tests procedure. Tables are also provided for the RapidScreen audit sample vehicles. The aggregate results from these tables (See Appendix B5) are used to estimate the impact of the RapidScreen program.

Table IV-3 Transient Test Emission Reductions for 1981-1984 Passenger Vehicles

IM240 Test Emissions Reductions

Unresolved fails remaining in area

33%

Model Year/Type	First Result	Last Result	Vehicles		Initial			Final			Reduction %		
					HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1981	Pass	-	42		0.45	5.40	1.21	0.45	5.40	1.21	0.0%	0.0%	0.0%
P	Fail	Pass	14	15.9%	2.27	41.97	2.09	0.42	6.10	1.32	81.4%	85.5%	37.1%
	Fail	Unresolv.	28	31.8%	4.17	67.63	1.96	1.48	21.49	0.69	64.6%	68.2%	64.7%
	Fail	Waiver	4	4.5%	4.96	95.41	1.07	3.56	62.30	1.14	28.3%	34.7%	-6.7%
Total	Fail%		88	52.3%	2.13	35.11	1.58	0.91	13.22	1.06	57.1%	62.4%	33.1%
1982	Pass	-	305		0.39	4.54	1.73	0.39	4.54	1.73	0.0%	0.0%	0.0%
P	Fail	Pass	126	23.8%	2.10	27.42	2.70	0.44	5.76	1.45	79.2%	79.0%	46.5%
	Fail	Unresolv.	77	14.5%	3.99	60.84	2.76	1.30	19.75	0.89	67.4%	67.5%	67.6%
	Fail	Waiver	22	4.2%	4.45	65.68	2.71	2.91	44.26	2.45	34.6%	32.6%	9.3%
Total	Fail%		530	42.5%	1.49	20.70	2.15	0.64	8.69	1.57	57.2%	58.0%	27.0%
1983	Pass	-	116		0.38	3.90	1.80	0.38	3.90	1.80	0.0%	0.0%	0.0%
P	Fail	Pass	60	23.6%	1.83	27.37	2.53	0.39	5.16	1.67	78.6%	81.2%	34.2%
	Fail	Unresolv.	71	28.0%	4.40	68.34	2.61	1.38	22.86	0.89	68.6%	66.5%	65.9%
	Fail	Waiver	7	2.8%	3.70	55.75	3.22	2.51	23.53	2.01	32.0%	57.8%	37.5%
Total	Fail%		254	54.3%	1.94	28.89	2.24	0.72	10.04	1.52	62.8%	65.2%	32.1%
1984	Pass	-	1,102		0.39	3.94	1.60	0.39	3.94	1.60	0.0%	0.0%	0.0%
P	Fail	Pass	344	19.8%	1.73	25.83	2.45	0.40	4.32	1.41	76.6%	83.3%	42.3%
	Fail	Unresolv.	240	13.8%	3.46	51.41	2.30	1.11	15.51	0.80	67.8%	69.8%	65.2%
	Fail	Waiver	54	3.1%	3.39	54.82	2.43	2.07	34.25	1.74	38.9%	37.5%	28.5%
Total	Fail%		1,740	36.7%	1.17	16.40	1.89	0.55	6.55	1.46	53.4%	60.0%	22.9%

3. *OBD Tests*

OBD-II equipped vehicles were passed and failed using the OBD I/M test procedure and there were no associated tailpipe emissions test results available to assess the emissions reductions. Instead, an estimate of the direct emissions reductions has been obtained from on-road RSD measurements of these vehicles within 90 days before and 90 days after their I/M testing. Note, however, that maintenance of OBD-II equipped vehicles is likely to occur on a continuing basis as vehicle owners are alerted to problems by MIL illuminations. Therefore, it likely additional emissions reductions resulted from maintenance actions performed outside this measurement window and they are not accounted for in this analysis. For the 2006 report, all 1996 and newer vehicles emissions have been estimated using the remote sensing data as done for the second half of 2005.

The on-road RSD measurements were filtered to eliminate those made below 40 degrees Fahrenheit and at a vehicle specific power (VSP) below 5 kw/t or above 30 kw/t. This filtering was performed to eliminate vehicles that were tested on-road under conditions not included in the IM240 test procedure such as cold starts and VSP values outside of the testing range that might produce atypically high emissions measurements. Since this screening eliminates vehicles that are likely to have high emissions reading relative to the IM240 test, the screening is not required for determining clean vehicles for RapidScreen.

IM240 equivalent g/mi values were projected from RSD emissions data. RSD emissions and calendar year IM240 emissions were correlated using average emissions by vehicle type and model-year from calendar year 2002 data. In developing these correlations, the screening criteria noted above were applied to the RSD data. Calendar year 2002 was the last year in which all OBD-II equipped vehicles were given an IM240 test; and, therefore, an unbiased large sample of IM240 data was available. The correlations obtained are shown in Figures IV-1 through IV-3.

Results are shown in Tables IV-4, which lists estimated g/mi emissions before and after OBD testing. Table IV-5 shows similar results for the RapidScreen audit vehicles that were OBD tested.

Figure IV-1 IM240 HC vs. RSD for 1996-2002 models

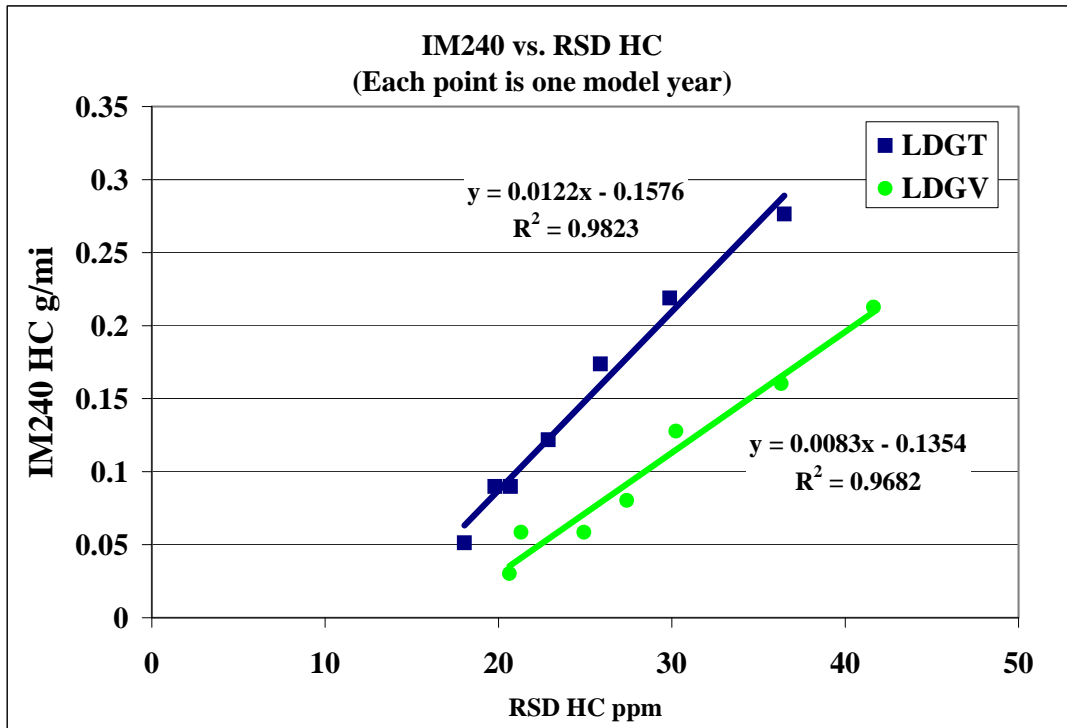


Figure IV-2 IM240 CO vs. RSD for 1996-2002 models

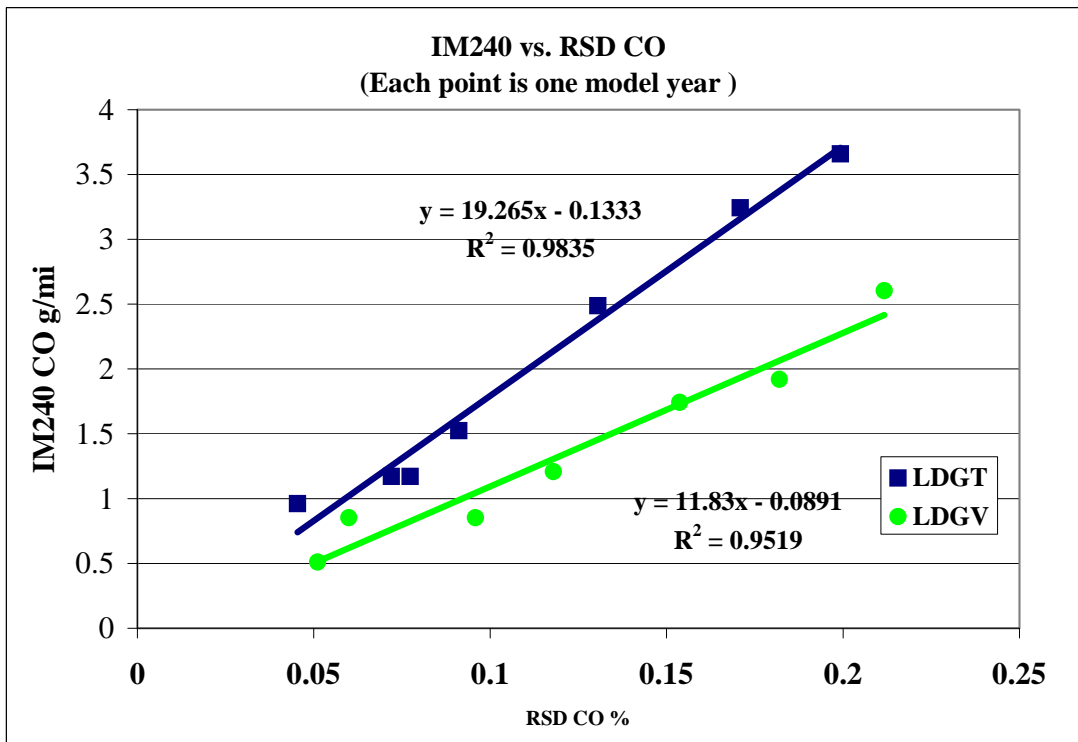


Figure IV-3 IM240 NOx vs. RSD for 1996-2002 models

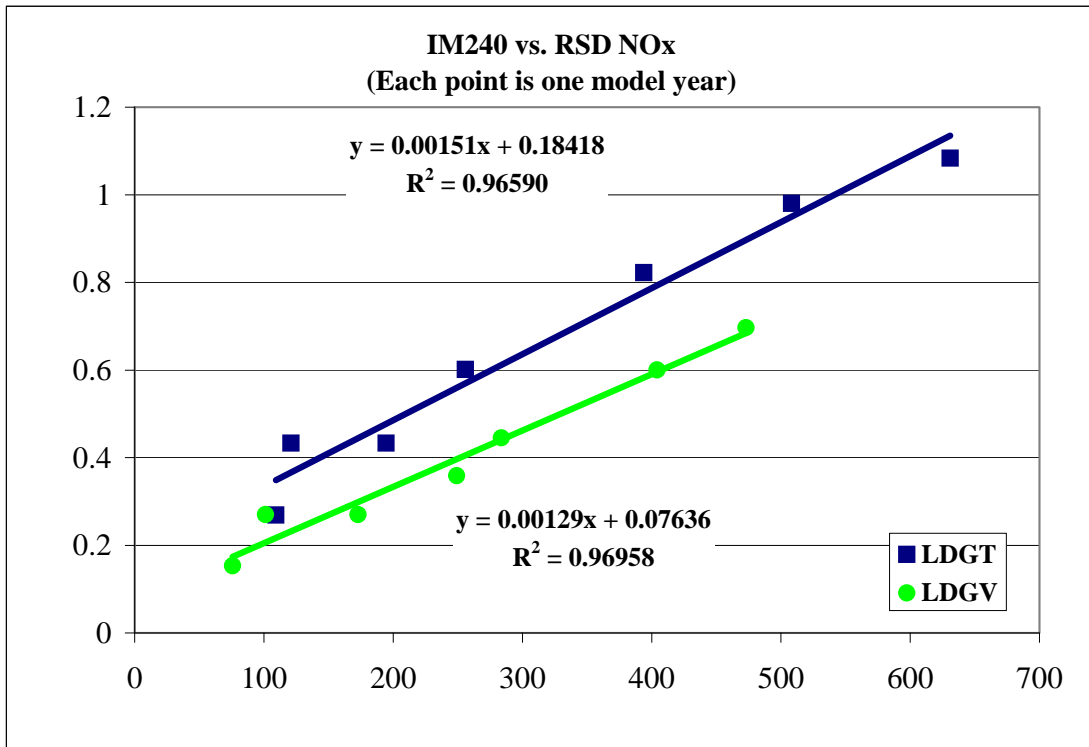


Table IV-4 IM240 Equivalent g/mi Emissions Before and After OBD Tests

Model		Initial g/mi			Final g/mi		
Year/Type	Vehicles	HC	CO	NOX	HC	CO	NOX
P 1996	29,093	0.3	3.5	0.9	0.3	3.0	0.9
P 1997	8,528	0.3	3.0	0.8	0.2	3.0	0.8
P 1998	34,572	0.2	3.2	0.7	0.1	2.5	0.6
P 1999	8,932	0.1	1.9	0.6	0.1	1.9	0.5
P 2000	40,591	0.1	1.9	0.5	0.1	1.5	0.4
P 2001	8,991	0.1	0.9	0.3	0.0	0.7	0.3
P 2002	39,051	0.0	1.0	0.2	0.0	0.7	0.2
P 2003	9,851	0.0	0.5	0.2	0.0	0.5	0.2
P 2004	34,128	0.0	0.6	0.1	0.0	0.5	0.1
P 2005	11,533	0.0	0.3	0.1	0.0	0.4	0.1
P 2006	4,311	0.0	0.5	0.1	0.0	0.3	0.1
T 1996	15,414	0.5	5.2	1.5	0.4	4.4	1.4
T 1997	4,354	0.4	4.4	1.4	0.3	3.5	1.2
T 1998	23,433	0.2	3.8	1.1	0.2	3.3	1.1
T 1999	5,632	0.1	2.3	0.7	0.2	2.5	0.8
T 2000	26,238	0.1	2.5	0.6	0.1	1.9	0.6
T 2001	5,857	0.1	1.6	0.4	0.0	1.1	0.4
T 2002	31,006	0.1	1.7	0.4	0.0	1.2	0.4
T 2003	7,562	0.1	0.9	0.3	0.0	0.9	0.3
T 2004	30,227	0.0	0.8	0.3	0.0	0.7	0.3
T 2005	6,286	0.0	0.7	0.3	0.0	0.5	0.3
T 2006	2,744	0.0	1.0	0.2	0.0	0.6	0.2
Average	388,334	0.11	1.98	0.52	0.08	1.63	0.49

Table IV-5 IM240 Equivalent g/mi Emissions Before and After OBD Audit Tests

Model		Initial g/mi			Final g/mi		
Year/Type	Vehicles	HC	CO	NOX	HC	CO	NOX
P 1996	96	0.1	1.2	0.7	0.2	1.8	0.6
P 1997	7	0.0	1.7	0.4	0.6	2.4	1.2
P 1998	233	0.2	1.9	0.1	0.1	2.0	0.5
P 1999	4	0.1	9.3	0.2	-1.0	-0.1	2.2
P 2000	403	0.1	1.1	0.5	0.1	1.5	0.4
P 2001	7	0.0	0.6	0.2	-0.1	0.2	0.1
P 2002	436	0.0	0.7	0.2	0.0	0.7	0.2
P 2003	4	0.2	0.5	0.1	0.0	0.1	0.1
P 2004	383	0.0	0.4	0.1	-0.1	0.3	0.1
T 1996	66	0.4	2.7	1.1	-0.1	2.7	1.0
T 1997	1	0.9	2.1	1.0	0.1	1.4	0.8
T 1998	134	0.1	2.7	1.3	0.1	1.9	1.1
T 1999	6	-0.5	0.3	0.4	-0.1	1.5	0.7
T 2000	300	0.0	2.1	0.6	0.1	2.4	0.5
T 2001	5	0.0	0.7	0.2	-0.2	-0.1	1.2
T 2002	444	0.0	1.0	0.3	0.0	0.8	0.4
T 2003	13	0.0	1.2	0.4	-0.2	0.5	0.4
T 2004	439	0.0	0.7	0.2	0.0	0.4	0.2
Average	2,981	0.06	1.16	0.37	0.04	1.14	0.37

Audit Sample Reductions and Projected Impact

Table IV-6 shows the aggregate first and final results for the audit sample and for all the vehicles that were tested in stations. The emissions reductions from the audit sample are used to project the reductions that could have been achieved if the vehicles that were exempted using one of the two clean screen remote sensing methods (RSD-2 or Hybrid) had instead been inspected at the stations. This amount is then compared to the total emission reductions from vehicles tested at stations to determine the impact of the RapidScreen program and the percentage of emissions reductions retained.

For vehicles subject to OBD testing, the RapidScreen program retained 80.6% of measured HC reductions, 94.8% of measured CO reductions and 93.6% of measured NOx reductions. It should be noted, however, that directly measured OBD I/M benefits are small compared to Mobile6 projections. A probable explanation is that OBD I/M acts as a deterrent against owners ignoring MILs and encourages owners to obtain prompt repairs. Repairs occurring independently of the I/M test schedule are not directly measurable through the I/M program data or RSD data - except that OBD vehicles emissions remain low compared to the projected Mobile6 non-I/M emission levels. Assuming that Mobile6 is correct and dividing the measured clean screen credit loss by the Mobile6 estimate of OBD I/M program benefits would show the percentage loss attributable to clean screen is actually much smaller than the measured percentages shown here.

For vehicles subject to the IM240 test, the RapidScreen program retained 97.5% of HC reductions, 96.3% of CO reductions and 97.3% of NOx reductions.

For vehicles subject to either the Enhanced or Basic area idle tests, the RapidScreen program retained 100% of the HC and CO reductions from these vehicles. The audit samples are too small to be certain of this but previous years results have also shown 98-100% retention of benefits for the few vehicles subject to idle testing.

These reductions assume all vehicles are driven the same number of miles each year. Mileage adjusted emission reductions are calculated in section VII. C.

Table IV-6 RapidScreen Emissions Impact for Tailpipe Emissions.

	OBD RSD Est'd Tailpipe Emissions				IM240 Tailpipe Emissions				Enhanced Idle Tailpipe			Basic Idle Tailpipe		
	Vehicles	HC g/mi	CO g/mi	NOx g/mi	Vehicles	HC g/mi	CO g/mi	NOx g/mi	Vehicles	HC ppm	CO %	Vehicles	HC ppm	CO %
Audit Sample	2,981				198				1			67		
Mean Initial		0.049	1.111	0.359		0.459	3.99	1.402		18.0	0.010		24.2	0.059
Mean Final		0.029	1.058	0.355		0.425	3.79	1.339		18.0	0.010		24.3	0.058
Emissions reduction		0.020	0.05	0.004		0.034	0.21	0.063		0.0	0.000		-0.1	0.000
RapidScreens	132,327				8,934				48			2,980		
Potential Reductions		2,653	7,061	562		306	1,844	560		-	-		(267)	1
Station Vehicles	388,334				125,097				2,741			36,860		
Mean Initial		0.096	1.831	0.482		0.853	8.69	1.820		214.1	0.573		58.8	0.206
Mean Final		0.068	1.497	0.461		0.537	5.12	1.617		116.0	0.262		42.3	0.113
Emissions reduction		0.028	0.33	0.021		0.317	3.57	0.203		98.1	0.312		16.5	0.093
In station reductions		11,053	129,530	8,193		39,603	446,550	25,372		269,012	854		608,633	3,424
Combined RS & Stn	520,661	13,706	136,591	8,754	134,031	39,909	448,394	25,932	2,789	269,012	854	39,840	608,366	3,425
Rapid Screen Impact		19.4%	5.2%	6.4%		0.8%	0.4%	2.2%		0.0%	0.0%		0.0%	0.0%
Retained Reductions		80.6%	94.8%	93.6%		99.2%	99.6%	97.8%		100.0%	100.0%		100.0%	100.0%

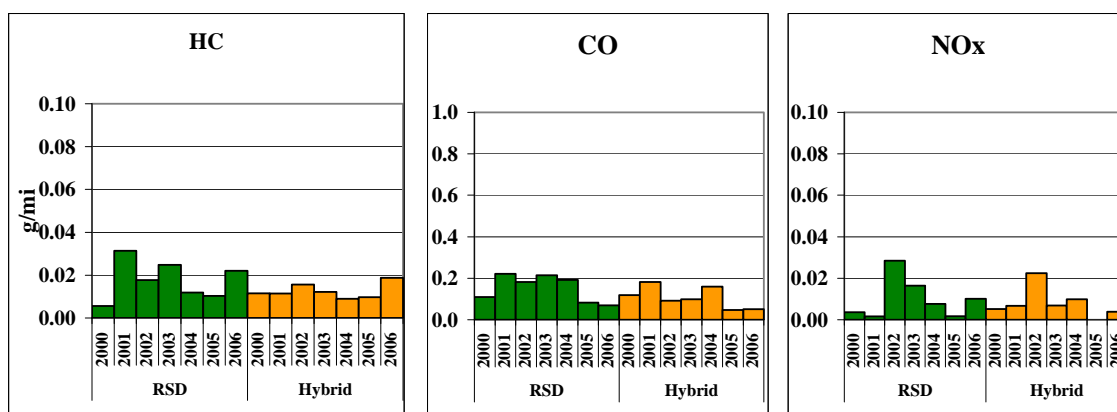
4. *RapidScreen Effectiveness*

The emission reductions that could have been achieved per RapidScreen vehicle by station testing are projected from the audit results and compared by RapidScreen method in Figure IV-4, which shows the annual results since the program started in 2000. For convenience, the start-up period is labeled as 2000 but in fact covered testing from the start of the program in 2000 through March 2001. Note that the average reductions from the RapidScreen audit vehicles selected using the RSD or Hybrid method are small.

In 2002, station IM240 standards for all three gases were tightened. The results of these changes were reflected in the LEI table at the start of 2003 using information from 2002 inspections but not in the table used in 2002. Thus, LEI loss per vehicle for NO_x was higher in 2002 than in 2001 (as a result of the tighter standards) and lower in 2003 and 2004 than in 2002 (as a result of a more up-to-date LEI table). The RSD-2 cutpoints have remained unchanged over the program except for the NO_x cutpoint that was reduced to 1,500 ppm for May through December 2001 registrations. The RSD-2 method showed very low and the Hybrid method showed no net loss of NO_x reductions in 2005. The smaller loss of NO_x reductions was attributed in part to the use of an updated LEI table in June-December 2005 using more recent Missouri test results, which tightened the LEI screen.

In 2006, the losses associated with OBD RapidScreen vehicles were assumed to be the same for each method. The losses have increased slightly as the number of OBD vehicles increased and RSD measured I/M reductions for OBD vehicles increased. The greatest increase was for HC and the RSD cutpoints for OBD vehicles should be reviewed.

Figure IV-4 RapidScreen Tailpipe Emissions Loss per Vehicle (IM240 Equivalent g/mi)

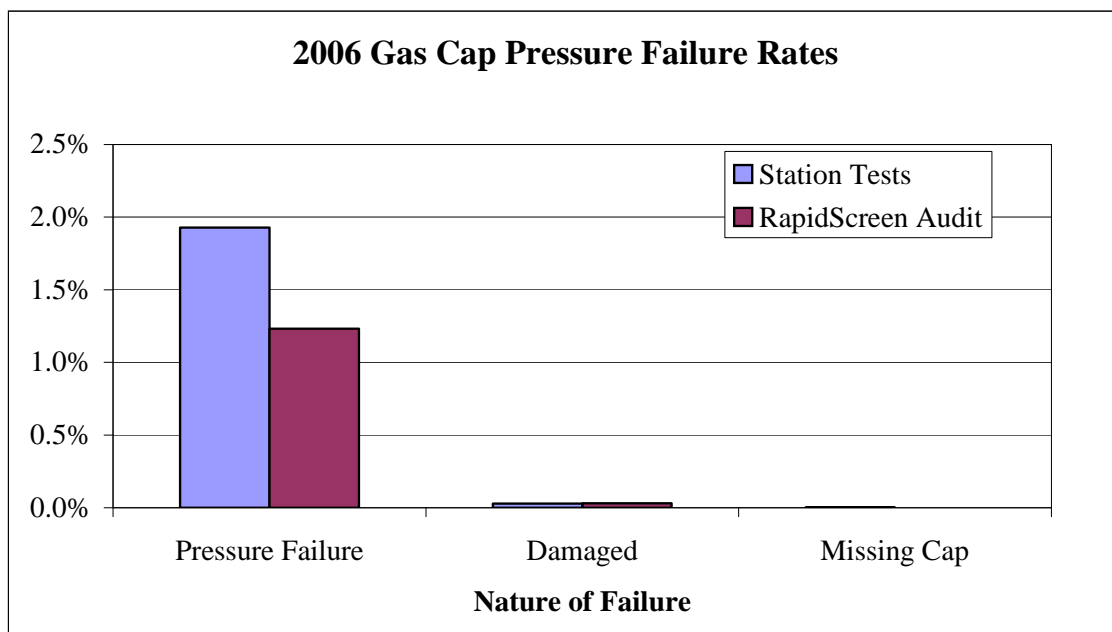


C. *Evaporative Emissions*

The evaporative emissions test used in the Gateway Clean Air Program is a gas cap pressure test. Leaking gas caps allow evaporated gasoline (HC) to escape from vehicle gas tanks into the atmosphere. The impact of leaking gas caps on the RapidScreen program is only evaluated in this report in terms of the failure rate, not in terms of repairable gas cap emissions reductionsⁱ.

Figure IV-5 compares the average gas cap failure rate of the RapidScreen audit sample vehicles to the average failure rate of the non-audit vehicles tested at stations. The failure rate of vehicles exempted using one of the RapidScreen methods is lower than the failure rate of vehicles that received a station-based test, but the difference between the two groups of vehicles is not as great as it was for tailpipe emissions (See Figure IV-1). This result is expected because remote sensing is directed towards measuring tailpipe emissions. An evaporative leak would have to be quite large to be detected by RSD units. There were fewer vehicles with damaged caps in 2006 than in the first two years of the program. No vehicles with missing gas caps were found among the RapidScreen audit sample and a minimal number of missing caps were identified with non-audit vehicles in 2006. These results, which are similar to 2003 to 2005 results, indicate a continuing reduction in evaporative emissions due to improved maintenance.

Figure IV-5 Average Gas Cap Pressure Failure Rates



ⁱ Although the gas cap leak rates are measured in the Gateway Clean Air Program, it is not clear that leak rates are directly related to the amount of evaporative HC emissions released from the gas tank. A small pressure leak may have the same effect as a large pressure leak, as long as it is sufficient to release internal gas tank pressure over a period of an hour or so.

Using the fail rates identified in the audit sample, Table IV-6 shows the projected gas cap failures that would have been found in the vehicles that redeemed their RapidScreen noticesⁱ. These projected gas cap failures are added to the actual gas cap failures identified in initial inspections at the test stations to provide the total possible gas cap failure rate for the program. Vehicles with redeemed RapidScreen notices account for 15% of the projected total gas cap failures; therefore, 85% of evaporative HC emission reductions were retained.

Table IV-6 RapidScreen Impact on Evaporative HC Emissions

	Initial Tests	Pressure Failure	Damaged	Missing Cap	Total
RapidScreen Audit	3,247	1.23%	0.03%	0.00%	1.26%
Projected RapidScreen	144,178	1,776	44	-	1,821
Station GC Tests	542,882	10,472	154	12	10,638
Total Program	687,060	12,248	198	12	12,459
RapidScreen Impact	21%	15%	22%	0%	15%
Retained Reductions	79%	85%	78%	100%	85%

ⁱ Only 1981 and newer model year vehicles are gas cap tested. Therefore, fewer vehicles are given a gas cap test than are given an emissions test.

V. On-Road Testing Results

The remote sensing measurements collected during the startup period have been used to plot charts of the on-road vehicle emissions of vehicles registered to the Basic and Enhanced areas. For fleet evaluation and high emitter identification, it is useful to use remote sensing measurements that are within the range of engine operating conditions over which emissions are intended to be controlled. As noted in section III. A. 1., RSD measurements of vehicles operating within the vehicle specific power range of 3 to 22 kW/t have been used for the analysis in section V.

A. Basic and Enhanced Area On-Road Emissions

Figures V-1 through V-3 show the average measured emissions by model year of vehicles registered in the Basic area and Enhanced areas. Prior to 2000, Basic area vehicles were not subject to any emissions test. Beginning in April 2000, Basic area vehicles have been tested annually using the less stringent idle test for HC and CO (but not NO_x). Starting in August 28, 2003 they were required to be tested biennially using the idle test. All 1981 and newer vehicles in the Enhanced area have been tested biennially using the IM240 test for HC, CO and NO_x emissions or the OBD I/M test. After August 28, 2004, all vehicles with model year greater than 26 years from the test year were exempted from testing; thus, for 2004, the oldest vehicles tested were 1978 model years and for 2006 the oldest vehicles tested were 1980 model years.

Figure V-1 RSD HC Emissions by Model Year

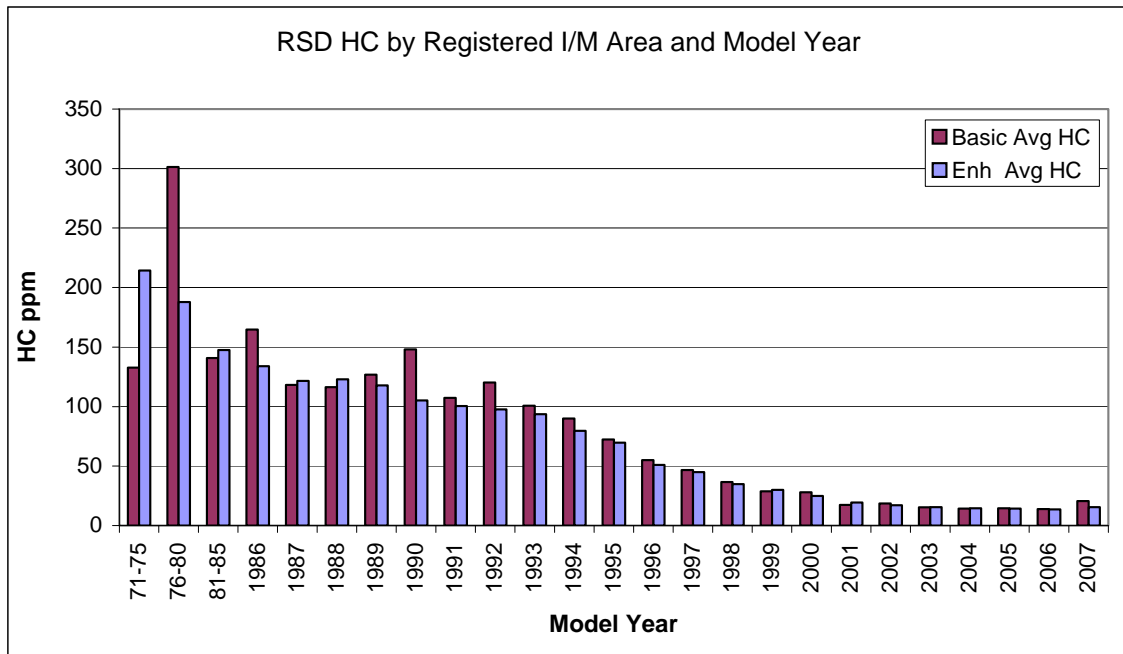


Figure V-2 RSD CO Emissions by Model Year

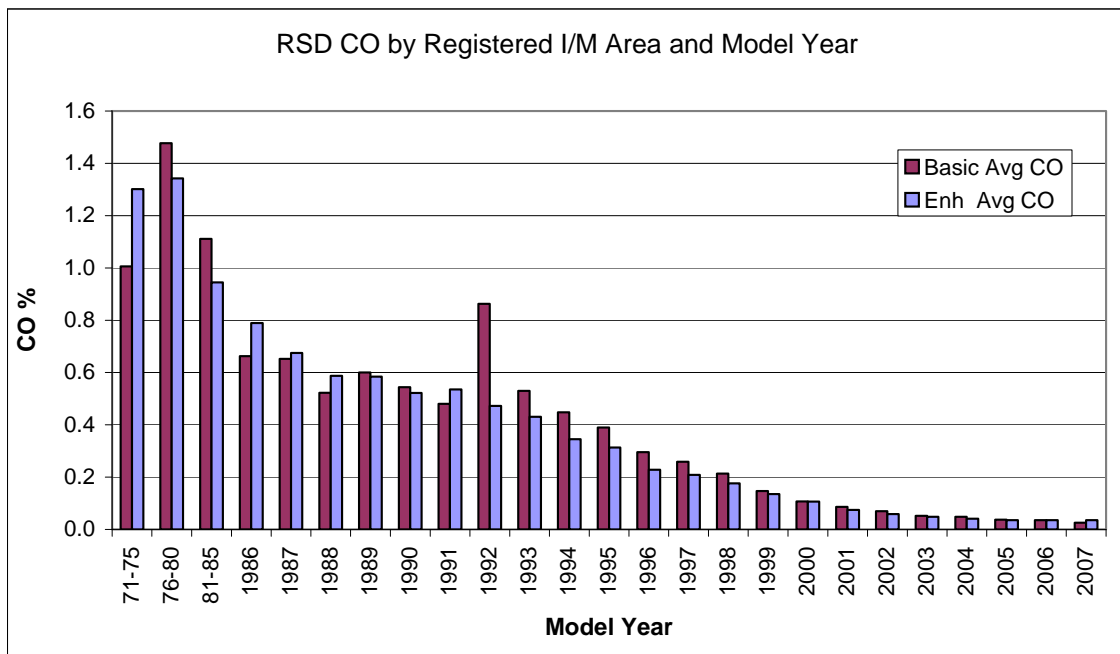
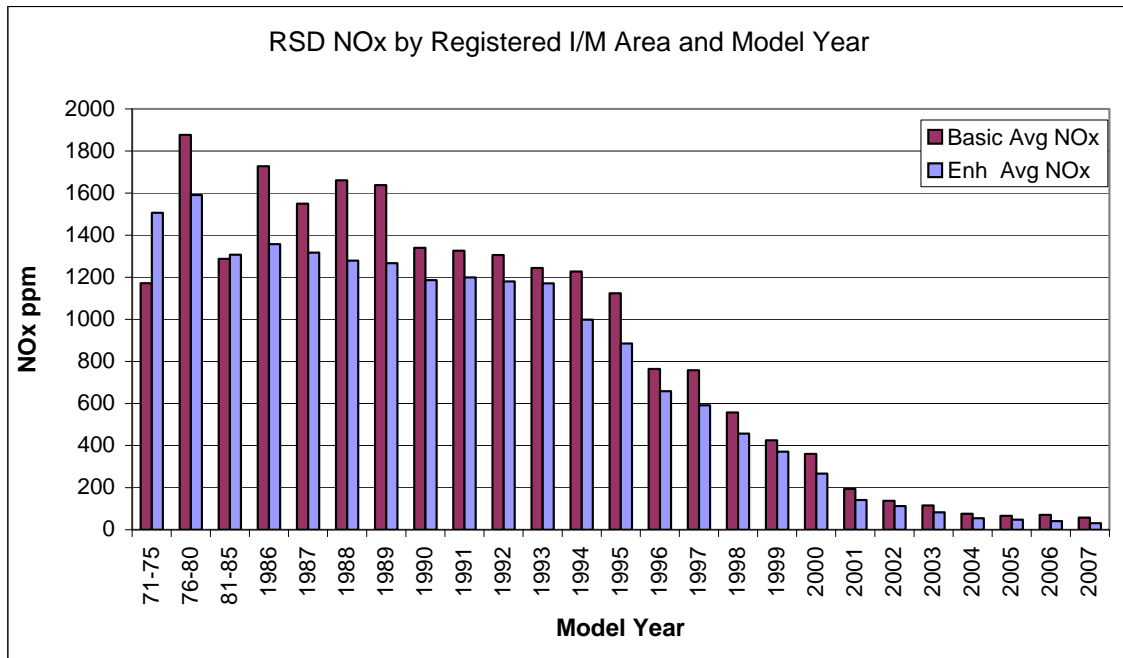


Figure V-3 RSD NOx Emissions by Model Year

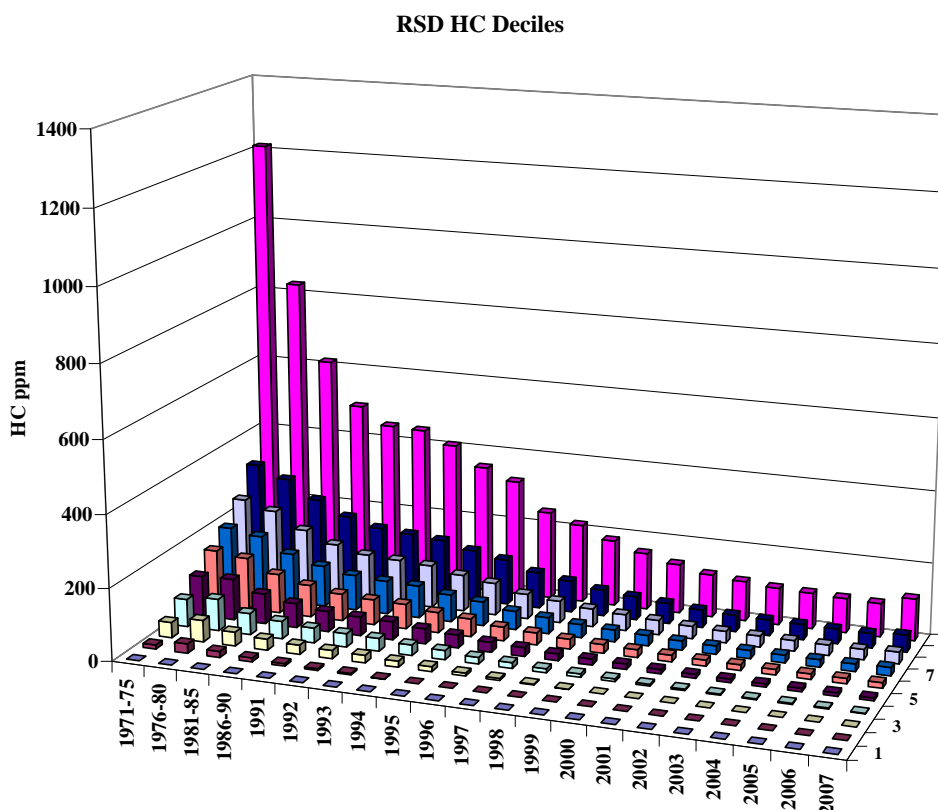


B. On-Road Emission Deciles by Model Year

Figures V-4 through V-6 illustrate the emissions distribution within each model year. Remote sensing measurements falling within the VSP range of 3-22kW/t were averaged to obtain a single result per vehicle. For each pollutant, vehicles were ranked and divided into ten groups per model year with each decile containing 10% of the vehicles. The vertical bars show the average emissions of each decile. It should be noted that although the oldest vehicles have the highest average emissions, their numbers are quite small and on average they drive fewer miles each year than newer vehicles. Section VI contains figures showing tons of emissions by model year.

These three figures illustrate that there are low emitting and high emitting vehicles in all model years, but the proportion of low emitting vehicles is much greater among newer vehicles. The level of emissions among the highest emitting decile of vehicles in each model year is much higher for the older vehicles.

Figure V-4 Enhanced Area Vehicle HC Deciles by Model Year



NOx emissions appear to be more evenly distributed throughout the fleet. It is unclear whether the increase in measured NOx emissions from newer to older model years is purely related to vehicle age or is a mixture of improved technology and age.

Figure V-5 Enhanced Area Vehicle CO Deciles by Model Year

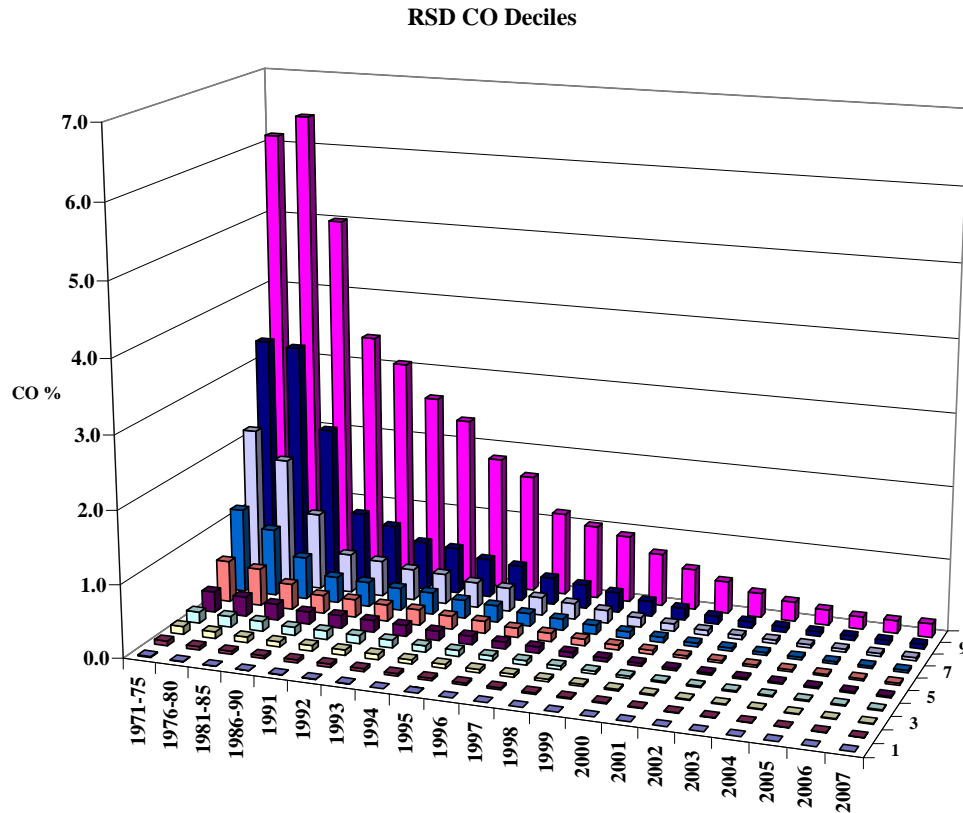
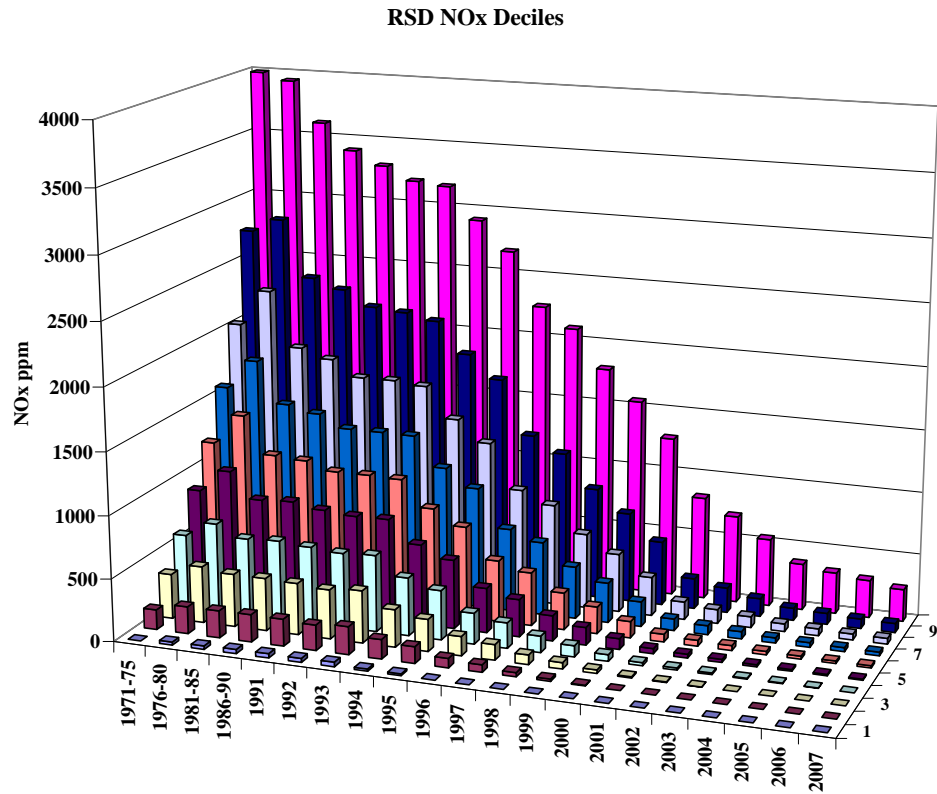


Figure V-6 Enhanced Area Vehicle NOx Deciles by Model Year



VI. Estimate of Combined Program Reductions

In section IV. B. 2., percentage reductions from the Gateway Clean Air Program were estimated for each model year. Mass emissions of OBD-II vehicles were also estimated from RSD measurements. In order to estimate the overall RapidScreen impact, two additional tasks remain: the conversion of idle test emission results from concentration to mass equivalents, and the weighting of emission results by the average number of annual miles driven.

A. Conversion of Idle Test Results

The remote sensing measurement correlations developed in section VI. A. of the 2001 report are used to convert all test values to IM240-equivalent values.

The IM240 test correlations for 2001 and the start-up period are summarized in Table VII-1, where:

$$\text{IM240 (g/mi)} = (A \times \text{RSD}) + B$$

Table VI-1 IM240 vs. RSD Correlation

January – December 2001

Emission	Type	A	B	R2
HC	LDGV	0.0162	-0.3750	0.96
HC	LDGT	0.0172	-0.1624	0.95
CO	LDGV	25.71	-2.30	0.98
CO	LDGT	22.41	0.47	0.99
NOx	LDGV	0.0016	-0.0143	0.99
NOx	LDGT	0.0017	0.2069	0.96

Start-Up (January 2000 – March 2001)

Emission	Type	A	B	R2
HC	LDGV	0.0149	-0.4193	0.97
HC	LDGT	0.0169	-0.2702	0.88
CO	LDGV	25.58	-2.31	0.97
CO	LDGT	26.63	-0.73	0.92
NOx	LDGV	0.0016	-0.0555	0.99
NOx	LDGT	0.0017	0.2003	0.98

The relationships between RSD and IM240 for 2001 were similar to those found for the start-up period.

The idle test correlations are summarized in Tables VI-2 and VI-3, where:

$$\text{Idle Test (ppm or \%)} = C \times \text{RSD}$$

Table VI-2 Enhanced Idle vs. RSD Correlation

January – December 2001

Emission	Type	C	R2
HC	LDGV	1.524	0.84
HC	LDGT	1.456	0.77
CO	LDGV	0.683	0.65
CO	LDGT	0.793	0.78

Start-Up (January 2000 – March 2001)

Emission	Type	C	R2
HC	LDGV	1.236	0.87
HC	LDGT	1.522	0.83
CO	LDGV	0.543	0.67
CO	LDGT	0.702	0.68

Table VI-3 Basic Idle vs. RSD Correlation

January – December 2001

Emission	Type	C	R2
HC	LDGV	1.329	0.69
HC	LDGT	1.374	0.77
CO	LDGV	0.820	0.91
CO	LDGT	0.839	0.76

Start-Up (January 2000 – March 2001)

Emission	Type	C	R2
HC	LDGV	0.982	0.60
HC	LDGT	1.266	0.79
CO	LDGV	0.644	0.43
CO	LDGT	0.813	0.80

Rearranging the idle test RSD equation yields:

$$\text{RSD} = (1 / C) \times \text{Idle Test}.$$

This is substituted into the IM240 correlation to give:

$$\text{IM240 (g/mi)} = A \times [(1 / C) \times \text{Idle Test}] + B$$

Or,

$$\text{IM240 (g/mi)} = [(A / C) \times \text{Idle Test}] + B$$

The resulting idle test to IM240 test conversion factors are summarized in Tables VI-4 and VI-5. The idle test vs. RSD correlations are not as high as the IM240 vs. RSD correlations as

shown by the R2 values in the tables VI-2 and VI-3. Therefore, the calculation of mass emissions from idle test measurements is an approximation.

Table VI-4 Enhanced Idle to IM240 Conversion

January – December 2001

Emission	Type	(A / C)	B
HC	LDGV	0.0106	-0.3750
HC	LDGT	0.0118	-0.1624
CO	LDGV	37.63	-2.30
CO	LDGT	28.27	0.47

Start-Up (January 2000 – March 2001)

Emission	Type	(A / C)	B
HC	LDGV	0.0121	-0.4193
HC	LDGT	0.0111	-0.2702
CO	LDGV	47.13	-2.31
CO	LDGT	37.95	-0.73

Table VI-5 Basic Idle to IM240 Conversion

January – December 2001

Emission	Type	(A / C)	B
HC	LDGV	0.0122	-0.3750
HC	LDGT	0.0125	-0.1624
CO	LDGV	31.37	-2.30
CO	LDGT	26.70	0.47

Start-Up (January 2000 – March 2001)

Emission	Type	(A / C)	B
HC	LDGV	0.0152	-0.4193
HC	LDGT	0.0133	-0.2702
CO	LDGV	39.73	-2.31
CO	LDGT	32.77	-0.73

B. Annual Mileage Weighting

Because of data entry errors and odometer rollover on older, high mileage vehicles, obtaining estimates of annual mileage from the Gateway Clean Air Program odometer readings for each model year and type of vehicle is not recommended. To avoid these problems, the national average annual mileages that EPA developed as part of the development of the Mobile6 inventory model⁹ have been used.

The estimated annual mileages are shown in Table VI-6 for LDGVs and LDGTs. Since EPA gives separate estimates of mileage for LDGTs below and above 6,000 pounds GVWR, an assumption of an 80:20 mix of these trucks, respectively, has been used to generate Table VI-6. This table indicates that newer model year vehicles are driven more miles annually than older vehicles. It also indicates that 1988 and newer model year LDGTs, which emit greater masses of pollution than LDGVs (See section VI. A. 1.), are driven more miles annually than 1988 and newer model year LDGVs.

Table VI-6 Estimated Annual Mileage in 2006

Year	LDGV	LDGT
1981	4,318	2,477
1982	4,542	2,749
1983	4,656	3,051
1984	4,898	3,387
1985	5,152	3,754
1986	5,420	4,154
1987	5,701	4,588
1988	5,997	5,055
1989	6,308	5,556
1990	6,636	6,093
1991	6,980	6,663
1992	7,342	7,269
1993	7,723	7,911
1994	8,124	8,589
1995	8,546	9,305
1996	8,989	10,057
1997	9,456	10,849
1998	9,947	11,681
1999	10,463	12,553
2000	11,006	13,465
2001	11,577	14,420
2002	12,178	15,417
2003	12,810	16,459
2004	13,475	17,546
2005	14,174	18,680
2006	14,910	19,863

C. Annual Emissions Reductions

The average initial and final emissions for each test type, vehicle type and model year, (See Appendix B), are multiplied by the number of vehicles and the annual mileage to determine the initial and final tons of emissions and, therefore, the tons of reduction. In the case of vehicles tested using the idle test, the results for each year are converted to IM240 equivalents using the conversion equations developed in section VI. A. The results of the computations for each model year are included in Appendix Cⁱ.

Table VI-7 first shows the reductions from the RapidScreen audit tests. Based on the audit tests, the second part of the table projects the potential reductions from the RapidScreen vehicles if all vehicles with redeemed RapidScreen notices had been tested at a station. The third part of the table shows the reductions from the vehicles that were tested at inspection stations, which includes the RapidScreen audit vehicles. The total potential reductions from the program are the combination of the potential reductions from the RapidScreened vehicles plus the actual reductions from the vehicles tested at stations.

In Table IV-4, RapidScreen effectiveness was expressed without reference to the annual vehicle miles traveled (VMT) by each model year of vehicles. The more complete analysis in Table VI-7 shows that the RapidScreen program effectiveness increases when the VMT estimates are factored in. During 2006, the RapidScreen program retained 92.5%, 98.1% and 96.1% respectively of potential HC, CO and NOx tailpipe emission reductions in vehicles subject to testing. As noted earlier, the real percentages of benefit retained are higher because much of the OBD I/M benefits are not directly measured and are not included in the estimate of retained benefits.

These calculations show that for the vehicles initially tested in calendar year 2006, the Gateway Clean Air Program eliminated 512 tons of exhaust HC, 6,025 tons of CO and 302 tons of NOx for one year of vehicle travel – based on the IM240 driving cycle. This does not include reductions from off-cycle repairs performed by motorists responding to OBD mil lights.

ⁱ Note that Appendix C results are only for vehicles whose first and last test in the year were the same type of test. Another 1% of vehicles had different first and last tests. These have been included in Table VI-7 according to their first test type.

Table VI-7 Estimated Annual Tons Of Reduction

Audit Vehicle Reductions (tons/yr)				
Audit Tests	Unique Vehicles	HC	CO	NOx
OBD-II	2,950	0.87	2.32	0.18
Enhanced IM240	198	0.05	0.29	0.09
Enhanced Idle	1	0.00	0.00	0.00
Basic Idle	67	0.00	0.01	0.00
Total	3,216	0.92	2.62	0.28

Potential from RS Vehicles (tons/yr)				
RapidScreen	Unique Vehicles	HC	CO	NOx
OBD-II	132,209	39.1	104.2	8.3
Enhanced IM240	8,934	2.2	13.0	4.1
Enhanced Idle	48	0.0	0.0	0.0
Basic Idle	2,980	-0.1	0.3	0.0
Total	144,171	41.3	117.6	12.4

Station Reductions (tons/yr)				
Station I/M Tests	Unique Vehicles	HC	CO	NOx
OBD-II	388,334	154.0	1,804.9	114.2
Enhanced IM240	125,097	286.5	3,198.9	187.9
Enhanced Idle	2,741	17.7	159.6	0.0
Basic Idle	36,860	53.5	861.7	0.0
Total Actual	553,032	511.6	6,025.1	302.0

Total Potential Reductions	552.9	6,142.7	314.4	
<i>RapidScreen Impact</i>	<i>7.5%</i>	<i>1.9%</i>	<i>3.9%</i>	
<i>Retained Reductions</i>	<i>92.5%</i>	<i>98.1%</i>	<i>96.1%</i>	

Because the program is biennial, these reductions are approximately half of the reductions that would be measured over a full two-year cycle of the program.

The tons of reductions cited here do not relate directly to the total mobile emissions inventory. The reductions cited are for tailpipe emissions and are in terms of the IM240 driving cycle. State Implementation Plan reductions are based on different driving cycles, are subject to many adjustments for speed, road type, temperature, air conditioning loads, etc., and therefore are larger than the IM240 measured reductions.

As noted earlier, the reductions shown do not include reductions from maintenance actions performed on vehicles before their initial inspection. These may be quite substantial, especially for OBD-II vehicles that turn on the check engine light to alert owners to problems.

Also, not calculated here are the reductions in evaporative emissions resulting from gas cap testing. In Table IV-5, it was estimated the RapidScreen program retains 85% of the potential HC reductions from gas cap testingⁱ.

Table VI-7 also shows that, during for the calendar year 2006, 144,171 vehicles redeemed RapidScreen notices, and 553,032 vehicles received a station test. Therefore, 21% out of the 697,203 unique vehicles considered in this analysis redeemed RapidScreen notices.

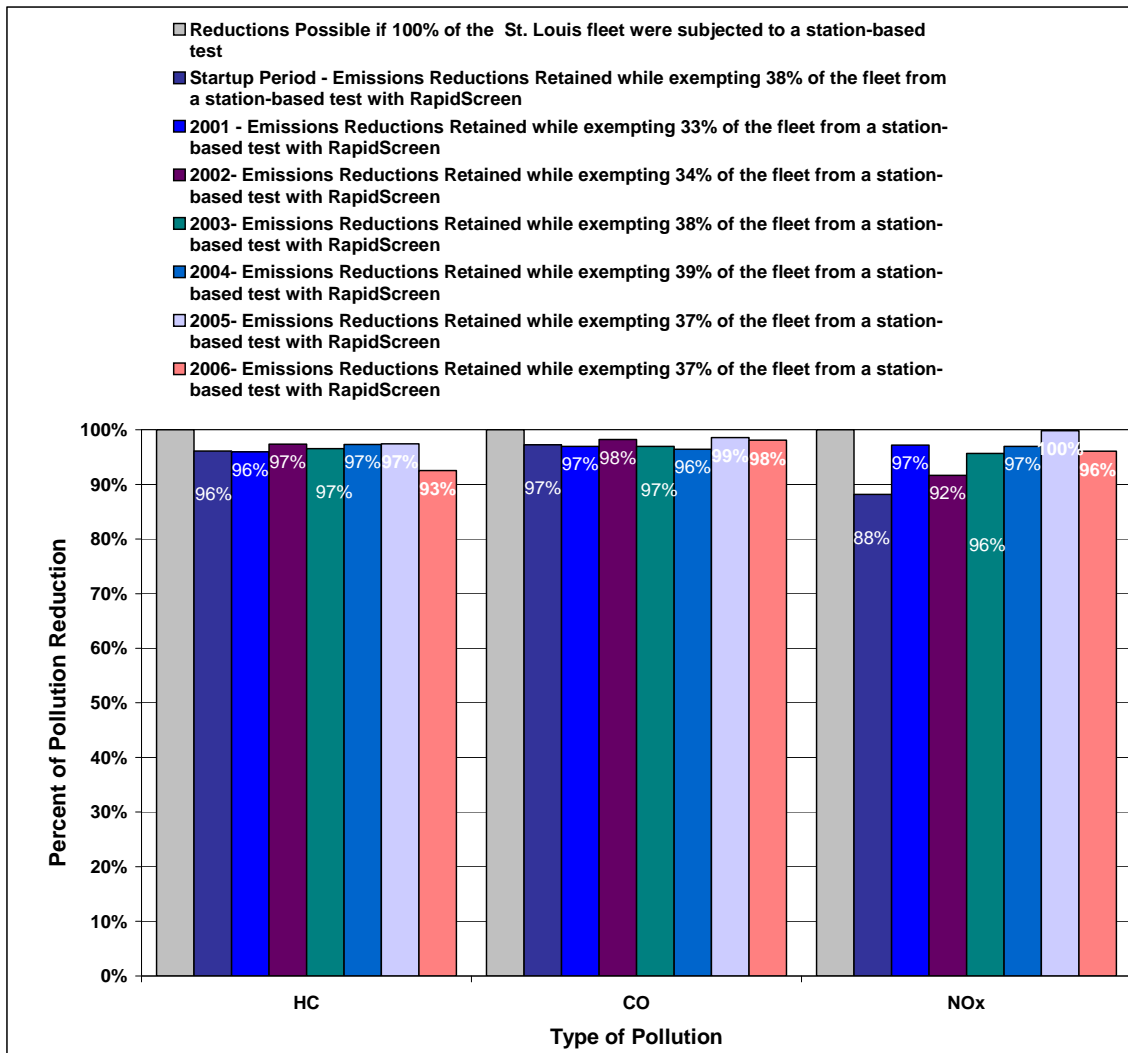
Vehicles less than two years old are statutorily exempt from inspection because the emission reductions that would be obtained by subjecting them to inspection and repair are assumed to be extremely small, if any. The vehicles less than two years old are estimated to be 16% of registered vehicles due for renewal in 2006. The total number of vehicles exempted from station testing using clean screen methods including the new model year exemption and the methods based on RSD clean screen testing make up 37% of registrations (21% exempted from a station test via redeemed RapidScreen notices + 16% exempted from a station test by statute).

Figure VI-1 illustrates the emission reductions retained by the Gateway Clean Air program while exempting 37% of vehicles from inspectionⁱⁱ.

ⁱ The evaporative emissions have not been adjusted for mileage but the effect of an adjustment would be small. Gas cap failures are more evenly distributed by age than tailpipe failures and only part of the evaporative emissions are running losses dependent on miles traveled.

ⁱⁱ It is assumed that no additional reductions would be obtained by testing vehicles less than two years old.

Figure VI-1 Air Quality Impact of RapidScreen



Figures VI-2 through VI-7 show the annual emissions inventories and reductions by model year and vehicle type for the vehicles tested in 2005, based on the IM240 driving cycle. In these charts, the reductions and remaining emissions of all vehicles older than 1981 are included with the reductions and remaining emissions of 1981 vehicles. The biennial testing cycle of the Enhanced area causes the difference between the sizes of the bars for odd model year vehicles vs. even model year vehicles.

On-road RSD measurements in the three months before and after their inspection have been used to estimate emissions for models 1996 and newer tested by the OBD I/M test procedure. However, as noted earlier, it is expected a majority of owners of OBD-II vehicles with an illuminated 'Check Engine' indicator will obtain a repair before bringing a vehicle for inspection. Therefore, these test data alone do not provide an accurate measure of the total emission reductions for these vehicles. The conversion from RSD ppm to IM240 g/mi is also dependent upon 2002 data and should ideally be updated.

The Figures indicate that older vehicles, which are fewer in number and driven fewer miles each year, still contribute many tons of excess emissions in the St. Louis non-attainment area.

Figure VI-2 LDGV Reductions and Remaining Emissions

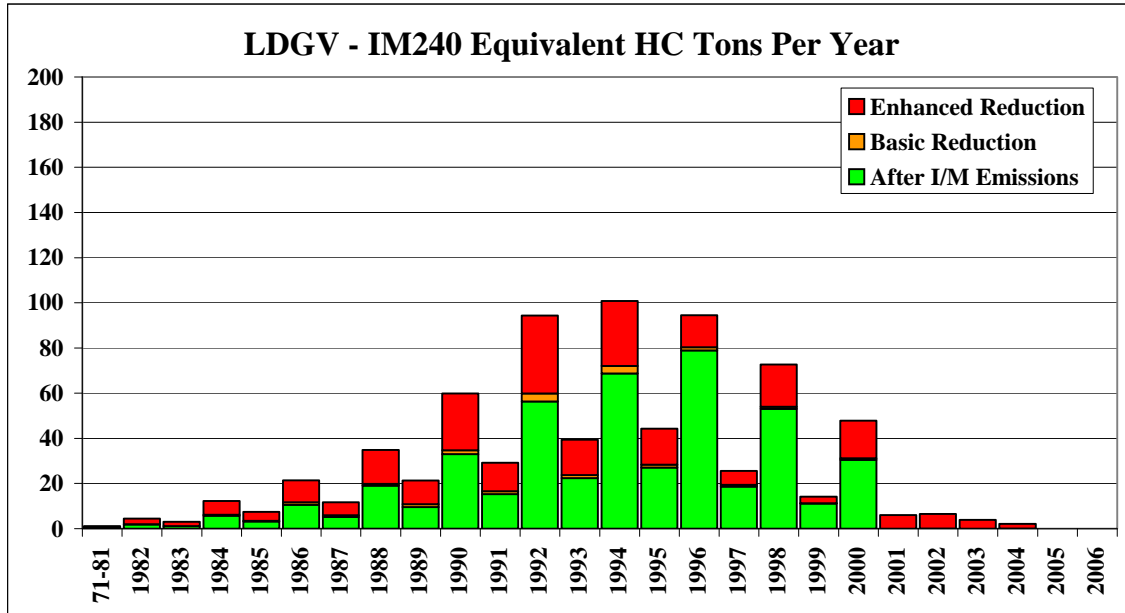


Figure VI-3 LDGT Reductions and Remaining Emissions

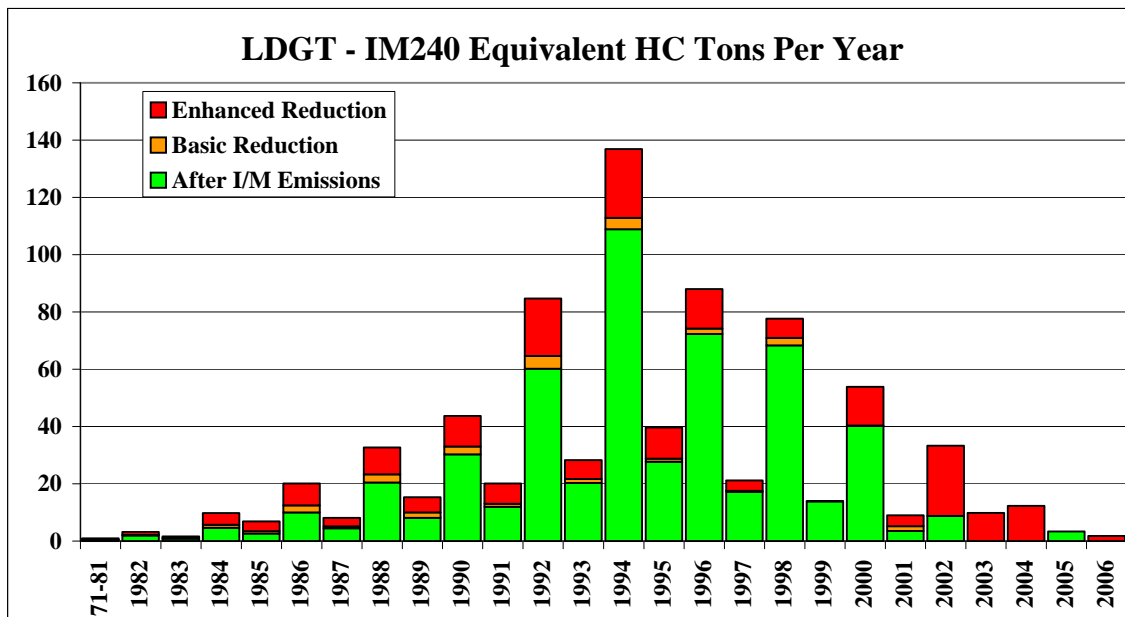


Figure VI-4 LDGV CO Reductions

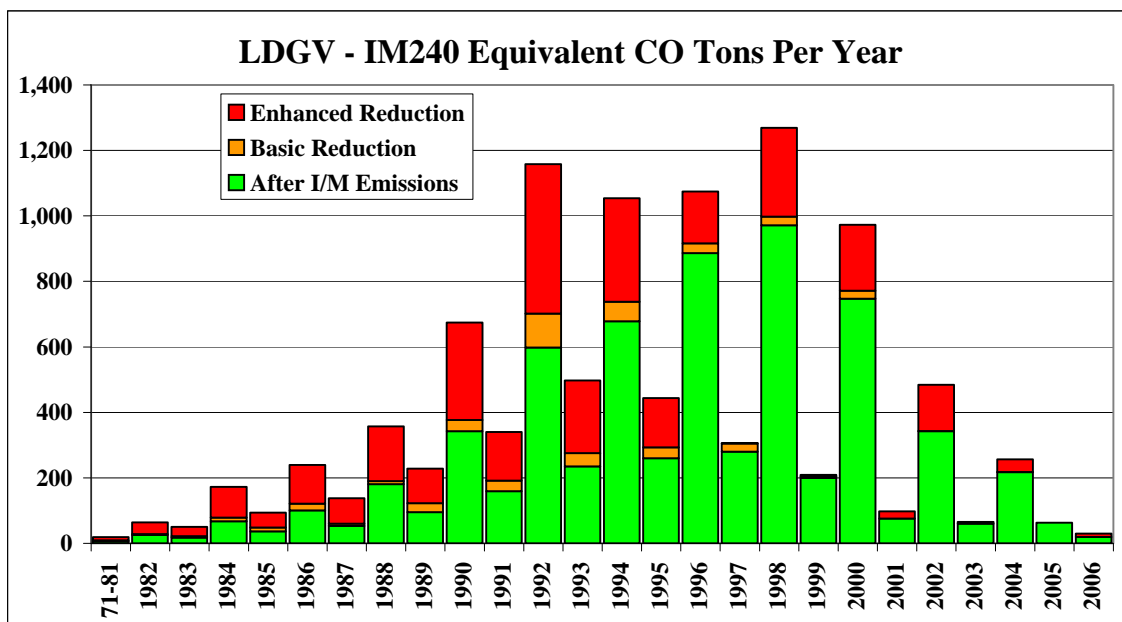


Figure VI-5 LDGT CO Reductions

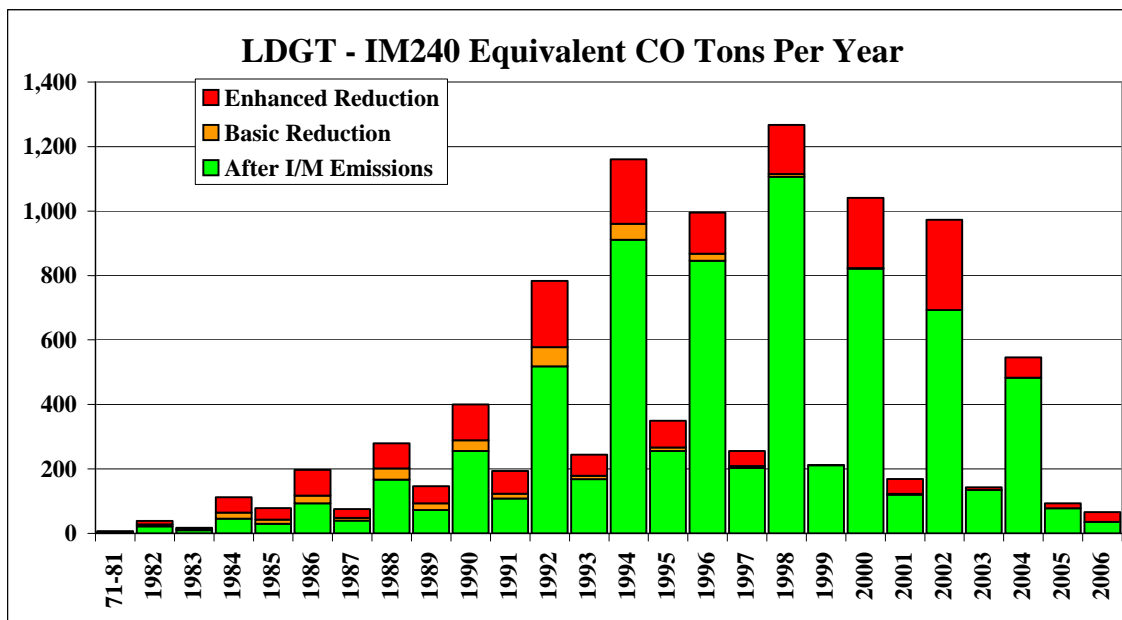


Figure VI-6 LDGV NOx Reductions

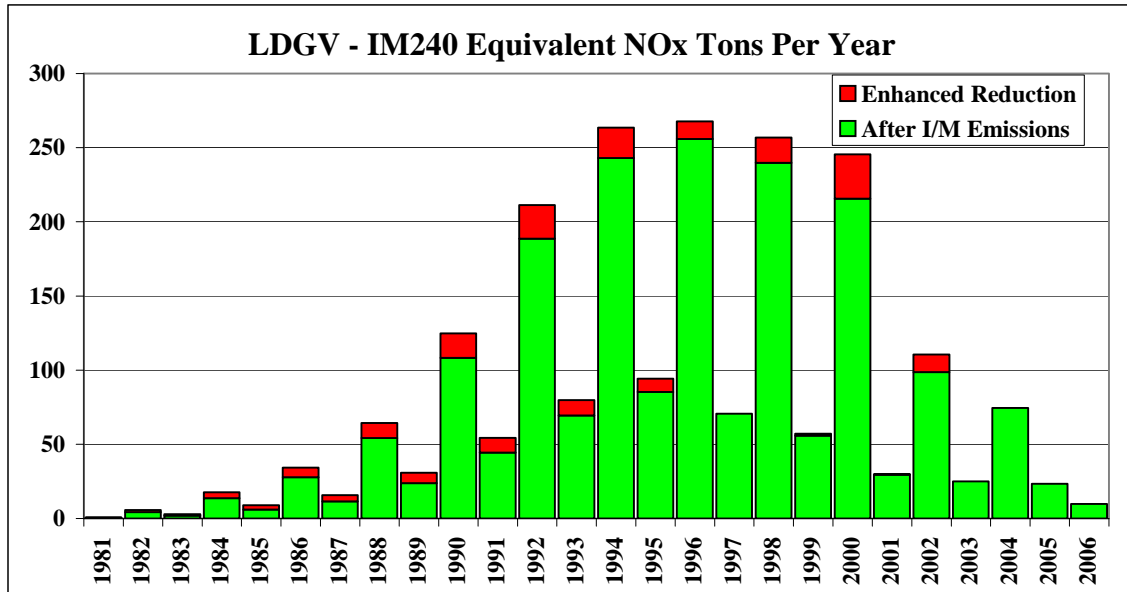
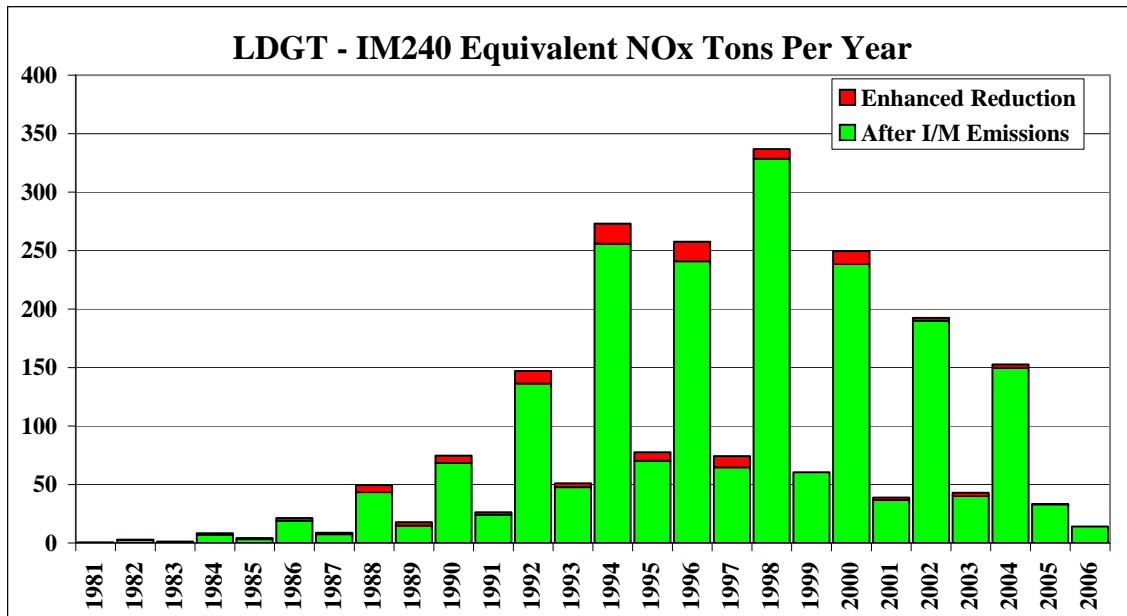


Figure VI-7 LDGT NOx Reductions



VII. Program Modifications and Additional Evaluation

A. *Suggestions for Program Modifications*

1. *Additional Emissions Data for Vehicles Inspected Using OBD I/M Test*

In June 2005, vehicles started being passed and failed using only the OBD I/M test procedure. For this report, their emissions have been estimated using on-road RSD measurements. The RSD measurements have been converted to IM240 equivalent g/mi values using a correlation of the RSD data and IM240 data acquired in 2002 – the last year in which IM240 tests were performed on all models. It would have been preferable to use a correlation of 2005 RSD measurements to a random sample of IM240 tests on OBD-II vehicles.

The random sample of IM240 test results could have been used directly to establish more accurately the average emissions of 1996 & newer models for inventory purposes.

A second issue relating to OBD-II vehicles is the likelihood that owners will obtain repairs when prompted by the Engine Check Light. Thus, the ‘Step’ method of comparing emissions before and after inspection used to assess emission reductions in this report, and in previous reports, is no longer likely to be measuring a majority of the emissions reductions stemming from vehicle maintenance and repairs. A survey of owners would help identify the fraction of repairs performed during the year outside of the I/M inspection and repair cycle.

Other approaches to assessing OBD-II vehicle emissions and reductions were discussed in the Annual Report for 2004: These included obtaining and comparing remote sensing measurements from a non-I/M city to determine I/M effectiveness, e.g. Kansas City. This is known as the ‘reference’ method of I/M evaluation. EPA conducted some testing in 2004 and 2005 in Kansas City. For a true comparison, however, a more substantial, ongoing sampling of Kansas City vehicles using the same RSD equipment used in St. Louis would provide better data for comparison.

2. *Apply a Humidity Correction Factor and investigate applying a VSP Adjustment to Remote Sensing NOx Measurements*

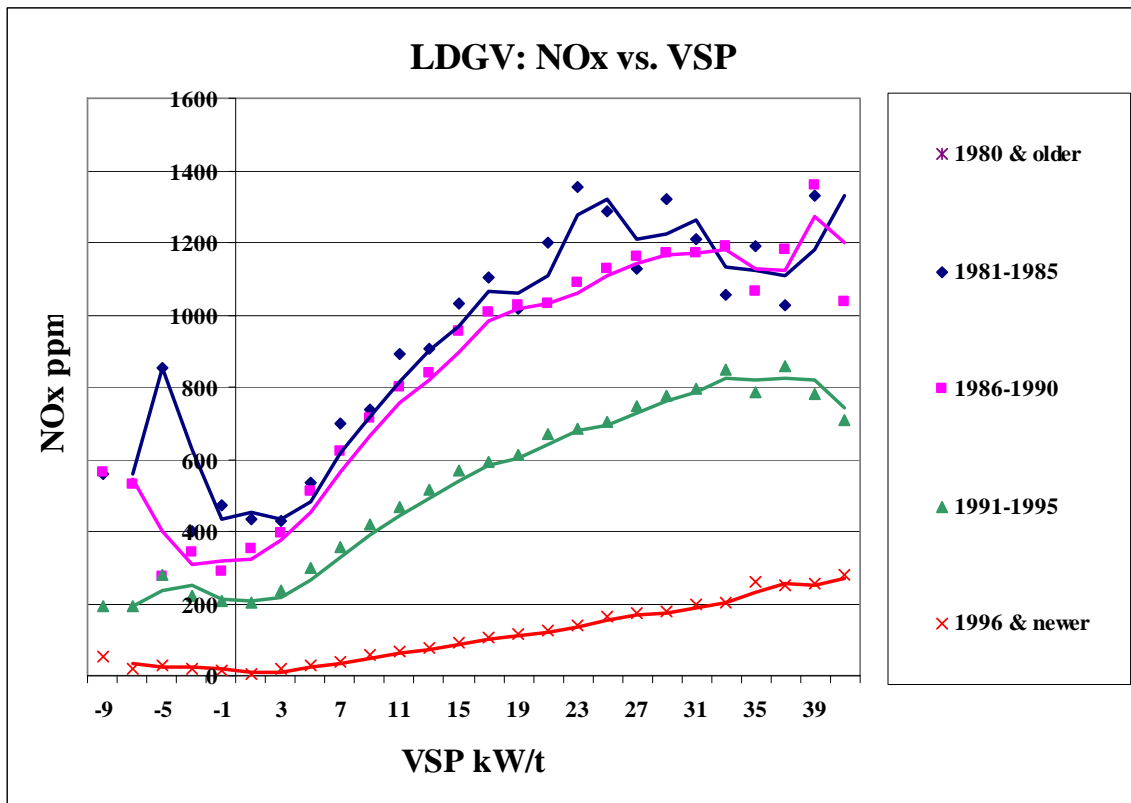
An analysis of Missouri data has shown that vehicle NO emissions measured by RSD vary in a manner that is consistent with the NOx humidity correction factor applied to IM240 measurements. The use of corrected NO emissions for determining clean vehicles for the RapidScreen program would have negligible impact (<0.5% of the vehicles that passed would have failed using the corrected NO values and about 1% would have passed that had failed). It appears sensible to apply the correction factor when comparing vehicles to NO emissions standards; however, using the corrected NO values in comparing the RSD data with the IM240 data also had negligible impact.

On-road NOx emission concentrations (like the HC and CO) depend nearly linearly on the engine power of the vehicle at the time it is measured over the moderate power range,

especially for the newer model year vehicles. At higher power, the fuel/air mixture is enriched and the NOx concentration may flatten or decline. This is illustrated in Figure VII-1, which shows results from a recent Virginia study¹⁰. Vehicles that are measured by remote sensing at low power levels could meet the RapidScreen standards for NOx but not be very clean at typical IM240 power levels. Normally, however, the differences between normal emitters and high emitters are greater than the variation with VSP.

Adjusting the NOx value for VSP could improve RapidScreen effectiveness but requires further investigation.

Figure VII-1 NOx vs. VSP



B. Suggestions for Additional Evaluation

1. Model Year Comparison with Mobile6

The remote sensing and in-program emissions measurements provide real world data for comparing to the EPA Mobile model that is used to pollution control strategies. A comparison by model year for vehicles and trucks of the predicted and actual emissions contributions and the I/M reductions will reveal how the actual program effectiveness compares to the model prediction. The results of the comparison could suggest

modifications to the program design or to the Mobile model. It would also facilitate a more accurate assessment of the RapidScreen program for OBD vehicles.

2. *Evaluation of High Emitter Identification*

It is clear from the emissions deciles of vehicles measured on-road (See section V. B.) that excess emissions remain among a percentage of older vehicles. These results indicate that the emissions control systems on some vehicles fail between biennial inspections. If these high emitting vehicles were required to come in for an emission inspection between test cycles, the effectiveness of the Gateway Clean Air Program could be improved.

A simulation of the effectiveness of high emitter identification could be undertaken to evaluate alternative identification protocols and the impact of off-cycle emission inspections on program effectiveness.

3. *Evaluation of Evaporative Emissions Index*

The existing low emitter index does not incorporate any estimates of evaporative emissions. It may be worth investigating whether there are any sufficiently high gas cap failure rates for specific make/models, i.e. pattern failures that would make it worth disallowing these make/models from being RapidScreened.

4. *Evaluation of Liquid Leak Identification*

Liquid leakers are described in the Mobile6 design document EVP-009ⁱ. EPA notes that “*for a small number of vehicles, the primary mechanism of evaporative emissions was the substantial leakage of liquid gasoline (as opposed to simply vapor leaks).*” Although few in number, liquid leakers account for at least one quarter of the total light vehicle HC emissions according to the Mobile6 model.

Although vehicles are not specifically checked for leaks, the I/M program is almost certainly reducing the number of leaking vehicles. Owners of vehicles with gross leaks are likely to smell gasoline and may obtain a repair before bring a vehicle for emissions inspection. Vehicles with obvious leaks are rejected from inspection at stations for safety. In addition, a Colorado study has reported some vehicles with leaks failing IM240 tests as HC polluted air is drawn into the analyzer system along with the exhaust. RSD may also identify vehicles trailing an HC plume as a result of liquid leaks as high emitters.

We recommend evaluating test procedures at the inspection stations to detect liquid leaks from older vehicles. A pilot study using sniffer devices and, possibly, the analysis of second-by-second IM240 measurements in the inspection lanes could identify vehicles with HC leaks at the stations. Their RSD measurements could also be reviewed to determine whether high HC emissions were measured on-road.

ⁱ EPA EPA420-R-01-024, “Evaporative Emissions of Gross Liquid Leakers in MOBILE6, EVP-009”, April 2001

Appendix A – RapidScreen Coverage

- **A1 – RapidScreen Sites**
- **A2 – RapidScreen Coverage by ZIP Code**
- **A3 – RapidScreen Coverage by Year, Make and Model**

Appendix A Notes

Appendix A1

Although the site references number as high as 165, fewer sites were used. Some candidate sites submitted to the MODOT were rejected and use of some sites has been discontinued due to safety or productivity issues or have been temporarily made inactive due to construction at or near the sites.

Appendix A2

Use of the LEI method was terminated in November 2000.

Appendix A3

Use of the LEI method was terminated in November 2000.

Appendix A1 – RapidScreen Sites Used

Site	Type	Description	Township	ZipCode	Slope	Avg. Speed, mph	Avg. Accel, mphps	Avg. VSP, kw/t
3	Freeway	Brentwood Rd. onto I - 64 W.	Richmond	63117	2.3	27.55	1.10	14.69
5	Freeway	Jefferson Ave. onto I-44 W.	St. Louis	63104	2.1	27.36	2.04	19.87
12	Freeway	Carondelet Blvd. onto I - 55 S.	Wilbur Park	63123	2.9	26.02	2.13	20.95
13	Freeway	Reavis Barracks Rd. onto I - 55 S.	Unincorporated	63123	3.4	28.77	1.64	21.25
28	Freeway	Ladue Rd. onto I - 270 S.	Creve Coeur	63141	0.1	28.52	2.61	19.93
29	Freeway	Dorsett Rd. onto I - 270 S.	Maryland Heights	63043	1.8	29.37	2.05	20.77
32	Freeway	Rte. 67 S. onto I - 70 W.	Bridgeton	63044	1.8	28.50	1.68	17.82
34	Freeway	Lucas - Hunt S. onto I - 70 E.	Northwoods	63121	-1.6	28.72	2.72	17.04
37	Freeway	Lindbergh/Kirkwood St. onto I - 44 W.	Kirkwood	63122	2.8	30.07	1.79	21.92
42	Freeway	Page Rd. onto I-170 N.	Vinita Park	63114	2.7	27.92	1.51	18.30
43	Freeway	St. Charles Rock onto I-170 S.	St. John	63114	1.9	33.06	1.53	20.08
45	Freeway	Main St. (K& M) onto I-70 E.	O'Fallon	63366	1.3	28.55	2.24	20.27
47	Freeway	Cave Springs Rd. onto I-70 E.	St. Peters	63376	-1.8	28.89	2.92	17.95
68	Freeway	Earth City Expressway onto Rte. 370 E.	Bridgeton	63044	-1.0	37.82	1.55	15.09
70	Freeway	Gray Summit Rd. on to I-44 E.	Gray Summit	63069	-2.7	26.47	3.39	17.31
76	Freeway	New Florissant Rd. on to I-270 E.	Calverton Park	63135	2.3	31.69	1.45	19.58
87	Freeway	Meramac Bottom Rd. onto I - 55 N.	Unincorporated	63129	-0.7	27.77	3.28	21.77
93	Freeway	Airflight Dr. onto I - 70 W	Edmunson	63134	2.3	32.73	1.31	19.26
95	Freeway	Rte. 141 onto 40 W.	Town & Country	63017	2.2	28.26	1.70	18.61
96	Freeway	Airport Road onto I-170 S.	Berkeley	63134	0.9	28.13	2.25	19.17
100	Freeway	Zumbehl Rd. onto I-70 W.	St. Charles	63301	-1.4	30.12	2.78	18.83
101	Freeway	Bryan Road onto I-70 E.	O' Fallon	63366	-1.3	28.89	3.02	19.70
102	Freeway	Lake St. Louis Blvd. onto I-70 E.	Lake St. Louis	63367	-1.9	29.13	2.89	17.76
104	Freeway	Bayless onto I-55 S.	Affton	63123	1.2	27.81	2.08	18.55
105	Freeway	Page Ave. onto I-170 S.	Overland	63114	2.5	24.78	1.84	17.53
107	Freeway	Hwy. 141 onto I-44 W.	Valley Park	63088	1.3	28.67	2.03	19.02
108	Freeway	Natural Bridge onto I-170 S.	Bel-Ridge	63121	1.7	28.91	1.64	17.61
112	Freeway	Reavis Barracks Rd. onto I-55 N.	Unincorporated	63125	2.8	26.93	1.82	19.66
114	Freeway	Hampton Avenue onto I-44 W.	St. Louis	63110	2.5	27.15	2.01	20.33
115	Freeway	Elm onto I-44 W.	Webster Groves	63119	0.5	27.26	2.20	17.38
116	Freeway	Rte. 100 EB from Washington onto I-44	Unincorporated	63089	-1.9	32.31	2.19	14.87
118	Freeway	Lilac onto I-270 W.	Bellefontaine	63137	-1.4	27.82	2.76	17.14
120	Freeway	Old Halls Ferry onto I-270 E.	Blackjack	63136	-1.0	30.91	2.44	17.94
127	Freeway	5th Street NB onto I-70 E	St. Charles	63303	0.1	32.89	1.32	13.87
139	Freeway	Hampton Avenue onto I-44 E.	St. Louis	63139	2.3	29.16	1.74	19.76
143	Freeway	Mason Road onto I-64 E.	Town & Country	63141	-3.0	29.69	2.81	15.10
144	Freeway	Clarkson /Olive onto I-64 West	Chesterfield	63017	1.4	29.71	2.17	20.93
157	Highway	Old Highway 21 onto New Highway 21	House Springs	63051	-2.6	31.14	2.35	13.69
163	Freeway	Imperial Main St. onto I-55 S.	Imperial	63052	-1.2	28.56	2.78	18.20
164	Freeway	Imperial Main St. onto I-55 N.	Imperial	63052	-1.5	30.30	2.79	18.77
169	Freeway	Cave Springs Rd. onto I-70 W.	St. Peters	63376	-1.5	29.81	2.55	16.86
170	Freeway	Hwy K & M onto I-70 W.	O' Fallon	63366	2.5	28.10	2.16	22.00
173	Freeway	Lindbergh/Kirkwood St. onto I - 44 E.	Kirkwood	63122	0.1	30.34	2.28	19.11
177	Freeway	Hwy 94 (First Capitol Drive) onto I-64	Weldon Spring	63304	-0.1	33.28	2.35	21.13
179	Freeway	Wentzville Parkway onto I-70E	Wentzville	63385	-2.4	30.51	2.82	17.00
180	Freeway	Olive Blvd. EB onto I-170 S	Olivette	63132	2.0	28.68	1.78	18.97
181	Freeway	Olive Blvd.WB onto I-170 S	Olivette	63132	2.0	27.04	1.05	13.52

Appendix A2 - RapidScreen Redemption by ZIP Code

Zip Code	Description	RSD	Hybrid	Total RS	Station Tests	Total Tests	%RS
63001	Allenton	2	2	4	11	15	27%
63005	Chesterfield	1,119	714	1,833	6,386	8,219	22%
63006	Chesterfield	39	14	53	86	139	38%
63010	Arnold	1,760	1,056	2,816	10,447	13,263	21%
63011	Ellisville	1,776	1,306	3,082	11,524	14,606	21%
63012	Barnhart	1,121	290	1,411	2,591	4,002	35%
63013	Beaufort	12	6	18	677	695	3%
63014	Berger	5	4	9	248	257	4%
63015	Catawissa	69	27	96	692	788	12%
63016	Cedar Hill	223	177	400	2,608	3,008	13%
63017	Chesterfield	2,929	1,632	4,561	8,657	13,218	35%
63019	Crystal City	97	91	188	1,405	1,593	12%
63020	De Soto	433	387	820	6,550	7,370	11%
63021	Ellisville	2,820	1,900	4,720	13,654	18,374	26%
63022	Ballwin	4	5	9	39	48	19%
63023	Dittmer	117	98	215	1,720	1,935	11%
63025	Eureka	824	439	1,263	3,283	4,546	28%
63026	Fenton	2,517	1,499	4,016	12,227	16,243	25%
63028	Festus	597	494	1,091	8,164	9,255	12%
63030	Fletcher	3	0	3	41	44	7%
63031	Florissant	1,379	1,102	2,481	15,919	18,400	13%
63032	Florissant	15	4	19	79	98	19%
63033	Florissant	1,890	1,031	2,921	10,914	13,835	21%
63034	Florissant	627	517	1,144	4,950	6,094	19%
63037	Gerald	18	18	36	1,120	1,156	3%
63038	Glencoe	272	266	538	1,834	2,372	23%
63039	Gray Summit	23	21	44	311	355	12%
63040	Grover	290	270	560	1,923	2,483	23%
63041	Grubville	3	8	11	184	195	6%
63042	Hazelwood	567	390	957	5,856	6,813	14%
63043	Maryland Heights	2,117	667	2,784	5,765	8,549	33%
63044	Bridgeton	521	292	813	3,060	3,873	21%
63045	Earth City	65	19	84	3,824	3,908	2%
63047	Hematite	2	5	7	51	58	12%
63048	Herculaneum	105	57	162	844	1,006	16%
63049	High Ridge	647	396	1,043	4,914	5,957	18%
63050	Hillsboro	721	426	1,147	4,624	5,771	20%
63051	House Springs	430	308	738	4,331	5,069	15%
63052	Imperial	2,322	621	2,943	6,425	9,368	31%
63053	Kimmswick	11	2	13	27	40	33%
63055	Labadie	65	52	117	775	892	13%
63056	Leslie	13	11	24	704	728	3%
63057	Liguori	7	1	8	10	18	44%
63060	Lonedell	18	25	43	852	895	5%
63061	Luebbering	3	2	5	89	94	5%
63065	Mapaville	1	4	5	44	49	10%
63066	Morse Mill	4	0	4	53	57	7%

Appendix A2 - RapidScreen Redemption by ZIP Code

Zip Code	Description	RSD	Hybrid	Total RS	Station Tests	Total Tests	%RS
63068	New Haven	29	46	75	1,812	1,887	4%
63069	Pacific	413	299	712	4,290	5,002	14%
63070	Pevely	212	117	329	1,910	2,239	15%
63072	Robertsville	50	50	100	1,258	1,358	7%
63073	Saint Albans	1	1	2	0	2	100%
63074	Saint Ann	415	236	651	4,798	5,449	12%
63077	Saint Clair	92	61	153	4,136	4,289	4%
63080	Sullivan	61	60	121	3,160	3,281	4%
63084	Union	168	156	324	5,643	5,967	5%
63088	Valley Park	461	219	680	2,061	2,741	25%
63089	Villa Ridge	145	99	244	2,066	2,310	11%
63090	Washington	240	243	483	7,579	8,062	6%
63101	Saint Louis	88	35	123	494	617	20%
63102	Saint Louis	67	14	81	226	307	26%
63103	Saint Louis	203	40	243	818	1,061	23%
63104	Saint Louis	848	235	1,083	3,221	4,304	25%
63105	Clayton	551	373	924	3,361	4,285	22%
63106	Saint Louis	97	54	151	1,331	1,482	10%
63107	Saint Louis	125	82	207	1,936	2,143	10%
63108	Saint Louis	379	220	599	3,177	3,776	16%
63109	Saint Louis	1,670	750	2,420	6,246	8,666	28%
63110	Saint Louis	893	266	1,159	3,387	4,546	25%
63111	Saint Louis	540	253	793	3,991	4,784	17%
63112	Saint Louis	299	160	459	3,466	3,925	12%
63113	Saint Louis	132	96	228	2,190	2,418	9%
63114	Overland	1,780	731	2,511	10,145	12,656	20%
63115	Saint Louis	255	157	412	3,928	4,340	9%
63116	Saint Louis	1,355	729	2,084	10,480	12,564	17%
63117	Richmond Heights	386	226	612	2,506	3,118	20%
63118	Saint Louis	632	199	831	4,299	5,130	16%
63119	Webster Groves	2,331	1,071	3,402	7,996	11,398	30%
63120	Saint Louis	150	75	225	1,825	2,050	11%
63121	Normandy	1,068	453	1,521	6,243	7,764	20%
63122	Kirkwood	1,975	1,229	3,204	9,946	13,150	24%
63123	Afton	3,509	1,513	5,022	12,566	17,588	29%
63124	Ladue	993	605	1,598	3,493	5,091	31%
63125	Lemay	1,836	855	2,691	7,839	10,530	26%
63126	Sappington	976	558	1,534	4,106	5,640	27%
63127	Sappington	566	188	754	1,115	1,869	40%
63128	Sappington	1,750	1,093	2,843	7,684	10,527	27%
63129	Arnold/Oakville	2,902	1,837	4,739	13,679	18,418	26%
63130	University City	1,173	555	1,728	7,173	8,901	19%
63131	Des Peres	999	678	1,677	4,593	6,270	27%
63132	Olivette	964	336	1,300	3,487	4,787	27%
63133	Pagedale/Wellston	483	208	691	19,415	20,106	3%
63134	Berkeley	716	229	945	3,278	4,223	22%
63135	Ferguson	1,226	478	1,704	5,227	6,931	25%

Appendix A2 - RapidScreen Redemption by ZIP Code

Zip Code	Description	RSD	Hybrid	Total RS	Station Tests	Total Tests	%RS
63136	Jennings	1,941	763	2,704	10,344	13,048	21%
63137	Bellefontaine Neighbors	1,443	345	1,788	4,116	5,904	30%
63138	North St. Louis County	1,123	381	1,504	4,153	5,657	27%
63139	Saint Louis	1,572	526	2,098	5,105	7,203	29%
63140	Kinloch	9	5	14	91	105	13%
63141	Creve Coeur	1,846	671	2,517	4,660	7,177	35%
63143	Maplewood	502	191	693	2,756	3,449	20%
63144	Brentwood	670	265	935	2,293	3,228	29%
63145	Lambert Airport	6	2	8	27	35	23%
63146	Maryland Heights	1,736	926	2,662	6,825	9,487	28%
63147	Baden	293	137	430	2,428	2,858	15%
63178	Saint Louis	0	1	1	0	1	100%
63301	Saint Charles	1,900	1,238	3,138	15,914	19,052	16%
63302	Saint Charles	32	11	43	100	143	30%
63303	Saint Charles	2,240	1,352	3,592	10,612	14,204	25%
63304	Saint Charles	1,709	1,249	2,958	10,093	13,051	23%
63332	Augusta	36	21	57	462	519	11%
63338	Cottleville	10	1	11	37	48	23%
63341	Defiance	203	151	354	1,098	1,452	24%
63346	Flinthill	4	2	6	16	22	27%
63348	Foristell	181	135	316	1,108	1,424	22%
63365	New Melle	17	18	35	80	115	30%
63366	O Fallon	6,347	2,437	8,784	14,200	22,984	38%
63367	Lake Saint Louis	1,164	544	1,708	3,722	5,430	31%
63368	O Fallon	137	69	206	4,578	4,784	4%
63373	Portage des Sioux	14	17	31	224	255	12%
63376	Saint Peters	3,403	2,078	5,481	20,281	25,762	21%
63385	Wentzville	1,626	787	2,413	7,050	9,463	25%
63386	West Alton	13	7	20	163	183	11%
Total		94,984	49,154	144,138	526,608	670,746	21%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2005	ACUR	MDP	4	0	33	12%
2005	ACUR	MDXMDX	1	0	2	50%
2005	ACUR	OTHER	16	6	117	19%
2005	AUDI	A4	1	0	31	3%
2005	AUDI	A6	1	0	7	14%
2005	AUDI	A8	1	0	8	13%
2005	BMW	325I	1	0	19	5%
2005	BMW	525I	2	0	10	20%
2005	BMW	530I	4	0	11	36%
2005	BMW	OTHER	2	0	35	6%
2005	BMW	X5	3	0	20	15%
2005	BUIC	CENTURY	1	1	49	4%
2005	BUIC	LESABRE	9	4	180	7%
2005	BUIC	OTHER	7	3	132	8%
2005	BUIC	RENDEZOUS	1	3	131	3%
2005	CADI	CTS	3	5	59	14%
2005	CADI	DEVILLE	1	7	97	8%
2005	CADI	ESCALADE	2	1	58	5%
2005	CADI	OTHER	2	1	63	5%
2005	CHEV	ASTRO VAN	3	0	23	13%
2005	CHEV	BLAZER	11	6	401	4%
2005	CHEV	C1500	1	0	14	7%
2005	CHEV	C2500	2	0	3	67%
2005	CHEV	CAVALIER	7	4	529	2%
2005	CHEV	CORVETTE	2	0	43	5%
2005	CHEV	EXPRESS	2	0	14	14%
2005	CHEV	IMPALA	21	7	726	4%
2005	CHEV	K1500	5	5	113	9%
2005	CHEV	MALIBU	8	23	1570	2%
2005	CHEV	MONTE CARLO	4	2	212	3%
2005	CHEV	OTHER	32	12	745	6%
2005	CHEV	SILVERADO	18	6	244	10%
2005	CHEV	SUBURBAN	4	1	57	9%
2005	CHEV	VENTURE	0	1	29	3%
2005	CHRY	300M	13	7	155	13%
2005	CHRY	CHRYSLER 300	0	1	42	2%
2005	CHRY	OTHER	10	7	262	6%
2005	CHRY	PT CRUISER	4	1	181	3%
2005	CHRY	SEBRING	1	1	411	0%
2005	CHRY	TOWN & COUNTRY	11	24	321	11%
2005	DODG	CARAVAN	33	30	655	10%
2005	DODG	DAKOTA	9	4	100	13%
2005	DODG	DURANGO	5	2	146	5%
2005	DODG	NEON	3	6	337	3%
2005	DODG	RAM 1500	10	6	172	9%
2005	DODG	STRATUS	4	1	377	1%
2005	FORD	CROWN VICTORIA	0	1	32	3%
2005	FORD	ECONOLINE	5	0	36	14%
2005	FORD	ESCAPE	10	15	384	7%
2005	FORD	EXCURSION	1	0	1	100%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2005	FORD	EXPEDITION	3	1	99	4%
2005	FORD	EXPLORER	11	4	375	4%
2005	FORD	F150	17	7	277	9%
2005	FORD	FOCUS	12	8	470	4%
2005	FORD	MUSTANG	3	0	212	1%
2005	FORD	OTHER	17	8	379	7%
2005	FORD	RANGER	4	0	64	6%
2005	FORD	TAURUS	7	8	714	2%
2005	GMC	DENALI	5	0	50	10%
2005	GMC	ENVOY	4	5	95	9%
2005	GMC	SAVANA	1	0	6	17%
2005	GMC	SIERRA	7	0	87	8%
2005	GMC	YUKON	5	4	59	15%
2005	HOND	ACCORD	25	5	184	16%
2005	HOND	CIVIC	13	0	158	8%
2005	HOND	CR-V	4	0	43	9%
2005	HOND	ODYSSEY	17	0	67	25%
2005	HOND	OTHER	3	0	11	27%
2005	HOND	PILOT	14	0	66	21%
2005	HYUN	ACCENT	1	0	45	2%
2005	HYUN	ELANTRA	5	3	149	5%
2005	HYUN	OTHER	0	1	19	5%
2005	HYUN	SANTA FE	3	2	76	7%
2005	HYUN	SONATA	4	3	166	4%
2005	HYUN	XG350	1	0	19	5%
2005	INFI	G35	2	2	58	7%
2005	INFI	OTHER	3	0	32	9%
2005	JEEP	CHEROKEE	5	0	97	5%
2005	JEEP	GRAND CHEROKEE	5	3	274	3%
2005	JEEP	LIBERTY	4	6	187	5%
2005	JEEP	WRANGLER	0	3	74	4%
2005	KIA	OPTIMA	1	1	92	2%
2005	KIA	OTHER	2	2	174	2%
2005	KIA	SEDONA	4	2	124	5%
2005	KIA	SPECTRA	1	1	62	3%
2005	KIA	SPORTAGE	1	0	6	17%
2005	LEXS	GX 470	1	0	18	6%
2005	LEXS	LS 430	2	0	12	17%
2005	LEXS	LX 470	1	0	14	7%
2005	LEXS	OTHER	15	13	144	19%
2005	LEXS	SC 430	1	0	13	8%
2005	LINC	LS	2	1	51	6%
2005	LINC	NAVIGATOR	1	2	21	14%
2005	LINC	TOWN CAR	2	0	93	2%
2005	LNDR	OTHER	1	0	22	5%
2005	MAZD	OTHER	13	3	343	5%
2005	MAZD	TRIBUTE	6	4	66	15%
2005	MERC	GRAND MARQUIS	5	2	117	6%
2005	MERC	MONTEGO	6	0	28	21%
2005	MERC	MOUNTAINEER	2	1	47	6%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2005	MERC	OTHER	3	0	38	8%
2005	MERC	SABLE	1	3	107	4%
2005	MERZ	320	1	0	11	9%
2005	MERZ	CLK320	2	0	15	13%
2005	MERZ	OTHER	2	0	89	2%
2005	MITS	GALANT	0	1	79	1%
2005	MITS	LANCER	1	1	41	5%
2005	MITS	OTHER	1	0	42	2%
2005	NISS	ALTIMA	15	5	276	7%
2005	NISS	MAXIMA	6	2	90	9%
2005	NISS	OTHER	6	1	116	6%
2005	NISS	PATHFINDER	5	2	49	14%
2005	NISS	QUEST	2	0	28	7%
2005	NISS	SENTRA	2	0	106	2%
2005	NISS	XTERRA	3	0	17	18%
2005	OTHER	OTHER	6	1	52	13%
2005	PONT	AZTEK	1	0	15	7%
2005	PONT	BONNEVILLE	1	1	88	2%
2005	PONT	GRAND AM	2	3	692	1%
2005	PONT	GRAND PRIX	7	3	471	2%
2005	PONT	MONTANA	1	1	40	5%
2005	PONT	OTHER	4	2	121	5%
2005	PONT	SUNFIRE	1	1	216	1%
2005	PONT	VIBE	4	3	145	5%
2005	PORS	911	1	0	7	14%
2005	SAA	OTHER	1	0	19	5%
2005	STRN	OTHER	3	0	14	21%
2005	STRN	SI2	2	0	39	5%
2005	STRN	SI3	1	0	12	8%
2005	STRN	VUE	7	0	40	18%
2005	SUBA	FORESTER	2	0	13	15%
2005	SUBA	LEGACY	1	1	30	7%
2005	SUBA	OTHER	2	1	43	7%
2005	SUZI	OTHER	1	0	82	1%
2005	TOYT	4RUNNER	4	2	75	8%
2005	TOYT	AVALON	1	3	39	10%
2005	TOYT	CAMRY	27	24	432	12%
2005	TOYT	COROLLA	7	10	337	5%
2005	TOYT	HIGHLANDER	3	5	118	7%
2005	TOYT	OTHER	10	2	108	11%
2005	TOYT	PRIUS	4	5	40	23%
2005	TOYT	RAV4	1	1	33	6%
2005	TOYT	SEQUOIA	2	2	22	18%
2005	TOYT	SIENNA	8	6	116	12%
2005	TOYT	TACOMA	3	0	27	11%
2005	TOYT	TERCEL	2	3	58	9%
2005	TOYT	TUNDRA	3	0	24	13%
2005	VOLK	BEETLE	1	0	21	5%
2005	VOLK	JETTA	1	0	57	2%
2005	VOLK	PASSAT	2	1	46	7%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2005	VOLV	OTHER	6	2	46	17%
2005	VOLV	S40	3	1	38	11%
2005	VOLV	S60	0	1	33	3%
2005	VOLV	S80	2	0	20	10%
2004			267	1	284	94%
2004	ACUR	3.5RL	15	3	66	27%
2004	ACUR	MDP	126	44	407	42%
2004	ACUR	MDXMDX	22	8	88	34%
2004	ACUR	OTHER	254	158	965	43%
2004	ACUR	RSX	26	12	135	28%
2004	AUDI	A4	30	23	205	26%
2004	AUDI	A6	17	4	79	27%
2004	AUDI	A8	12	2	38	37%
2004	AUDI	ALLROAD	3	0	15	20%
2004	AUDI	OTHER	13	0	51	25%
2004	AUDI	S4	6	0	21	29%
2004	AUDI	TT	5	0	41	12%
2004	BMW	325I	61	31	284	32%
2004	BMW	325XI	17	11	91	31%
2004	BMW	325XIT	3	0	9	33%
2004	BMW	330CI	13	17	102	29%
2004	BMW	330I	5	3	29	28%
2004	BMW	330XI	12	2	52	27%
2004	BMW	525I	23	10	78	42%
2004	BMW	530I	30	22	134	39%
2004	BMW	745I	10	0	34	29%
2004	BMW	745LI	14	0	46	30%
2004	BMW	M3	8	0	46	17%
2004	BMW	OTHER	70	40	355	31%
2004	BMW	X5	47	31	187	42%
2004	BUIC	CENTURY	71	56	339	37%
2004	BUIC	LESABRE	168	137	870	35%
2004	BUIC	OTHER	39	9	170	28%
2004	BUIC	PARK AVENUE	15	11	81	32%
2004	BUIC	REGAL	26	23	139	35%
2004	BUIC	RENDEZOUS	68	65	483	28%
2004	CADI	CMRCL CHASSIS	2	0	4	50%
2004	CADI	CTS	113	95	532	39%
2004	CADI	DEVILLE	78	57	448	30%
2004	CADI	ESCALADE	93	50	424	34%
2004	CADI	OTHER	62	6	278	24%
2004	CADI	PROF CHASSIS	3	0	5	60%
2004	CADI	SEVILLE	8	2	34	29%
2004	CHEV	ASTRO VAN	55	14	159	43%
2004	CHEV	AVALANCHE	120	61	459	39%
2004	CHEV	BLAZER	547	331	2439	36%
2004	CHEV	C1500	18	7	80	31%
2004	CHEV	C2500	17	0	17	100%
2004	CHEV	CAVALIER	516	282	2671	30%
2004	CHEV	CORVETTE	20	26	227	20%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2004	CHEV	EXPRESS	44	6	114	44%
2004	CHEV	IMPALA	582	360	2633	36%
2004	CHEV	K1500	209	122	812	41%
2004	CHEV	MALIBU	435	243	2089	32%
2004	CHEV	MONTE CARLO	142	79	687	32%
2004	CHEV	OTHER	196	130	1108	29%
2004	CHEV	S10	20	6	99	26%
2004	CHEV	SILVERADO	634	287	2441	38%
2004	CHEV	SUBURBAN	179	104	721	39%
2004	CHEV	TRACKER	17	11	140	20%
2004	CHEV	VENTURE	136	65	572	35%
2004	CHRY	300M	47	29	252	30%
2004	CHRY	CONCORDE	26	13	175	22%
2004	CHRY	OTHER	199	110	837	37%
2004	CHRY	PT CRUISER	117	63	553	33%
2004	CHRY	SEBRING	281	150	1397	31%
2004	CHRY	TOWN & COUNTRY	126	40	445	37%
2004	DODG	CARAVAN	233	130	888	41%
2004	DODG	DAKOTA	200	107	1023	30%
2004	DODG	DURANGO	195	126	939	34%
2004	DODG	INTREPID	105	76	564	32%
2004	DODG	NEON	154	112	1046	25%
2004	DODG	OTHER	1	0	8	13%
2004	DODG	RAM 1500	434	235	1977	34%
2004	DODG	RAM 2500	14	0	15	93%
2004	DODG	STRATUS	310	157	1419	33%
2004	DODG	VIPER	1	0	11	9%
2004	FORD	CROWN VICTORIA	30	15	228	20%
2004	FORD	ECONOLINE	87	13	198	51%
2004	FORD	ESCAPE	323	192	1357	38%
2004	FORD	EXPEDITION	216	119	865	39%
2004	FORD	EXPLORER	568	322	2247	40%
2004	FORD	F150	945	449	3705	38%
2004	FORD	F250	2	0	2	100%
2004	FORD	FOCUS	140	58	653	30%
2004	FORD	MUSTANG	110	111	846	26%
2004	FORD	OTHER	204	92	750	39%
2004	FORD	RANGER	196	77	879	31%
2004	FORD	TAURUS	380	244	1995	31%
2004	FORD	THUNDERBIRD	8	8	61	26%
2004	GMC	DENALI	132	86	500	44%
2004	GMC	ENVOY	300	166	1186	39%
2004	GMC	OTHER	33	4	144	26%
2004	GMC	SAFARI	11	7	51	35%
2004	GMC	SAVANA	30	9	192	20%
2004	GMC	SIERRA	170	50	688	32%
2004	GMC	SONOMA	4	0	30	13%
2004	GMC	YUKON	176	82	675	38%
2004	HOND	ACCORD	501	256	2127	36%
2004	HOND	CIVIC	275	90	1307	28%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2004	HOND	CR-V	198	128	890	37%
2004	HOND	ODYSSEY	365	159	1170	45%
2004	HOND	OTHER	63	29	271	34%
2004	HOND	PILOT	246	110	849	42%
2004	HOND	S2000	3	2	41	12%
2004	HYUN	ACCENT	24	23	213	22%
2004	HYUN	ELANTRA	113	83	681	29%
2004	HYUN	SANTA FE	289	176	1098	42%
2004	HYUN	SONATA	197	159	942	38%
2004	HYUN	TIBURON	19	4	97	24%
2004	HYUN	TIBURON GT	19	13	110	29%
2004	HYUN	XG350	53	34	248	35%
2004	INFI	G35	178	116	807	36%
2004	INFI	I35	58	37	222	43%
2004	INFI	OTHER	72	17	296	30%
2004	INFI	Q45	3	0	4	75%
2004	ISU	AXIOM	2	0	10	20%
2004	ISU	OTHER	6	0	31	19%
2004	ISU	RODEO	11	1	69	17%
2004	JAGU	VDP	3	0	16	19%
2004	JAGU	XJ8	11	4	57	26%
2004	JAGU	XJS	13	2	57	26%
2004	JAGU	XK8	2	0	5	40%
2004	JAGU	X-TYPE	28	12	148	27%
2004	JEEP	CHEROKEE	531	333	2294	38%
2004	JEEP	GRAND CHEROKEE	45	19	195	33%
2004	JEEP	LIBERTY	315	212	1754	30%
2004	JEEP	WRANGLER	63	48	661	17%
2004	KIA	OPTIMA	84	38	403	30%
2004	KIA	OTHER	82	50	386	34%
2004	KIA	RIO	19	14	152	22%
2004	KIA	SEDONA	104	61	427	39%
2004	KIA	SEPHIA	8	2	50	20%
2004	KIA	SPECTRA	26	0	123	21%
2004	LEXS	GS 300	13	3	41	39%
2004	LEXS	GS 430	3	0	10	30%
2004	LEXS	GX 470	69	35	246	42%
2004	LEXS	IS 300	6	2	35	23%
2004	LEXS	LS 430	34	28	152	41%
2004	LEXS	LX 470	8	1	32	28%
2004	LEXS	OTHER	369	200	1386	41%
2004	LEXS	SC 430	8	4	55	22%
2004	LINC	AVIATOR	48	17	190	34%
2004	LINC	CONTINENTAL	2	2	6	67%
2004	LINC	LS	47	37	226	37%
2004	LINC	NAVIGATOR	62	34	243	40%
2004	LINC	TOWN CAR	71	56	390	33%
2004	LNDR	DISCOVERY	10	7	70	24%
2004	LNDR	RANGE ROVER	14	8	69	32%
2004	MAZD	B2300	7	1	37	22%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2004	MAZD	B3000	4	0	24	17%
2004	MAZD	B4000	1	0	2	50%
2004	MAZD	MIATA	10	0	76	13%
2004	MAZD	MPV WAGON	68	44	265	42%
2004	MAZD	OTHER	477	179	2165	30%
2004	MAZD	TRIBUTE	127	47	462	38%
2004	MERC	GRAND MARQUIS	123	142	790	34%
2004	MERC	MARAUDER	5	0	21	24%
2004	MERC	MONTEREY	28	14	143	29%
2004	MERC	MOUNTAINEER	88	47	403	33%
2004	MERC	SABLE	69	28	346	28%
2004	MERZ	230	4	0	12	33%
2004	MERZ	240	7	6	42	31%
2004	MERZ	320	23	14	117	32%
2004	MERZ	500	11	10	82	26%
2004	MERZ	550	0	1	7	14%
2004	MERZ	600	1	0	7	14%
2004	MERZ	C3A	1	0	2	50%
2004	MERZ	CL500	2	0	4	50%
2004	MERZ	CL55 AMG	1	0	1	100%
2004	MERZ	CLK AMG	1	0	8	13%
2004	MERZ	CLK320	8	1	44	20%
2004	MERZ	OTHER	65	23	311	28%
2004	MERZ	S43	3	3	24	25%
2004	MERZ	S55 AMG	0	1	3	33%
2004	MERZ	SL320	3	0	9	33%
2004	MIN	COOPER	38	17	186	30%
2004	MITS	DIAMANTE	12	1	31	42%
2004	MITS	ECLIPSE	31	12	153	28%
2004	MITS	GALANT	49	26	203	37%
2004	MITS	LANCER	26	13	192	20%
2004	MITS	MONTERO	8	0	36	22%
2004	MITS	OTHER	88	46	403	33%
2004	NISS	ALTIMA	128	66	519	37%
2004	NISS	FRONTIER	23	8	103	30%
2004	NISS	MAXIMA	198	142	810	42%
2004	NISS	OTHER	265	87	1079	33%
2004	NISS	PATHFINDER	50	16	186	35%
2004	NISS	QUEST	94	58	385	39%
2004	NISS	SENTRA	58	56	430	27%
2004	NISS	XTERRA	76	34	370	30%
2004	OLDS	ALERO	247	127	1058	35%
2004	OLDS	BRAVADA	11	3	45	31%
2004	OLDS	SILHOUETTE	25	17	89	47%
2004	OTHER	OTHER	1	0	29	3%
2004	PONT	AZTEK	29	7	118	31%
2004	PONT	BONNEVILLE	49	33	256	32%
2004	PONT	GRAND AM	510	270	2244	35%
2004	PONT	GRAND PRIX	442	244	2049	33%
2004	PONT	GTO	31	19	174	29%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2004	PONT	MONTANA	57	29	212	41%
2004	PONT	SUNFIRE	94	49	461	31%
2004	PONT	VIBE	116	53	483	35%
2004	PORS	911	3	0	34	9%
2004	PORS	BOXSTER	1	0	23	4%
2004	PORS	OTHER	19	6	88	28%
2004	SAA	9-3	11	1	25	48%
2004	SAA	95	2	0	33	6%
2004	SAA	OTHER	42	11	200	27%
2004	STRN	L300	23	11	115	30%
2004	STRN	OTHER	13	3	82	20%
2004	STRN	SI1	22	11	117	28%
2004	STRN	SI2	117	63	594	30%
2004	STRN	SI3	50	22	272	26%
2004	STRN	VUE	197	114	842	37%
2004	SUBA	FORESTER	58	29	242	36%
2004	SUBA	IMPREZA	16	5	152	14%
2004	SUBA	LEGACY	40	22	187	33%
2004	SUBA	OTHER	20	3	78	29%
2004	SUZI	AERIO	9	2	51	22%
2004	SUZI	GRAND VITARA	8	0	34	24%
2004	SUZI	OTHER	40	17	264	22%
2004	SUZI	VITARA	4	0	24	17%
2004	SUZI	XL7	19	23	138	30%
2004	TOYT	4RUNNER	143	83	557	41%
2004	TOYT	AVALON	70	63	371	36%
2004	TOYT	CAMRY	630	362	2595	38%
2004	TOYT	CELICA	19	4	68	34%
2004	TOYT	COROLLA	265	185	1495	30%
2004	TOYT	ECHO	1	0	12	8%
2004	TOYT	HIGHLANDER	219	122	800	43%
2004	TOYT	LAND CRUISER	9	4	35	37%
2004	TOYT	OTHER	9	1	45	22%
2004	TOYT	PRIUS	63	45	216	50%
2004	TOYT	RAV4	73	46	394	30%
2004	TOYT	SEQUOIA	82	42	258	48%
2004	TOYT	SIENNA	373	228	1264	48%
2004	TOYT	TACOMA	65	8	274	27%
2004	TOYT	TERCEL	66	25	281	32%
2004	TOYT	TUNDRA	47	10	221	26%
2004	VOLK	BEETLE	48	9	226	25%
2004	VOLK	GOLF	5	0	34	15%
2004	VOLK	GTI	5	0	22	23%
2004	VOLK	JETTA	100	48	469	32%
2004	VOLK	OTHER	54	22	299	25%
2004	VOLK	PASSAT	81	42	372	33%
2004	VOLV	C70	16	8	69	35%
2004	VOLV	OTHER	106	19	453	28%
2004	VOLV	S40	30	13	154	28%
2004	VOLV	S60	77	26	297	35%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2004	VOLV	S80	46	11	181	31%
2004	VOLV	V40	2	0	17	12%
2004	VOLV	V70	45	28	188	39%
2004	VOLV	V70R	4	0	8	50%
2003			7	0	9	78%
2003	ACUR	3.2 CS	3	0	25	12%
2003	ACUR	3.2TL	3	5	154	5%
2003	ACUR	MDP	7	7	74	19%
2003	ACUR	MDXMDX	3	1	20	20%
2003	AUDI	A4	2	2	71	6%
2003	AUDI	A6	0	1	21	5%
2003	BMW	325I	1	3	92	4%
2003	BMW	325XI	0	1	40	3%
2003	BMW	330XI	0	1	20	5%
2003	BMW	530I	2	2	69	6%
2003	BMW	745LI	0	2	32	6%
2003	BMW	X5	3	1	65	6%
2003	BUIC	CENTURY	3	5	108	7%
2003	BUIC	LESABRE	12	9	88	24%
2003	BUIC	REGAL	2	0	45	4%
2003	BUIC	RENDEZOUS	2	2	119	3%
2003	CADI	CTS	1	2	152	2%
2003	CADI	DEVILLE	3	7	171	6%
2003	CADI	ESCALADE	4	3	119	6%
2003	CADI	SEVILLE	1	1	61	3%
2003	CHEV	ASTRO VAN	3	2	49	10%
2003	CHEV	AVALANCHE	4	2	103	6%
2003	CHEV	BLAZER	21	10	517	6%
2003	CHEV	C1500	0	1	18	6%
2003	CHEV	CAVALIER	8	8	431	4%
2003	CHEV	CORVETTE	1	2	69	4%
2003	CHEV	EXPRESS	1	0	11	9%
2003	CHEV	IMPALA	26	13	456	9%
2003	CHEV	K1500	14	3	152	11%
2003	CHEV	MALIBU	13	5	346	5%
2003	CHEV	MONTE CARLO	6	5	209	5%
2003	CHEV	S10	4	8	210	6%
2003	CHEV	SILVERADO	19	10	431	7%
2003	CHEV	SUBURBAN	7	6	161	8%
2003	CHEV	TRACKER	2	0	64	3%
2003	CHEV	VENTURE	10	5	113	13%
2003	CHRY	300M	2	0	27	7%
2003	CHRY	CONCORDE	1	2	35	9%
2003	CHRY	PT CRUISER	5	2	144	5%
2003	CHRY	SEBRING	0	2	69	3%
2003	CHRY	TOWN & COUNTRY	8	7	138	11%
2003	CHRY	VOYAGER	1	2	21	14%
2003	DODG	CARAVAN	19	12	363	9%
2003	DODG	DAKOTA	11	5	183	9%
2003	DODG	DURANGO	9	5	173	8%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2003	DODG	INTREPID	6	3	95	9%
2003	DODG	NEON	8	2	221	5%
2003	DODG	RAM 1500	12	3	335	4%
2003	DODG	RAM 2500	1	0	1	100%
2003	DODG	STRATUS	4	1	130	4%
2003	FORD	CROWN VICTORIA	3	0	67	4%
2003	FORD	ECONOLINE	4	0	43	9%
2003	FORD	ESCAPE	6	6	259	5%
2003	FORD	ESCORT	0	2	72	3%
2003	FORD	EXPEDITION	9	5	216	6%
2003	FORD	EXPLORER	20	13	501	7%
2003	FORD	F150	27	8	438	8%
2003	FORD	FOCUS	13	9	406	5%
2003	FORD	MUSTANG	2	3	265	2%
2003	FORD	RANGER	3	12	252	6%
2003	FORD	TAURUS	19	13	585	5%
2003	FORD	THUNDERBIRD	0	1	16	6%
2003	FORD	WINDSTAR	12	9	206	10%
2003	GMC	DENALI	4	3	106	7%
2003	GMC	ENVOY	9	10	220	9%
2003	GMC	SAFARI	1	2	27	11%
2003	GMC	SAVANA	4	0	34	12%
2003	GMC	SIERRA	8	1	91	10%
2003	GMC	SONOMA	2	2	50	8%
2003	GMC	YUKON	9	6	140	11%
2003	HOND	ACCORD	21	21	407	10%
2003	HOND	CIVIC	8	9	220	8%
2003	HOND	CR-V	7	3	105	10%
2003	HOND	ODYSSEY	20	10	167	18%
2003	HOND	OTHER	4	3	66	11%
2003	HOND	PILOT	4	3	108	6%
2003	HYUN	ACCENT	1	1	45	4%
2003	HYUN	ELANTRA	2	5	124	6%
2003	HYUN	SANTA FE	8	7	98	15%
2003	HYUN	SONATA	5	3	88	9%
2003	HYUN	TIBURON	0	1	28	4%
2003	HYUN	TIBURON GT	1	2	80	4%
2003	HYUN	XG350	0	1	8	13%
2003	INFI	G35	1	4	225	2%
2003	INFI	I35	1	3	43	9%
2003	INFI	OTHER	1	0	51	2%
2003	INFI	QX4	2	0	28	7%
2003	ISU	AXIOM	1	0	4	25%
2003	JAGU	XJ8	0	1	7	14%
2003	JAGU	XJS	1	0	47	2%
2003	JAGU	X-TYPE	0	1	67	1%
2003	JEEP	CHEROKEE	12	9	191	11%
2003	JEEP	GRAND CHEROKEE	0	3	15	20%
2003	JEEP	LIBERTY	2	6	279	3%
2003	JEEP	WRANGLER	2	2	106	4%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2003	KIA	OTHER	3	1	83	5%
2003	KIA	SEDONA	1	3	57	7%
2003	KIA	SEPHIA	2	1	72	4%
2003	LEXS	ES 300	1	4	127	4%
2003	LEXS	GS 300	0	1	16	6%
2003	LEXS	GX 470	1	0	34	3%
2003	LEXS	IS 300	1	0	21	5%
2003	LEXS	LS 430	2	0	31	6%
2003	LEXS	RX 300	2	3	89	6%
2003	LINC	AVIATOR	1	1	46	4%
2003	LINC	LS	1	0	58	2%
2003	LINC	NAVIGATOR	3	2	92	5%
2003	LINC	TOWN CAR	7	5	114	11%
2003	LNDR	DISCOVERY	1	0	37	3%
2003	MAZD	B2300	1	0	8	13%
2003	MAZD	MIATA	1	0	11	9%
2003	MAZD	MPV WAGON	2	4	29	21%
2003	MAZD	OTHER	3	1	79	5%
2003	MAZD	PROTEGE	11	5	153	10%
2003	MAZD	TRIBUTE	2	6	77	10%
2003	MERC	GRAND MARQUIS	3	14	136	13%
2003	MERC	MOUNTAINEER	5	5	105	10%
2003	MERC	SABLE	3	1	127	3%
2003	MERZ	230	1	0	31	3%
2003	MERZ	240	1	0	46	2%
2003	MERZ	320	2	2	103	4%
2003	MERZ	500	0	1	65	2%
2003	MERZ	CLK320	0	1	17	6%
2003	MERZ	OTHER	1	1	76	3%
2003	MERZ	S43	2	0	12	17%
2003	MERZ	SLK230	1	0	11	9%
2003	MIN	COOPER	1	1	38	5%
2003	MITS	ECLIPSE	7	3	193	5%
2003	MITS	GALANT	3	1	121	3%
2003	MITS	LANCER	1	1	59	3%
2003	MITS	MONTERO	2	3	35	14%
2003	NISS	ALTIMA	16	7	291	8%
2003	NISS	FRONTIER	0	1	21	5%
2003	NISS	MAXIMA	6	3	99	9%
2003	NISS	OTHER	9	2	178	6%
2003	NISS	PATHFINDER	8	1	65	14%
2003	NISS	SENTRA	3	3	60	10%
2003	NISS	XTERRA	4	1	86	6%
2003	OLDS	ALERO	10	5	187	8%
2003	OLDS	BRAVADA	2	0	17	12%
2003	OLDS	SILHOUETTE	1	1	31	6%
2003	OTHER	OTHER	2	0	34	6%
2003	PONT	AZTEK	1	0	30	3%
2003	PONT	BONNEVILLE	2	1	60	5%
2003	PONT	GRAND AM	7	2	448	2%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2003	PONT	GRAND PRIX	4	4	227	4%
2003	PONT	MONTANA	1	2	54	6%
2003	PONT	SUNFIRE	2	0	61	3%
2003	PONT	VIBE	4	3	74	9%
2003	PORS	BOXSTER	1	0	22	5%
2003	SAA	OTHER	1	0	41	2%
2003	STRN	L200	3	1	150	3%
2003	STRN	L300	1	0	23	4%
2003	STRN	LW300	1	0	2	50%
2003	STRN	SI1	2	0	32	6%
2003	STRN	SI2	3	2	59	8%
2003	STRN	SI3	3	0	37	8%
2003	STRN	VUE	9	4	160	8%
2003	SUBA	FORESTER	6	2	35	23%
2003	SUBA	IMPREZA	2	0	33	6%
2003	SUBA	LEGACY	2	1	27	11%
2003	SUBA	OTHER	1	1	21	10%
2003	SUZI	AERIO	2	0	37	5%
2003	SUZI	XL7	1	0	27	4%
2003	TOYT	4RUNNER	3	0	46	7%
2003	TOYT	AVALON	2	1	53	6%
2003	TOYT	CAMRY	25	20	311	14%
2003	TOYT	CELICA	2	0	22	9%
2003	TOYT	COROLLA	20	7	203	13%
2003	TOYT	ECHO	0	2	32	6%
2003	TOYT	HIGHLANDER	8	6	94	15%
2003	TOYT	PRIUS	4	1	15	33%
2003	TOYT	RAV4	2	2	58	7%
2003	TOYT	SEQUOIA	3	5	42	19%
2003	TOYT	SIENNA	2	2	35	11%
2003	TOYT	TACOMA	3	0	40	8%
2003	TOYT	TERCEL	1	2	50	6%
2003	TOYT	TUNDRA	3	0	21	14%
2003	VOLK	BEETLE	3	1	66	6%
2003	VOLK	GOLF	1	0	17	6%
2003	VOLK	JETTA	5	0	154	3%
2003	VOLK	PASSAT	6	4	135	7%
2003	VOLV	S40	2	0	12	17%
2003	VOLV	S60	2	1	49	6%
2003	VOLV	S80	1	0	31	3%
2003	VOLV	V70	1	0	14	7%
2002			143	3	153	95%
2002	ACUR	3.2 CL	5	1	20	30%
2002	ACUR	3.2 CS	1	2	20	15%
2002	ACUR	3.2TL	118	64	445	41%
2002	ACUR	3.5RL	24	14	128	30%
2002	ACUR	MDP	66	49	254	45%
2002	ACUR	MDXMDX	29	24	142	37%
2002	ACUR	RSX	56	37	299	31%
2002	AUDI	A4	26	24	197	25%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2002	AUDI	A6	22	11	100	33%
2002	AUDI	A8	1	0	6	17%
2002	AUDI	ALLROAD	2	0	11	18%
2002	AUDI	AVANT	1	0	4	25%
2002	AUDI	QUATTRO	2	0	7	29%
2002	AUDI	TT	6	5	74	15%
2002	BMW	325I	62	50	351	32%
2002	BMW	325XI	27	10	88	42%
2002	BMW	325XIT	5	0	12	42%
2002	BMW	330CI	17	16	100	33%
2002	BMW	330I	9	7	46	35%
2002	BMW	330XI	6	4	30	33%
2002	BMW	525I	12	10	90	24%
2002	BMW	530I	23	14	98	38%
2002	BMW	540I	3	9	30	40%
2002	BMW	745I	8	7	55	27%
2002	BMW	745LI	4	2	34	18%
2002	BMW	M3	4	6	43	23%
2002	BMW	M5	3	0	14	21%
2002	BMW	X5	33	26	178	33%
2002	BMW	Z3	2	4	47	13%
2002	BUIC	CENTURY	162	136	969	31%
2002	BUIC	LESABRE	166	158	937	35%
2002	BUIC	PARK AVENUE	29	28	176	32%
2002	BUIC	REGAL	57	36	280	33%
2002	BUIC	RENDEZOUS	61	79	557	25%
2002	CADI	DEVILLE	106	112	681	32%
2002	CADI	ELDORADO	6	0	50	12%
2002	CADI	ESCALADE	92	47	415	33%
2002	CADI	SEVILLE	34	34	201	34%
2002	CHEV	ASTRO VAN	77	36	279	41%
2002	CHEV	AVALANCHE	176	103	672	42%
2002	CHEV	BLAZER	599	428	2999	34%
2002	CHEV	C1500	18	10	76	37%
2002	CHEV	CAMARO	50	24	326	23%
2002	CHEV	CAVALIER	597	385	3011	33%
2002	CHEV	CORVETTE	13	17	262	11%
2002	CHEV	EXPRESS	27	4	103	30%
2002	CHEV	G10	1	0	9	11%
2002	CHEV	IMPALA	427	295	2161	33%
2002	CHEV	K1500	187	115	761	40%
2002	CHEV	MALIBU	332	206	1661	32%
2002	CHEV	MONTE CARLO	166	98	807	33%
2002	CHEV	PRIZM	35	33	192	35%
2002	CHEV	S10	185	126	1042	30%
2002	CHEV	SILVERADO	556	324	2306	38%
2002	CHEV	SUBURBAN	177	113	673	43%
2002	CHEV	TRACKER	44	42	352	24%
2002	CHEV	VENTURE	158	107	641	41%
2002	CHRY	300M	97	44	374	38%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2002	CHRY	CONCORDE	58	34	364	25%
2002	CHRY	INTREPID	3	0	11	27%
2002	CHRY	PROWLER	1	0	12	8%
2002	CHRY	PT CRUISER	256	209	1331	35%
2002	CHRY	SEBRING	249	151	1151	35%
2002	CHRY	TOWN & COUNTRY	273	174	1188	38%
2002	CHRY	VOYAGER	86	43	328	39%
2002	DAEW	LANOS	3	3	29	21%
2002	DAEW	LEGANZA	1	0	4	25%
2002	DAEW	NUBIRA	1	0	15	7%
2002	DODG	CARAVAN	541	347	2352	38%
2002	DODG	DAKOTA	208	74	1203	23%
2002	DODG	DURANGO	159	69	757	30%
2002	DODG	INTREPID	173	120	881	33%
2002	DODG	NEON	123	81	718	28%
2002	DODG	RAM 1500	328	196	1715	31%
2002	DODG	RAM VAN	21	0	96	22%
2002	DODG	RAM WAGON	2	0	15	13%
2002	DODG	STRATUS	206	108	980	32%
2002	DODG	VIPER	1	0	7	14%
2002	FORD	CROWN VICTORIA	24	22	196	23%
2002	FORD	ECONOLINE	144	19	371	44%
2002	FORD	ESCAPE	355	241	1552	38%
2002	FORD	ESCORT	226	159	1281	30%
2002	FORD	EXCURSION	4	0	4	100%
2002	FORD	EXPEDITION	72	40	320	35%
2002	FORD	EXPLORER	1119	709	4745	39%
2002	FORD	F150	622	222	2597	32%
2002	FORD	F250	2	0	2	100%
2002	FORD	FOCUS	457	220	1996	34%
2002	FORD	MUSTANG	156	95	952	26%
2002	FORD	RANGER	266	167	1539	28%
2002	FORD	TAURUS	625	396	3441	30%
2002	FORD	THUNDERBIRD	24	19	182	24%
2002	FORD	WINDSTAR	343	232	1339	43%
2002	GMC	DENALI	112	62	397	44%
2002	GMC	ENVOY	242	161	1090	37%
2002	GMC	SAFARI	35	31	242	27%
2002	GMC	SAVANA	55	27	268	31%
2002	GMC	SIERRA	156	78	618	38%
2002	GMC	SONOMA	59	44	295	35%
2002	GMC	YUKON	151	117	678	40%
2002	HOND	ACCORD	471	319	2212	36%
2002	HOND	CIVIC	300	198	1578	32%
2002	HOND	CR-V	173	155	858	38%
2002	HOND	ODYSSEY	294	201	1047	47%
2002	HOND	PASSPORT	3	0	16	19%
2002	HOND	S2000	4	4	53	15%
2002	HYUN	ACCENT	76	66	561	25%
2002	HYUN	ELANTRA	195	132	979	33%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2002	HYUN	SANTA FE	197	112	813	38%
2002	HYUN	SONATA	159	35	829	23%
2002	HYUN	XG350	26	28	178	30%
2002	INFI	G20	41	25	181	36%
2002	INFI	I35	85	77	387	42%
2002	INFI	Q45	14	12	66	39%
2002	INFI	QX4	61	38	266	37%
2002	ISU	AMIGO	6	6	38	32%
2002	ISU	AXIOM	11	20	97	32%
2002	ISU	RODEO	58	27	232	37%
2002	ISU	TROOPER	22	14	116	31%
2002	JAGU	VDP	6	4	17	59%
2002	JAGU	XJ8	1	2	11	27%
2002	JAGU	XJS	10	10	64	31%
2002	JAGU	XK8	0	2	17	12%
2002	JAGU	X-TYPE	41	33	244	30%
2002	JEEP	CHEROKEE	275	172	1325	34%
2002	JEEP	GRAND CHEROKEE	71	36	279	38%
2002	JEEP	LIBERTY	265	215	1688	28%
2002	JEEP	WRANGLER	32	40	503	14%
2002	KIA	OPTIMA	53	28	247	33%
2002	KIA	RIO	22	20	261	16%
2002	KIA	SEDONA	95	70	452	37%
2002	KIA	SEPHIA	63	1	313	20%
2002	KIA	SPORTAGE	50	33	365	23%
2002	LEXS	ES 300	98	79	500	35%
2002	LEXS	GS 300	13	10	73	32%
2002	LEXS	GS 430	2	0	15	13%
2002	LEXS	IS 300	24	14	124	31%
2002	LEXS	IS300	1	0	4	25%
2002	LEXS	LS 430	30	22	145	36%
2002	LEXS	LX 470	8	6	41	34%
2002	LEXS	RX 300	85	75	461	35%
2002	LEXS	SC 430	27	27	190	28%
2002	LINC	CONTINENTAL	26	26	151	34%
2002	LINC	LS	78	66	410	35%
2002	LINC	NAVIGATOR	22	8	78	38%
2002	LINC	TOWN CAR	52	32	215	39%
2002	LNDR	DISCOVERY	6	1	48	15%
2002	LNDR	FRELANDER	5	7	72	17%
2002	LNDR	RANGE ROVER	2	3	16	31%
2002	MAZD	626	114	75	595	32%
2002	MAZD	B2300	11	3	48	29%
2002	MAZD	B3000	22	22	147	30%
2002	MAZD	B4000	3	0	16	19%
2002	MAZD	MIATA	14	17	113	27%
2002	MAZD	MILLENIA	50	4	194	28%
2002	MAZD	MPV WAGON	78	71	349	43%
2002	MAZD	PROTEGE	227	152	1066	36%
2002	MAZD	TRIBUTE	163	113	663	42%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2002	MERC	COUGAR	82	38	414	29%
2002	MERC	GRAND MARQUIS	93	92	549	34%
2002	MERC	MOUNTAINEER	151	85	581	41%
2002	MERC	SABLE	161	126	944	30%
2002	MERC	VILLAGER	45	28	195	37%
2002	MERZ	230	17	13	110	27%
2002	MERZ	240	28	20	169	28%
2002	MERZ	320	35	26	197	31%
2002	MERZ	500	8	5	72	18%
2002	MERZ	C3A	1	1	6	33%
2002	MERZ	CL500	2	1	15	20%
2002	MERZ	CLK AMG	2	2	14	29%
2002	MERZ	CLK320	4	8	60	20%
2002	MERZ	CLK430	2	6	39	21%
2002	MERZ	E430	2	2	19	21%
2002	MERZ	G500	4	0	13	31%
2002	MERZ	ML320	17	23	116	34%
2002	MERZ	ML500	5	0	24	21%
2002	MERZ	ML55	1	0	1	100%
2002	MERZ	S43	13	11	76	32%
2002	MERZ	S55 AMG	0	1	6	17%
2002	MERZ	SL320	5	3	25	32%
2002	MERZ	SLK230	1	5	17	35%
2002	MERZ	SLK32	0	1	6	17%
2002	MIN	COOPER	22	20	137	31%
2002	MITS	DIAMANTE	43	19	160	39%
2002	MITS	ECLIPSE	72	44	366	32%
2002	MITS	GALANT	159	79	653	36%
2002	MITS	LANCER	69	45	388	29%
2002	MITS	MIRAGE	7	3	40	25%
2002	MITS	MONTERO	112	64	480	37%
2002	NISS	ALTIMA	252	138	1127	35%
2002	NISS	FRONTIER	42	18	192	31%
2002	NISS	MAXIMA	227	130	822	43%
2002	NISS	PATHFINDER	79	62	386	37%
2002	NISS	QUEST	20	12	99	32%
2002	NISS	SENTRA	87	56	495	29%
2002	NISS	XTERRA	96	70	479	35%
2002	OLDS	ALERO	220	115	961	35%
2002	OLDS	AURORA	18	10	102	27%
2002	OLDS	BRAVADA	59	33	263	35%
2002	OLDS	INTRIGUE	66	49	306	38%
2002	OLDS	SILHOUETTE	56	36	230	40%
2002	PONT	AZTEK	26	13	116	34%
2002	PONT	BONNEVILLE	83	58	404	35%
2002	PONT	FIREBIRD	47	37	313	27%
2002	PONT	GRAND AM	371	205	1762	33%
2002	PONT	GRAND PRIX	383	238	1744	36%
2002	PONT	MONTANA	101	49	376	40%
2002	PONT	SUNFIRE	152	93	853	29%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2002	PORS	911	5	0	38	13%
2002	PORS	BOXSTER	3	5	50	16%
2002	SAA	9-3	19	13	103	31%
2002	SAA	95	10	12	64	34%
2002	SAA	VIGGEN	1	0	8	13%
2002	STRN	L100	38	31	169	41%
2002	STRN	L200	136	76	568	37%
2002	STRN	L300	52	30	203	40%
2002	STRN	LW200	8	6	34	41%
2002	STRN	LW300	9	5	37	38%
2002	STRN	SC	84	85	529	32%
2002	STRN	SL	252	183	1412	31%
2002	STRN	VUE	80	39	348	34%
2002	SUBA	FORESTER	51	30	226	36%
2002	SUBA	IMPREZA	21	14	229	15%
2002	SUBA	LEGACY	47	42	312	29%
2002	SUZI	AERIO	12	6	60	30%
2002	SUZI	ESTEEM	1	0	12	8%
2002	SUZI	GRAND VITARA	24	16	114	35%
2002	SUZI	VITARA	3	6	42	21%
2002	SUZI	XL7	51	38	250	36%
2002	TOYT	4RUNNER	65	55	323	37%
2002	TOYT	AVALON	67	68	394	34%
2002	TOYT	CAMRY	690	471	2951	39%
2002	TOYT	CELICA	38	18	164	34%
2002	TOYT	COROLLA	165	87	833	30%
2002	TOYT	ECHO	33	18	130	39%
2002	TOYT	HIGHLANDER	135	84	548	40%
2002	TOYT	LAND CRUISER	7	0	26	27%
2002	TOYT	MR2	3	4	42	17%
2002	TOYT	PRIUS	24	21	102	44%
2002	TOYT	RAV4	86	60	532	27%
2002	TOYT	SEQUOIA	88	54	328	43%
2002	TOYT	SIENNA	72	72	506	28%
2002	TOYT	TACOMA	52	21	280	26%
2002	TOYT	TUNDRA	61	30	286	32%
2002	VOLK	BEETLE	32	26	228	25%
2002	VOLK	CABRIO	18	8	76	34%
2002	VOLK	EUROVAN	2	0	19	11%
2002	VOLK	GOLF	6	3	62	15%
2002	VOLK	GTI	9	0	48	19%
2002	VOLK	JETTA	111	43	576	27%
2002	VOLK	PASSAT	82	65	457	32%
2002	VOLV	C70	4	0	23	17%
2002	VOLV	S40	15	11	102	25%
2002	VOLV	S60	32	34	238	28%
2002	VOLV	S80	25	14	108	36%
2002	VOLV	V40	3	0	17	18%
2002	VOLV	V70	22	19	156	26%
2001			5	0	7	71%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2001	ACUR	3.2 CS	3	1	18	22%
2001	ACUR	3.2TL	1	3	35	11%
2001	ACUR	MDP	4	3	29	24%
2001	ACUR	MDXMDX	1	1	20	10%
2001	AUDI	A4	3	0	35	9%
2001	AUDI	A6	1	1	36	6%
2001	BMW	325I	1	3	73	5%
2001	BMW	330CI	2	0	28	7%
2001	BMW	330I	1	1	25	8%
2001	BMW	525I	1	0	22	5%
2001	BMW	530I	1	2	16	19%
2001	BMW	740I	1	0	29	3%
2001	BMW	X5	0	3	38	8%
2001	BMW	Z3	1	0	25	4%
2001	BUIC	CENTURY	11	9	150	13%
2001	BUIC	LESABRE	6	8	132	11%
2001	BUIC	PARK AVENUE	2	3	33	15%
2001	BUIC	REGAL	5	4	65	14%
2001	CADI	CATERA	1	0	20	5%
2001	CADI	DEVILLE	2	5	114	6%
2001	CADI	ELDORADO	1	0	11	9%
2001	CADI	PROF CHASSIS	1	0	5	20%
2001	CADI	SEVILLE	1	5	55	11%
2001	CHEV	ASTRO VAN	4	1	34	15%
2001	CHEV	BLAZER	8	3	267	4%
2001	CHEV	CAMARO	1	0	59	2%
2001	CHEV	CAVALIER	23	10	456	7%
2001	CHEV	CORVETTE	1	0	58	2%
2001	CHEV	EXPRESS	1	0	26	4%
2001	CHEV	IMPALA	8	8	236	7%
2001	CHEV	K1500	5	6	138	8%
2001	CHEV	LUMINA	2	4	65	9%
2001	CHEV	MALIBU	21	8	340	9%
2001	CHEV	METRO	2	0	20	10%
2001	CHEV	MONTE CARLO	2	5	164	4%
2001	CHEV	PRIZM	2	0	40	5%
2001	CHEV	S10	8	4	174	7%
2001	CHEV	SILVERADO	17	7	248	10%
2001	CHEV	SUBURBAN	9	7	127	13%
2001	CHEV	TRACKER	0	1	60	2%
2001	CHEV	VENTURE	5	6	99	11%
2001	CHRY	300M	0	1	46	2%
2001	CHRY	CONCORDE	1	1	43	5%
2001	CHRY	LHS	0	1	18	6%
2001	CHRY	PT CRUISER	11	8	184	10%
2001	CHRY	SEBRING	7	5	163	7%
2001	CHRY	TOWN & COUNTRY	2	8	132	8%
2001	CHRY	VOYAGER	2	0	39	5%
2001	DAEW	NUBIRA	2	0	19	11%
2001	DODG	CARAVAN	19	6	252	10%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2001	DODG	DAKOTA	5	4	186	5%
2001	DODG	DURANGO	6	3	154	6%
2001	DODG	INTREPID	6	3	144	6%
2001	DODG	NEON	1	4	93	5%
2001	DODG	RAM 1500	9	3	302	4%
2001	DODG	RAM VAN	3	0	19	16%
2001	DODG	STRATUS	7	2	148	6%
2001	FORD	CROWN VICTORIA	2	0	80	3%
2001	FORD	ECONOLINE	9	1	48	21%
2001	FORD	ESCAPE	6	8	164	9%
2001	FORD	ESCORT	6	1	166	4%
2001	FORD	EXCURSION	1	0	1	100%
2001	FORD	EXPEDITION	6	5	154	7%
2001	FORD	EXPLORER	18	8	467	6%
2001	FORD	F150	31	14	492	9%
2001	FORD	FOCUS	10	7	317	5%
2001	FORD	MUSTANG	4	0	258	2%
2001	FORD	RANGER	12	4	288	6%
2001	FORD	TAURUS	23	0	523	4%
2001	FORD	WINDSTAR	9	2	217	5%
2001	GMC	DENALI	4	1	46	11%
2001	GMC	JIMMY	4	3	87	8%
2001	GMC	SAFARI	1	0	21	5%
2001	GMC	SAVANA	1	0	25	4%
2001	GMC	SIERRA	4	4	83	10%
2001	GMC	SONOMA	2	0	48	4%
2001	GMC	YUKON	15	4	140	14%
2001	HOND	ACCORD	21	16	292	13%
2001	HOND	CIVIC	13	8	259	8%
2001	HOND	CR-V	11	3	94	15%
2001	HOND	ODYSSEY	8	6	116	12%
2001	HOND	PASSPORT	1	0	9	11%
2001	HOND	PRELUDE	1	1	14	14%
2001	HYUN	ACCENT	3	2	104	5%
2001	HYUN	ELANTRA	4	4	142	6%
2001	HYUN	SANTA FE	1	2	95	3%
2001	HYUN	TIBURON	0	1	87	1%
2001	HYUN	XG3	4	3	61	11%
2001	INFI	G20	1	0	16	6%
2001	INFI	I30	5	0	73	7%
2001	INFI	QX4	4	0	68	6%
2001	ISU	AMIGO	1	0	5	20%
2001	ISU	RODEO	4	1	69	7%
2001	ISU	TROOPER	2	0	29	7%
2001	JEEP	CHEROKEE	20	3	430	5%
2001	JEEP	WRANGLER	2	1	71	4%
2001	KIA	OPTIMA	1	1	45	4%
2001	KIA	RIO	0	1	52	2%
2001	KIA	SEPHIA	2	0	57	4%
2001	KIA	SPORTAGE	1	1	95	2%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2001	LEXS	ES 300	1	3	38	11%
2001	LEXS	LS 430	2	1	29	10%
2001	LEXS	RX 300	6	5	81	14%
2001	LINC	CONTINENTAL	0	1	27	4%
2001	LINC	LS	7	2	85	11%
2001	LINC	NAVIGATOR	3	2	37	14%
2001	LINC	TOWN CAR	3	2	75	7%
2001	MAZD	626	6	0	104	6%
2001	MAZD	B3000	0	2	29	7%
2001	MAZD	MILLENNIA	2	0	30	7%
2001	MAZD	MPV WAGON	1	2	50	6%
2001	MAZD	PROTEGE	4	3	88	8%
2001	MAZD	TRIBUTE	4	4	65	12%
2001	MERC	COUGAR	2	0	70	3%
2001	MERC	GRAND MARQUIS	6	9	132	11%
2001	MERC	MOUNTAINEER	0	1	28	4%
2001	MERC	SABLE	9	4	165	8%
2001	MERC	VILLAGER	2	0	29	7%
2001	MERZ	320	1	2	46	7%
2001	MERZ	CLK430	1	0	11	9%
2001	MERZ	S43	1	2	20	15%
2001	MERZ	SL320	1	1	17	12%
2001	MITS	DIAMANTE	1	0	31	3%
2001	MITS	ECLIPSE	5	1	176	3%
2001	MITS	GALANT	4	3	166	4%
2001	MITS	MIRAGE	1	1	49	4%
2001	MITS	MONTERO	1	0	96	1%
2001	NISS	ALTIMA	7	4	105	10%
2001	NISS	FRONTIER	1	2	36	8%
2001	NISS	MAXIMA	8	1	116	8%
2001	NISS	PATHFINDER	3	0	90	3%
2001	NISS	SENTRA	3	5	84	10%
2001	NISS	XTERRA	1	4	78	6%
2001	OLDS	ALERO	7	6	226	6%
2001	OLDS	AURORA	5	0	108	5%
2001	OLDS	BRAVADA	0	1	15	7%
2001	OLDS	INTRIGUE	2	1	73	4%
2001	OLDS	SILHOUETTE	2	5	57	12%
2001	PLYM	NEON	0	2	45	4%
2001	PONT	AZTEK	1	1	50	4%
2001	PONT	BONNEVILLE	3	2	83	6%
2001	PONT	GRAND AM	9	2	328	3%
2001	PONT	GRAND PRIX	10	5	254	6%
2001	PONT	MONTANA	1	0	39	3%
2001	PONT	SUNFIRE	4	0	165	2%
2001	PORS	911	0	1	25	4%
2001	SAA	9/5	0	1	9	11%
2001	SAA	9/E	0	1	12	8%
2001	SAA	9-3	1	1	21	10%
2001	STRN	L200	1	0	6	17%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2001	STRN	L300	1	0	5	20%
2001	STRN	LS1	3	1	77	5%
2001	STRN	LS2	0	1	15	7%
2001	STRN	SL	6	4	154	6%
2001	SUBA	LEGACY	5	6	38	29%
2001	SUZI	XL7	1	0	23	4%
2001	TOYT	4RUNNER	3	0	43	7%
2001	TOYT	AVALON	2	5	52	13%
2001	TOYT	CAMRY	26	26	262	20%
2001	TOYT	CELICA	0	1	52	2%
2001	TOYT	COROLLA	7	8	137	11%
2001	TOYT	ECHO	1	2	28	11%
2001	TOYT	HIGHLANDER	1	3	37	11%
2001	TOYT	RAV4	2	0	61	3%
2001	TOYT	SEQUOIA	2	4	43	14%
2001	TOYT	SIENNA	7	2	55	16%
2001	TOYT	TACOMA	6	0	30	20%
2001	TOYT	TUNDRA	2	5	31	23%
2001	VOLK	BEETLE	0	1	60	2%
2001	VOLK	EUROVAN	1	0	2	50%
2001	VOLK	GOLF	1	2	22	14%
2001	VOLK	GTI	1	0	12	8%
2001	VOLK	JETTA	2	0	148	1%
2001	VOLK	PASSAT	2	1	77	4%
2001	VOLV	S40	1	0	25	4%
2001	VOLV	S80	1	1	26	8%
2001	VOLV	V70	0	4	43	9%
2000			97	0	103	94%
2000	ACUR	3.2TL	114	88	525	38%
2000	ACUR	3.5RL	22	29	131	39%
2000	ACUR	INTEGRA	15	19	146	23%
2000	AUDI	A4	14	4	85	21%
2000	AUDI	A6	21	4	126	20%
2000	AUDI	A8	2	0	14	14%
2000	AUDI	QUATTRO	5	3	26	31%
2000	AUDI	TT	8	2	46	22%
2000	BMW	323CI	20	11	105	30%
2000	BMW	323I	60	24	254	33%
2000	BMW	323IT	6	4	30	33%
2000	BMW	328	7	4	29	38%
2000	BMW	328I	28	10	105	36%
2000	BMW	528I	44	34	220	35%
2000	BMW	540I	6	5	48	23%
2000	BMW	740I	17	14	107	29%
2000	BMW	M5	3	0	13	23%
2000	BMW	MRD	1	0	14	7%
2000	BMW	X5	5	0	25	20%
2000	BMW	Z3	14	10	125	19%
2000	BUIC	CENTURY	151	140	1003	29%
2000	BUIC	LESABRE	179	165	1180	29%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2000	BUIC	PARK AVENUE	47	45	276	33%
2000	BUIC	REGAL	83	55	409	34%
2000	CADI	CATERA	18	1	114	17%
2000	CADI	DEVILLE	99	88	643	29%
2000	CADI	ELDORADO	10	15	79	32%
2000	CADI	ESCALADE	41	31	225	32%
2000	CADI	SEVILLE	44	37	239	34%
2000	CHEV	ASTRO VAN	102	62	521	31%
2000	CHEV	BLAZER	312	221	1750	30%
2000	CHEV	C1500	9	4	56	23%
2000	CHEV	C2500	8	0	9	89%
2000	CHEV	CAMARO	36	26	336	18%
2000	CHEV	CAVALIER	358	284	2394	27%
2000	CHEV	CORVETTE	11	25	243	15%
2000	CHEV	EXPRESS	44	10	148	36%
2000	CHEV	G10	5	3	32	25%
2000	CHEV	IMPALA	283	169	1471	31%
2000	CHEV	K1500	81	59	391	36%
2000	CHEV	K2500	5	0	8	63%
2000	CHEV	K3500	1	0	3	33%
2000	CHEV	LUMINA	46	38	250	34%
2000	CHEV	MALIBU	364	225	1783	33%
2000	CHEV	METRO	13	5	135	13%
2000	CHEV	MONTE CARLO	93	53	529	28%
2000	CHEV	PRIZM	54	0	294	18%
2000	CHEV	S10	206	118	1394	23%
2000	CHEV	SILVERADO	540	302	2660	32%
2000	CHEV	SUBURBAN	84	54	338	41%
2000	CHEV	TRACKER	8	21	209	14%
2000	CHEV	VENTURE	165	106	690	39%
2000	CHRY	300M	71	53	364	34%
2000	CHRY	CIRRUS	60	50	334	33%
2000	CHRY	CONCORDE	60	45	392	27%
2000	CHRY	GRAND VOYAGER	38	30	224	30%
2000	CHRY	INTREPID	6	1	22	32%
2000	CHRY	LHS	34	33	193	35%
2000	CHRY	NEON	1	0	2	50%
2000	CHRY	SEBRING	113	71	526	35%
2000	CHRY	TOWN & COUNTRY	130	115	622	39%
2000	CHRY	VOYAGER	48	22	211	33%
2000	DAEW	LANOS	9	0	75	12%
2000	DAEW	LEGANZA	18	0	81	22%
2000	DAEW	NUBIRA	14	0	69	20%
2000	DODG	AVENGER	13	7	75	27%
2000	DODG	B150	2	0	3	67%
2000	DODG	CARAVAN	625	434	2806	38%
2000	DODG	DAKOTA	186	158	1377	25%
2000	DODG	DURANGO	188	156	1019	34%
2000	DODG	INTREPID	148	134	994	28%
2000	DODG	NEON	131	118	1123	22%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2000	DODG	RAM 1500	93	59	591	26%
2000	DODG	RAM VAN	33	13	159	29%
2000	DODG	RAM WAGON	5	0	20	25%
2000	DODG	STRATUS	141	80	750	29%
2000	FORD	CONTOUR	59	18	445	17%
2000	FORD	CROWN VICTORIA	76	0	451	17%
2000	FORD	ECONOLINE	141	24	433	38%
2000	FORD	ESCORT	133	56	927	20%
2000	FORD	EXCURSION	13	0	15	87%
2000	FORD	EXPEDITION	248	159	1115	37%
2000	FORD	EXPLORER	689	330	3092	33%
2000	FORD	F150	551	213	2396	32%
2000	FORD	F250	3	0	3	100%
2000	FORD	FOCUS	365	234	2005	30%
2000	FORD	MUSTANG	171	108	1148	24%
2000	FORD	RANGER	241	29	1767	15%
2000	FORD	TAURUS	458	144	2978	20%
2000	FORD	WINDSTAR	410	0	1862	22%
2000	GEO	METRO	1	0	19	5%
2000	GMC	DENALI	10	7	50	34%
2000	GMC	JIMMY	113	82	628	31%
2000	GMC	SAFARI	79	65	434	33%
2000	GMC	SAVANA	84	46	464	28%
2000	GMC	SIERRA	144	81	750	30%
2000	GMC	SONOMA	77	31	400	27%
2000	GMC	YUKON	83	37	412	29%
2000	HOND	ACCORD	508	347	2426	35%
2000	HOND	CIVIC	289	217	1749	29%
2000	HOND	CR-V	158	123	739	38%
2000	HOND	ODYSSEY	199	107	940	33%
2000	HOND	PASSPORT	10	5	66	23%
2000	HOND	PRELUDE	4	1	55	9%
2000	HOND	S2000	2	3	60	8%
2000	HYUN	ACCENT	38	0	370	10%
2000	HYUN	ELANTRA	125	61	800	23%
2000	HYUN	SONATA	68	18	505	17%
2000	HYUN	TIBURON	22	16	150	25%
2000	INFI	G20	37	10	164	29%
2000	INFI	I30	102	0	480	21%
2000	INFI	Q45	3	1	28	14%
2000	INFI	QX4	38	28	213	31%
2000	ISU	AMIGO	3	0	18	17%
2000	ISU	RODEO	46	6	227	23%
2000	ISU	TROOPER	17	0	117	15%
2000	JAGU	VDP	6	4	21	48%
2000	JAGU	XJ8	4	7	36	31%
2000	JAGU	XJR	2	0	6	33%
2000	JAGU	XJS	42	36	241	32%
2000	JAGU	XK8	3	1	28	14%
2000	JEEP	CHEROKEE	440	328	2503	31%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2000	JEEP	WRANGLER	37	45	610	13%
2000	KIA	SEPHIA	41	0	253	16%
2000	KIA	SPORTAGE	51	0	347	15%
2000	LEXS	ES 300	46	35	228	36%
2000	LEXS	GS 300	25	11	83	43%
2000	LEXS	GS 400	6	4	26	38%
2000	LEXS	LS 400	10	6	43	37%
2000	LEXS	LX 470	28	12	91	44%
2000	LEXS	RX 300	92	65	411	38%
2000	LINC	CONTINENTAL	24	30	223	24%
2000	LINC	LS	95	90	594	31%
2000	LINC	NAVIGATOR	55	28	246	34%
2000	LINC	TOWN CAR	88	89	636	28%
2000	LNDR	DISCOVERY	7	0	82	9%
2000	LNDR	RANGE ROVER	2	0	25	8%
2000	MAZD	626	121	81	704	29%
2000	MAZD	B2500	10	0	65	15%
2000	MAZD	B3000	18	0	89	20%
2000	MAZD	MIATA	8	11	85	22%
2000	MAZD	MILLENIA	11	0	87	13%
2000	MAZD	MPV WAGON	79	57	365	37%
2000	MAZD	PROTEGE	107	1	659	16%
2000	MERC	COUGAR	46	5	437	12%
2000	MERC	GRAND MARQUIS	174	169	1121	31%
2000	MERC	MOUNTAINEER	75	9	374	22%
2000	MERC	MYSTIQUE	17	16	177	19%
2000	MERC	SABLE	126	40	751	22%
2000	MERC	VILLAGER	56	45	302	33%
2000	MERZ	230	11	13	80	30%
2000	MERZ	280	3	0	21	14%
2000	MERZ	320	22	17	156	25%
2000	MERZ	500	15	5	110	18%
2000	MERZ	CLK320	7	0	33	21%
2000	MERZ	CLK430	9	1	47	21%
2000	MERZ	E430	7	7	39	36%
2000	MERZ	ML320	29	19	154	31%
2000	MERZ	ML430	9	3	46	26%
2000	MERZ	S43	18	2	90	22%
2000	MERZ	SLK230	5	9	41	34%
2000	MITS	DIAMANTE	18	10	86	33%
2000	MITS	ECLIPSE	70	58	507	25%
2000	MITS	GALANT	139	82	680	33%
2000	MITS	MIRAGE	54	23	333	23%
2000	MITS	MONTERO	73	46	392	30%
2000	NISS	ALTIMA	167	126	852	34%
2000	NISS	FRONTIER	25	14	190	21%
2000	NISS	MAXIMA	245	58	1211	25%
2000	NISS	PATHFINDER	46	35	257	32%
2000	NISS	QUEST	25	28	194	27%
2000	NISS	SENTRA	51	0	258	20%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2000	NISS	XTERRA	42	49	377	24%
2000	OLDS	ALERO	241	148	1116	35%
2000	OLDS	BRAVADA	43	27	226	31%
2000	OLDS	INTRIGUE	113	86	663	30%
2000	OLDS	SILHOUETTE	83	63	360	41%
2000	PLYM	BREEZE	10	12	103	21%
2000	PLYM	GRAND VOYAGER	15	12	95	28%
2000	PLYM	NEON	81	54	533	25%
2000	PLYM	VOYAGER	41	20	180	34%
2000	PONT	BONNEVILLE	93	48	425	33%
2000	PONT	FIREBIRD	43	5	276	17%
2000	PONT	GRAND AM	329	220	1650	33%
2000	PONT	GRAND PRIX	309	78	1429	27%
2000	PONT	MONTANA	78	59	406	34%
2000	PONT	SUNFIRE	118	54	661	26%
2000	PORS	911	0	1	37	3%
2000	PORS	BOXSTER	5	3	81	10%
2000	SAA	9/5	3	1	36	11%
2000	SAA	9/E	7	0	29	24%
2000	SAA	9-3	12	0	89	13%
2000	SAA	95	2	0	18	11%
2000	STRN	L200	1	0	1	100%
2000	STRN	LS	15	7	79	28%
2000	STRN	LS1	93	48	405	35%
2000	STRN	LS2	61	54	348	33%
2000	STRN	LW1	3	5	29	28%
2000	STRN	LW2	10	10	68	29%
2000	STRN	SC	28	14	175	24%
2000	STRN	SL	167	111	1052	26%
2000	STRN	SW	11	7	44	41%
2000	SUBA	FORESTER	27	12	111	35%
2000	SUBA	IMPREZA	5	1	50	12%
2000	SUBA	LEGACY	58	46	327	32%
2000	SUZI	ESTEEM	3	0	29	10%
2000	SUZI	GRAND VITARA	29	26	241	23%
2000	SUZI	SWIFT	1	0	5	20%
2000	SUZI	VITARA	2	0	27	7%
2000	TOYT	4RUNNER	82	84	461	36%
2000	TOYT	AVALON	125	115	653	37%
2000	TOYT	CAMRY	559	443	2922	34%
2000	TOYT	CELICA	84	0	492	17%
2000	TOYT	COROLLA	166	81	986	25%
2000	TOYT	ECHO	36	10	189	24%
2000	TOYT	LAND CRUISER	25	20	88	51%
2000	TOYT	MR2	8	3	41	27%
2000	TOYT	RAV4	38	33	276	26%
2000	TOYT	SIENNA	266	172	979	45%
2000	TOYT	TACOMA	36	11	228	21%
2000	TOYT	TUNDRA	73	26	305	32%
2000	VOLK	BEETLE	40	4	310	14%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
2000	VOLK	CABRIO	7	0	65	11%
2000	VOLK	EUROVAN	1	0	4	25%
2000	VOLK	GOLF	9	0	90	10%
2000	VOLK	GTI	1	0	19	5%
2000	VOLK	JETTA	88	0	572	15%
2000	VOLK	PASSAT	50	4	309	17%
2000	VOLV	C70	5	0	25	20%
2000	VOLV	S40	29	0	154	19%
2000	VOLV	S70	43	21	166	39%
2000	VOLV	S80	71	39	258	43%
2000	VOLV	V40	3	4	22	32%
2000	VOLV	V70	27	9	112	32%
1999			5	0	5	100%
1999	ACUR	3.0 CL	1	0	18	6%
1999	ACUR	3.2TL	1	4	55	9%
1999	ACUR	3.5RL	1	0	20	5%
1999	AUDI	A4	1	0	33	3%
1999	AUDI	QUATTRO	1	0	25	4%
1999	BMW	328i	1	1	29	7%
1999	BMW	528i	2	0	20	10%
1999	BMW	Z3	1	0	15	7%
1999	BUIC	CENTURY	12	8	163	12%
1999	BUIC	LESABRE	3	3	89	7%
1999	BUIC	PARK AVENUE	0	1	53	2%
1999	BUIC	REGAL	4	2	78	8%
1999	CADI	CATERA	1	0	34	3%
1999	CADI	DEVILLE	4	1	152	3%
1999	CADI	ELDORADO	1	0	22	5%
1999	CADI	ESCALADE	1	1	28	7%
1999	CADI	SEVILLE	2	2	56	7%
1999	CHEV	ASTRO VAN	3	2	60	8%
1999	CHEV	BLAZER	15	10	256	10%
1999	CHEV	C1500	1	0	13	8%
1999	CHEV	CAVALIER	9	6	428	4%
1999	CHEV	EXPRESS	1	0	14	7%
1999	CHEV	K1500	6	4	208	5%
1999	CHEV	LUMINA	6	3	179	5%
1999	CHEV	MALIBU	5	5	293	3%
1999	CHEV	MONTE CARLO	6	8	155	9%
1999	CHEV	PRIZM	2	3	50	10%
1999	CHEV	S10	5	5	186	5%
1999	CHEV	SILVERADO	14	7	211	10%
1999	CHEV	SUBURBAN	6	5	180	6%
1999	CHEV	TRACKER	1	1	40	5%
1999	CHEV	VENTURE	2	4	111	5%
1999	CHRY	300M	3	2	139	4%
1999	CHRY	CIRRUS	4	2	46	13%
1999	CHRY	CONCORDE	3	6	88	10%
1999	CHRY	LHS	2	0	53	4%
1999	CHRY	SEBRING	1	1	110	2%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1999	CHRY	TOWN & COUNTRY	2	4	77	8%
1999	DODG	AVENGER	0	1	54	2%
1999	DODG	CARAVAN	16	5	343	6%
1999	DODG	DAKOTA	3	5	175	5%
1999	DODG	DURANGO	4	7	213	5%
1999	DODG	INTREPID	4	4	196	4%
1999	DODG	NEON	2	0	131	2%
1999	DODG	RAM 1500	3	7	239	4%
1999	DODG	RAM VAN	1	1	37	5%
1999	DODG	STRATUS	2	1	144	2%
1999	FORD	CONTOUR	6	0	210	3%
1999	FORD	ECONOLINE	5	0	82	6%
1999	FORD	ESCORT	13	2	403	4%
1999	FORD	EXPEDITION	10	0	201	5%
1999	FORD	EXPLORER	20	10	546	5%
1999	FORD	F150	19	2	384	5%
1999	FORD	F250	1	0	14	7%
1999	FORD	MUSTANG	4	2	169	4%
1999	FORD	RANGER	7	3	283	4%
1999	FORD	TAURUS	22	1	616	4%
1999	FORD	WINDSTAR	6	1	277	3%
1999	GEO	METRO	0	1	8	13%
1999	GMC	JIMMY	2	1	97	3%
1999	GMC	K1500	4	2	78	8%
1999	GMC	SAFARI	5	3	56	14%
1999	GMC	SIERRA	5	1	61	10%
1999	GMC	SONOMA	2	0	55	4%
1999	GMC	YUKON	4	0	101	4%
1999	HOND	ACCORD	20	0	327	6%
1999	HOND	CIVIC	9	9	247	7%
1999	HOND	CR-V	7	9	81	20%
1999	HOND	ODYSSEY	3	0	46	7%
1999	HOND	PASSPORT	2	0	29	7%
1999	HYUN	ELANTRA	3	0	56	5%
1999	INFI	G20	1	1	26	8%
1999	INFI	Q45	1	0	17	6%
1999	INFI	QX4	3	1	38	11%
1999	ISU	RODEO	1	0	52	2%
1999	ISU	TROOPER	1	0	22	5%
1999	JAGU	XJ8	1	0	13	8%
1999	JEEP	CHEROKEE	17	13	518	6%
1999	JEEP	WRANGLER	0	2	95	2%
1999	KIA	SPORTAGE	1	0	24	4%
1999	LEXS	ES 300	5	1	41	15%
1999	LEXS	GS 300	3	0	17	18%
1999	LEXS	LS 400	1	1	6	33%
1999	LEXS	LX 470	1	0	10	10%
1999	LEXS	RX 300	1	2	68	4%
1999	LINC	CONTINENTAL	1	2	37	8%
1999	LINC	TOWN CAR	3	4	76	9%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1999	MAZD	626	2	0	120	2%
1999	MAZD	PROTEGE	5	0	97	5%
1999	MERC	COUGAR	5	1	162	4%
1999	MERC	GRAND MARQUIS	5	3	91	9%
1999	MERC	SABLE	13	0	173	8%
1999	MERC	TRACER	1	0	27	4%
1999	MERC	VILLAGER	3	1	71	6%
1999	MERZ	320	4	4	39	21%
1999	MERZ	CLK320	1	0	19	5%
1999	MERZ	E430	1	0	6	17%
1999	MERZ	ML320	1	0	22	5%
1999	MERZ	ML430	3	0	12	25%
1999	MITS	DIAMANTE	1	0	23	4%
1999	MITS	GALANT	1	3	102	4%
1999	MITS	MIRAGE	0	1	43	2%
1999	MITS	MONTERO	1	0	41	2%
1999	NISS	ALTIMA	6	6	167	7%
1999	NISS	FRONTIER	0	1	13	8%
1999	NISS	MAXIMA	3	0	112	3%
1999	NISS	PATHFINDER	2	0	49	4%
1999	OLDS	ALERO	9	1	218	5%
1999	OLDS	AURORA	3	1	32	13%
1999	OLDS	BRAVADA	1	1	41	5%
1999	OLDS	CUTLASS	4	0	58	7%
1999	OLDS	DELTA 88	3	5	44	18%
1999	OLDS	INTRIGUE	8	7	177	8%
1999	OLDS	REGENCY	2	1	9	33%
1999	OLDS	SILHOUETTE	0	3	77	4%
1999	PLYM	BREEZE	2	2	85	5%
1999	PLYM	GRAND VOYAGER	2	1	60	5%
1999	PLYM	VOYAGER	4	1	95	5%
1999	PONT	BONNEVILLE	1	3	74	5%
1999	PONT	FIREBIRD	1	1	77	3%
1999	PONT	GRAND AM	8	8	520	3%
1999	PONT	GRAND PRIX	6	5	273	4%
1999	PONT	MONTANA	2	3	80	6%
1999	PONT	SUNFIRE	4	0	129	3%
1999	SAA	9/E	0	1	13	8%
1999	STRN	SC	1	0	78	1%
1999	STRN	SL	7	0	234	3%
1999	STRN	SW	2	0	19	11%
1999	SUBA	LEGACY	2	0	35	6%
1999	TOYT	4RUNNER	6	2	76	11%
1999	TOYT	AVALON	6	0	50	12%
1999	TOYT	CAMRY	32	17	397	12%
1999	TOYT	COROLLA	6	9	183	8%
1999	TOYT	RAV4	1	1	39	5%
1999	TOYT	SIENNA	8	0	57	14%
1999	TOYT	TACOMA	2	2	37	11%
1999	VOLK	BEETLE	2	0	43	5%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1999	VOLK	GOLF	1	0	5	20%
1999	VOLK	JETTA	4	0	100	4%
1999	VOLK	PASSAT	2	1	77	4%
1999	VOLV	C70	1	2	11	27%
1999	VOLV	S70	2	0	31	6%
1999	VOLV	S80	1	1	37	5%
1999	VOLV	V70	1	0	24	4%
1998			31	0	34	91%
1998	ACUR	2.3 CL	11	9	85	24%
1998	ACUR	2.5 TL	10	2	41	29%
1998	ACUR	3.0 CL	12	4	83	19%
1998	ACUR	3.2TL	11	10	82	26%
1998	ACUR	3.5RL	22	10	113	28%
1998	ACUR	INTEGRA	20	14	182	19%
1998	ACUR	SLX	3	0	14	21%
1998	AUDI	A4	23	7	153	20%
1998	AUDI	A8	1	0	3	33%
1998	AUDI	QUATTRO	23	6	103	28%
1998	BMW	318I	8	0	51	16%
1998	BMW	323IC	5	4	58	16%
1998	BMW	323IS	2	0	26	8%
1998	BMW	328I	20	11	122	25%
1998	BMW	528I	35	23	180	32%
1998	BMW	540I	3	0	42	7%
1998	BMW	740I	19	9	142	20%
1998	BMW	750IL	1	0	6	17%
1998	BMW	M3	6	3	58	16%
1998	BMW	Z3	7	12	105	18%
1998	BUIC	CENTURY	128	129	849	30%
1998	BUIC	LESABRE	102	95	705	28%
1998	BUIC	PARK AVENUE	35	38	248	29%
1998	BUIC	REGAL	62	65	392	32%
1998	BUIC	RIVIERA	7	0	59	12%
1998	BUIC	SKYLARK	20	0	127	16%
1998	CADI	CATERA	17	0	143	12%
1998	CADI	DEVILLE	70	85	634	24%
1998	CADI	ELDORADO	7	9	81	20%
1998	CADI	SEVILLE	28	24	179	29%
1998	CHEV	ASTRO VAN	63	3	427	15%
1998	CHEV	BLAZER	233	163	1414	28%
1998	CHEV	C1500	46	28	404	18%
1998	CHEV	C2500	6	0	15	40%
1998	CHEV	CAMARO	37	0	266	14%
1998	CHEV	CAVALIER	244	95	2034	17%
1998	CHEV	CORVETTE	6	17	177	13%
1998	CHEV	EXPRESS	13	0	56	23%
1998	CHEV	G10	6	1	37	19%
1998	CHEV	K1500	204	7	1376	15%
1998	CHEV	K2500	3	0	4	75%
1998	CHEV	K3500	2	0	2	100%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1998	CHEV	LUMINA	197	12	1388	15%
1998	CHEV	MALIBU	247	4	1451	17%
1998	CHEV	METRO	5	0	68	7%
1998	CHEV	MONTE CARLO	73	14	479	18%
1998	CHEV	PRIZM	26	0	256	10%
1998	CHEV	S10	163	48	1281	16%
1998	CHEV	SILVERADO	36	0	256	14%
1998	CHEV	SUBURBAN	28	7	175	20%
1998	CHEV	VENTURE	101	1	577	18%
1998	CHRY	CIRRUS	44	23	220	30%
1998	CHRY	CONCORDE	49	32	303	27%
1998	CHRY	INTREPID	3	0	9	33%
1998	CHRY	SEBRING	133	96	825	28%
1998	CHRY	TOWN & COUNTRY	78	60	391	35%
1998	DODG	AVENGER	40	33	295	25%
1998	DODG	CARAVAN	318	159	1758	27%
1998	DODG	DAKOTA	84	41	795	16%
1998	DODG	DURANGO	110	78	701	27%
1998	DODG	INTREPID	62	38	428	23%
1998	DODG	NEON	85	0	799	11%
1998	DODG	RAM 1500	191	130	1355	24%
1998	DODG	RAM VAN	12	3	111	14%
1998	DODG	RAM WAGON	2	0	21	10%
1998	DODG	STRATUS	86	60	636	23%
1998	EGIL	TALON	5	5	51	20%
1998	FORD	CLUB WAGON	1	0	6	17%
1998	FORD	CONTOUR	95	2	1194	8%
1998	FORD	CROWN VICTORIA	51	0	337	15%
1998	FORD	ECONOLINE	80	8	466	19%
1998	FORD	ESCORT	308	137	2487	18%
1998	FORD	EXPEDITION	163	28	961	20%
1998	FORD	EXPLORER	318	0	2591	12%
1998	FORD	F150	370	3	2266	16%
1998	FORD	F250	17	5	89	25%
1998	FORD	MUSTANG	135	18	981	16%
1998	FORD	RANGER	113	7	1675	7%
1998	FORD	TAURUS	230	1	2000	12%
1998	FORD	WINDSTAR	296	0	1907	16%
1998	GEO	TRACKER	6	0	80	8%
1998	GMC	C1500	5	0	14	36%
1998	GMC	JIMMY	76	68	512	28%
1998	GMC	K1500	19	14	103	32%
1998	GMC	SAFARI	54	1	313	18%
1998	GMC	SAVANA	30	11	238	17%
1998	GMC	SIERRA	61	2	435	14%
1998	GMC	SONOMA	68	15	503	17%
1998	GMC	YUKON	21	2	126	18%
1998	HOND	ACCORD	417	0	2372	18%
1998	HOND	CIVIC	267	182	1947	23%
1998	HOND	CR-V	113	93	549	38%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1998	HOND	ODYSSEY	18	14	104	31%
1998	HOND	PASSPORT	14	1	99	15%
1998	HOND	PRELUDE	5	0	85	6%
1998	HYUN	ACCENT	8	0	86	9%
1998	HYUN	ELANTRA	18	0	136	13%
1998	HYUN	SONATA	7	1	47	17%
1998	HYUN	TIBURON	1	1	39	5%
1998	INFI	I30	40	0	245	16%
1998	INFI	Q45	5	1	60	10%
1998	INFI	QX4	42	0	186	23%
1998	ISU	AMIGO	5	0	49	10%
1998	ISU	HOMBRE	1	0	16	6%
1998	ISU	OASIS	3	0	12	25%
1998	ISU	RODEO	42	0	242	17%
1998	ISU	TROOPER	8	0	74	11%
1998	JAGU	VDP	8	5	35	37%
1998	JAGU	XJ8	7	13	77	26%
1998	JAGU	XJR	1	0	6	17%
1998	JAGU	XK8	3	5	29	28%
1998	JEEP	CHEROKEE	306	239	2025	27%
1998	JEEP	GRAND CHEROKEE	57	48	376	28%
1998	JEEP	WRANGLER	16	34	519	10%
1998	KIA	SEPHIA	13	0	86	15%
1998	KIA	SPORTAGE	7	0	81	9%
1998	LEXS	ES 300	57	55	302	37%
1998	LEXS	GS 300	18	19	108	34%
1998	LEXS	GS 400	8	11	62	31%
1998	LEXS	LS 400	25	19	123	36%
1998	LEXS	LX 470	8	8	42	38%
1998	LEXS	SC 300	2	0	10	20%
1998	LEXS	SC 400	1	0	4	25%
1998	LINC	CONTINENTAL	37	26	269	23%
1998	LINC	MARK VIII	2	14	66	24%
1998	LINC	NAVIGATOR	58	4	294	21%
1998	LINC	TOWN CAR	73	75	529	28%
1998	LNDR	DISCOVERY	5	0	36	14%
1998	LNDR	RANGE ROVER	6	3	32	28%
1998	MAZD	626	103	0	762	14%
1998	MAZD	B2500	15	0	127	12%
1998	MAZD	B3000	1	0	35	3%
1998	MAZD	B4000	3	0	31	10%
1998	MAZD	MILLENIA	22	0	115	19%
1998	MAZD	MPV WAGON	17	5	54	41%
1998	MAZD	PROTEGE	55	3	406	14%
1998	MERC	GRAND MARQUIS	77	78	587	26%
1998	MERC	MOUNTAINEER	47	0	318	15%
1998	MERC	MYSTIQUE	36	0	362	10%
1998	MERC	SABLE	80	0	596	13%
1998	MERC	TRACER	29	1	213	14%
1998	MERC	VILLAGER	32	51	309	27%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1998	MERZ	230	29	7	133	27%
1998	MERZ	280	6	5	43	26%
1998	MERZ	320	20	25	156	29%
1998	MERZ	420	4	2	21	29%
1998	MERZ	500	6	10	53	30%
1998	MERZ	600	1	0	6	17%
1998	MERZ	C43	1	0	1	100%
1998	MERZ	CLK320	5	0	24	21%
1998	MERZ	E430	6	2	24	33%
1998	MERZ	ML320	23	19	173	24%
1998	MERZ	SLK230	10	3	59	22%
1998	MITS	3000	6	0	42	14%
1998	MITS	DIAMANTE	13	8	65	32%
1998	MITS	ECLIPSE	40	2	352	12%
1998	MITS	GALANT	21	0	170	12%
1998	MITS	MIRAGE	6	1	67	10%
1998	MITS	MONTERO	24	31	159	35%
1998	NISS	200SX	11	0	66	17%
1998	NISS	240SX	1	0	8	13%
1998	NISS	ALTIMA	117	0	789	15%
1998	NISS	FRONTIER	11	0	110	10%
1998	NISS	MAXIMA	97	0	569	17%
1998	NISS	PATHFINDER	56	0	325	17%
1998	NISS	QUEST	10	5	63	24%
1998	NISS	SENTRA	47	0	310	15%
1998	OLDS	ACHIEVA	16	0	151	11%
1998	OLDS	AURORA	28	0	208	13%
1998	OLDS	BRAVADA	37	32	244	28%
1998	OLDS	CUTLASS	71	35	401	26%
1998	OLDS	DELTA 88	46	42	409	22%
1998	OLDS	INTRIGUE	153	82	765	31%
1998	OLDS	LSS	3	4	35	20%
1998	OLDS	REGENCY	7	4	62	18%
1998	OLDS	SILHOUETTE	60	22	264	31%
1998	PLYM	BREEZE	47	13	334	18%
1998	PLYM	GRAND VOYAGER	55	37	332	28%
1998	PLYM	NEON	47	0	505	9%
1998	PLYM	VOYAGER	85	19	494	21%
1998	PONT	BONNEVILLE	65	5	429	16%
1998	PONT	FIREBIRD	23	1	194	12%
1998	PONT	GRAND AM	65	13	571	14%
1998	PONT	GRAND PRIX	172	81	970	26%
1998	PONT	MONTANA	70	0	332	21%
1998	PONT	SUNFIRE	94	62	705	22%
1998	PONT	TRANS SPORT	2	0	15	13%
1998	PORS	911	1	0	8	13%
1998	PORS	BOXSTER	3	0	36	8%
1998	SAA	900	5	4	42	21%
1998	SAA	9-3	2	0	2	100%
1998	STRN	SC	54	24	377	21%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1998	STRN	SL	178	122	1205	25%
1998	STRN	SW	8	15	128	18%
1998	SUBA	FORESTER	11	15	133	20%
1998	SUBA	IMPREZA	9	8	48	35%
1998	SUBA	LEGACY	21	45	236	28%
1998	SUZI	ESTEEM	5	0	26	19%
1998	SUZI	SIDEKICK	3	0	70	4%
1998	TOYT	4RUNNER	65	62	426	30%
1998	TOYT	AVALON	77	33	472	23%
1998	TOYT	CAMRY	434	354	2551	31%
1998	TOYT	CELICA	6	0	20	30%
1998	TOYT	COROLLA	164	35	1108	18%
1998	TOYT	LAND CRUISER	8	4	32	38%
1998	TOYT	RAV4	37	22	307	19%
1998	TOYT	SIENNA	98	83	466	39%
1998	TOYT	SUPRA	1	0	4	25%
1998	TOYT	T100	5	0	20	25%
1998	TOYT	TACOMA	35	13	264	18%
1998	TOYT	TERCEL	1	0	6	17%
1998	VOLK	BEETLE	9	0	120	8%
1998	VOLK	CABRIO	7	0	64	11%
1998	VOLK	GOLF	2	0	54	4%
1998	VOLK	GTI	2	0	17	12%
1998	VOLK	JETTA	25	0	209	12%
1998	VOLK	PASSAT	23	16	129	30%
1998	VOLV	850	18	0	73	25%
1998	VOLV	960	9	0	71	13%
1998	VOLV	C70	2	0	12	17%
1998	VOLV	S70	75	10	407	21%
1998	VOLV	V70	46	11	235	24%
1997			1	0	1	100%
1997	ACUR	2.2 CL	2	0	35	6%
1997	ACUR	3.2TL	1	0	15	7%
1997	ACUR	3.5RL	1	2	16	19%
1997	BMW	328i	1	0	31	3%
1997	BMW	528i	1	0	33	3%
1997	BMW	M3	0	1	10	10%
1997	BMW	Z3	1	0	21	5%
1997	BUIC	CENTURY	3	1	60	7%
1997	BUIC	LESABRE	5	0	191	3%
1997	BUIC	PARK AVENUE	3	2	65	8%
1997	BUIC	REGAL	0	1	27	4%
1997	BUIC	RIVIERA	0	1	17	6%
1997	BUIC	SKYLARK	2	0	63	3%
1997	CADI	CATERA	1	1	40	5%
1997	CADI	DEVILLE	3	0	128	2%
1997	CADI	SEVILLE	1	0	55	2%
1997	CHEV	ASTRO VAN	2	0	76	3%
1997	CHEV	BLAZER	0	1	248	0%
1997	CHEV	C1500	2	0	75	3%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1997	CHEV	C2500	1	0	6	17%
1997	CHEV	CAMARO	3	0	63	5%
1997	CHEV	CAVALIER	12	1	515	3%
1997	CHEV	G10	0	2	14	14%
1997	CHEV	K1500	9	0	200	5%
1997	CHEV	LUMINA	6	0	317	2%
1997	CHEV	MALIBU	2	0	167	1%
1997	CHEV	MONTE CARLO	1	0	121	1%
1997	CHEV	S10	4	0	197	2%
1997	CHEV	SILVERADO	2	0	41	5%
1997	CHEV	VENTURE	1	0	79	1%
1997	CHRY	CONCORDE	2	0	70	3%
1997	CHRY	LHS	2	0	47	4%
1997	CHRY	SEBRING	2	1	182	2%
1997	CHRY	TOWN & COUNTRY	4	0	84	5%
1997	DODG	AVENGER	1	0	72	1%
1997	DODG	B250	1	0	31	3%
1997	DODG	CARAVAN	7	0	325	2%
1997	DODG	DAKOTA	3	3	118	5%
1997	DODG	INTREPID	5	0	210	2%
1997	DODG	NEON	2	0	132	2%
1997	DODG	RAM 1500	1	0	230	0%
1997	DODG	STRATUS	1	1	114	2%
1997	FORD	CONTOUR	1	0	85	1%
1997	FORD	CROWN VICTORIA	1	0	82	1%
1997	FORD	ECONOLINE	3	0	57	5%
1997	FORD	ESCORT	7	0	348	2%
1997	FORD	EXPEDITION	6	2	162	5%
1997	FORD	EXPLORER	8	0	422	2%
1997	FORD	F150	10	1	483	2%
1997	FORD	F250	1	0	25	4%
1997	FORD	RANGER	6	0	253	2%
1997	FORD	TAURUS	8	1	544	2%
1997	FORD	THUNDERBIRD	4	0	74	5%
1997	FORD	WINDSTAR	1	0	41	2%
1997	GEO	METRO	1	1	57	4%
1997	GEO	PRIZM	1	1	57	4%
1997	GMC	C1500	1	0	7	14%
1997	GMC	JIMMY	2	1	87	3%
1997	GMC	K1500	0	1	31	3%
1997	GMC	SAFARI	1	0	63	2%
1997	GMC	SIERRA	2	0	62	3%
1997	GMC	YUKON	1	0	34	3%
1997	HOND	ACCORD	7	11	341	5%
1997	HOND	CIVIC	6	3	266	3%
1997	HOND	CR-V	3	2	49	10%
1997	HOND	ODYSSEY	0	1	22	5%
1997	INFI	I30	4	0	45	9%
1997	INFI	Q45	0	1	18	6%
1997	ISU	RODEO	1	0	36	3%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1997	ISU	TROOPER	1	0	5	20%
1997	JAGU	XK8	0	2	9	22%
1997	JEEP	CHEROKEE	8	6	363	4%
1997	JEEP	WRANGLER	0	2	147	1%
1997	LEXS	ES 300	2	5	52	13%
1997	LEXS	LS 400	1	1	10	20%
1997	LINC	TOWN CAR	5	0	130	4%
1997	MAZD	626	1	1	112	2%
1997	MAZD	MX5 MIATA	1	1	11	18%
1997	MAZD	PROTEGE	1	0	71	1%
1997	MERC	COUGAR	1	0	50	2%
1997	MERC	GRAND MARQUIS	6	0	140	4%
1997	MERC	MOUNTAINEER	2	0	75	3%
1997	MERC	TRACER	2	0	65	3%
1997	MERC	VILLAGER	1	0	85	1%
1997	MERZ	230	1	0	20	5%
1997	MERZ	320	1	0	36	3%
1997	MERZ	420	0	1	11	9%
1997	MERZ	500	2	0	9	22%
1997	MITS	MONTERO	1	0	26	4%
1997	NISS	ALTIMA	6	0	219	3%
1997	NISS	MAXIMA	3	1	141	3%
1997	NISS	QUEST	1	0	29	3%
1997	NISS	SENTRA	2	0	84	2%
1997	OLDS	ACHIEVA	1	0	6	17%
1997	OLDS	AURORA	1	0	48	2%
1997	OLDS	BRAVADA	1	0	53	2%
1997	OLDS	CUTLASS	1	0	112	1%
1997	OLDS	DELTA 88	4	0	62	6%
1997	OLDS	REGENCY	1	0	11	9%
1997	PLYM	VOYAGER	3	0	158	2%
1997	PONT	BONNEVILLE	1	0	116	1%
1997	PONT	FIREBIRD	2	0	50	4%
1997	PONT	GRAND AM	2	1	310	1%
1997	PONT	GRAND PRIX	8	3	286	4%
1997	PONT	MONTANA	1	0	20	5%
1997	PONT	SUNFIRE	3	0	195	2%
1997	STRN	SC	2	2	128	3%
1997	STRN	SL	2	1	316	1%
1997	STRN	SW	1	0	45	2%
1997	SUBA	LEGACY	1	0	37	3%
1997	TOYT	4RUNNER	5	3	61	13%
1997	TOYT	AVALON	3	4	59	12%
1997	TOYT	CAMRY	22	8	367	8%
1997	TOYT	CELICA	1	0	19	5%
1997	TOYT	COROLLA	2	5	158	4%
1997	TOYT	LAND CRUISER	0	1	12	8%
1997	TOYT	PREVIA	1	0	1	100%
1997	TOYT	TACOMA	2	0	37	5%
1997	VOLK	JETTA	1	2	61	5%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1997	VOLV	850	2	0	29	7%
1997	VOLV	960	1	1	12	17%
1997	VOLV	S70	1	0	23	4%
1996			20	0	26	77%
1996	ACUR	2.5 TL	18	0	110	16%
1996	ACUR	3.2TL	11	5	85	19%
1996	ACUR	3.5RL	11	5	95	17%
1996	ACUR	INTEGRA	26	9	210	17%
1996	ACUR	SLX	2	0	11	18%
1996	AUDI	A4	4	0	41	10%
1996	AUDI	A6	3	0	12	25%
1996	AUDI	CABRIOLET	2	0	8	25%
1996	AUDI	QUATTRO	2	0	54	4%
1996	BMW	318I	6	0	59	10%
1996	BMW	328I	12	0	145	8%
1996	BMW	740I	1	1	23	9%
1996	BMW	750IL	1	0	5	20%
1996	BMW	Z3	3	0	51	6%
1996	BUIC	CENTURY	48	0	538	9%
1996	BUIC	LESABRE	32	3	204	17%
1996	BUIC	PARK AVENUE	21	6	221	12%
1996	BUIC	REGAL	59	0	482	12%
1996	BUIC	RIVIERA	8	4	69	17%
1996	BUIC	ROADMASTER	14	0	132	11%
1996	BUIC	SKYLARK	29	1	249	12%
1996	CADI	CMRCL CHASSIS	1	0	3	33%
1996	CADI	DEVILLE	43	0	538	8%
1996	CADI	ELDORADO	9	0	81	11%
1996	CADI	FLEETWOOD	10	0	74	14%
1996	CADI	SEVILLE	18	3	192	11%
1996	CHEV	ASTRO VAN	39	0	229	17%
1996	CHEV	BERETTA	23	0	246	9%
1996	CHEV	BLAZER	161	0	1059	15%
1996	CHEV	C1500	36	8	379	12%
1996	CHEV	C2500	3	0	11	27%
1996	CHEV	CAMARO	14	0	229	6%
1996	CHEV	CAPRICE	39	0	358	11%
1996	CHEV	CAVALIER	134	4	1380	10%
1996	CHEV	CORSICA	102	0	1018	10%
1996	CHEV	CORVETTE	11	1	180	7%
1996	CHEV	EXPRESS	4	0	17	24%
1996	CHEV	G10	7	0	54	13%
1996	CHEV	K1500	108	2	895	12%
1996	CHEV	K2500	2	0	2	100%
1996	CHEV	K3500	1	0	1	100%
1996	CHEV	LUMINA	175	0	1303	13%
1996	CHEV	MONTE CARLO	48	0	401	12%
1996	CHEV	PRIZM	6	2	44	18%
1996	CHEV	S10	73	4	734	10%
1996	CHEV	SILVERADO	19	0	186	10%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1996	CHEV	SUBURBAN	33	1	240	14%
1996	CHEV	VENTURE	8	0	67	12%
1996	CHRY	CIRRUS	36	2	241	16%
1996	CHRY	CONCORDE	35	1	290	12%
1996	CHRY	LHS	23	0	188	12%
1996	CHRY	NEW YORKER	5	0	20	25%
1996	CHRY	SEBRING	59	27	540	16%
1996	CHRY	TOWN & COUNTRY	105	0	477	22%
1996	DODG	AVENGER	22	0	235	9%
1996	DODG	B150	1	0	12	8%
1996	DODG	B250	16	0	129	12%
1996	DODG	CARAVAN	194	0	1352	14%
1996	DODG	DAKOTA	25	13	467	8%
1996	DODG	INTREPID	94	0	746	13%
1996	DODG	NEON	39	0	457	9%
1996	DODG	RAM 1500	99	14	1178	10%
1996	DODG	RAM VAN	10	0	80	13%
1996	DODG	STRATUS	42	1	378	11%
1996	EGIL	TALON	5	0	68	7%
1996	EGIL	VISION	12	0	87	14%
1996	FORD	AEROSTAR	30	0	275	11%
1996	FORD	ASPIRE	5	0	72	7%
1996	FORD	BRONCO	7	0	139	5%
1996	FORD	CLUB WAGON	3	0	25	12%
1996	FORD	CONTOUR	31	0	579	5%
1996	FORD	CROWN VICTORIA	37	0	402	9%
1996	FORD	ECONOLINE	28	0	337	8%
1996	FORD	ESCORT	44	0	654	7%
1996	FORD	EXPLORER	165	0	1553	11%
1996	FORD	F150	136	0	1226	11%
1996	FORD	F250	1	0	9	11%
1996	FORD	MUSTANG	42	0	546	8%
1996	FORD	PROBE	12	0	142	8%
1996	FORD	RANGER	64	0	1211	5%
1996	FORD	TAURUS	143	0	1768	8%
1996	FORD	THUNDERBIRD	28	0	368	8%
1996	FORD	WINDSTAR	101	0	836	12%
1996	GEO	METRO	5	0	211	2%
1996	GEO	PRIZM	29	0	267	11%
1996	GEO	TRACKER	9	0	149	6%
1996	GMC	C1500	2	0	15	13%
1996	GMC	JIMMY	54	0	399	14%
1996	GMC	K1500	18	2	113	18%
1996	GMC	SAFARI	38	0	229	17%
1996	GMC	SAVANA	33	0	319	10%
1996	GMC	SIERRA	58	6	494	13%
1996	GMC	SONOMA	25	0	290	9%
1996	GMC	YUKON	11	0	135	8%
1996	HOND	ACCORD	285	118	1788	23%
1996	HOND	CIVIC	117	54	893	19%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1996	HOND	ODYSSEY	21	8	93	31%
1996	HOND	PASSPORT	5	0	51	10%
1996	HOND	PRELUDE	9	0	62	15%
1996	HYUN	ACCENT	5	0	81	6%
1996	HYUN	ELANTRA	4	0	51	8%
1996	HYUN	SONATA	4	0	17	24%
1996	INFI	G20	17	11	93	30%
1996	INFI	I30	38	0	238	16%
1996	INFI	J30	3	0	32	9%
1996	INFI	Q45	5	0	17	29%
1996	ISU	HOMBRE	0	1	16	6%
1996	ISU	OASIS	3	0	20	15%
1996	ISU	RODEO	23	0	122	19%
1996	ISU	TROOPER	11	0	64	17%
1996	JAGU	VDP	4	0	38	11%
1996	JAGU	XJ6	4	0	48	8%
1996	JEEP	CHEROKEE	242	235	2214	22%
1996	KIA	SPORTAGE	1	0	2	50%
1996	LEXS	ES 300	49	38	243	36%
1996	LEXS	GS 300	3	0	11	27%
1996	LEXS	LS 400	19	4	93	25%
1996	LEXS	SC 300	3	0	14	21%
1996	LEXS	SC 400	2	0	7	29%
1996	LINC	CONTINENTAL	7	0	94	7%
1996	LINC	MARK VIII	12	0	65	18%
1996	LINC	TOWN CAR	50	0	455	11%
1996	LNDR	DISCOVERY	6	0	62	10%
1996	LNDR	RANGE ROVER	1	0	13	8%
1996	MAZD	626	27	0	374	7%
1996	MAZD	B2300	8	0	100	8%
1996	MAZD	B3000	1	0	34	3%
1996	MAZD	B4000	1	0	25	4%
1996	MAZD	MILLENNIA	6	0	56	11%
1996	MAZD	MPV WAGON	6	11	40	43%
1996	MAZD	MX5 MIATA	15	9	99	24%
1996	MAZD	MX6	5	0	44	11%
1996	MAZD	PROTEGE	40	0	316	13%
1996	MERC	COUGAR	22	0	240	9%
1996	MERC	GRAND MARQUIS	78	1	679	12%
1996	MERC	MYSTIQUE	18	0	214	8%
1996	MERC	SABLE	57	0	666	9%
1996	MERC	TRACER	1	0	33	3%
1996	MERC	VILLAGER	46	0	349	13%
1996	MERZ	220	7	0	43	16%
1996	MERZ	280	1	0	31	3%
1996	MERZ	320	16	4	102	20%
1996	MERZ	420	1	0	6	17%
1996	MERZ	500	1	0	22	5%
1996	MITS	3000	3	0	32	9%
1996	MITS	ECLIPSE	17	1	200	9%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1996	MIT	GALANT	16	0	153	10%
1996	MIT	MIRAGE	3	0	25	12%
1996	MIT	MONTERO	6	0	32	19%
1996	NISS	200SX	9	3	74	16%
1996	NISS	ALTIMA	51	20	385	18%
1996	NISS	KING CAB	7	0	50	14%
1996	NISS	MAXIMA	110	0	817	13%
1996	NISS	PATHFINDER	16	0	174	9%
1996	NISS	QUEST	4	0	88	5%
1996	NISS	SENTRA	43	27	356	20%
1996	NISS	STANDARD	4	0	54	7%
1996	OLDS	98	8	1	78	12%
1996	OLDS	ACHIEVA	14	0	132	11%
1996	OLDS	ALERO	7	0	49	14%
1996	OLDS	AURORA	14	0	118	12%
1996	OLDS	BRAVADA	9	0	53	17%
1996	OLDS	CIERA	88	1	754	12%
1996	OLDS	CUTLASS	50	0	352	14%
1996	OLDS	DELTA 88	31	19	252	20%
1996	OLDS	LSS	9	0	75	12%
1996	PLYM	BREEZE	13	0	173	8%
1996	PLYM	NEON	16	0	364	4%
1996	PLYM	VOYAGER	102	0	617	17%
1996	PONT	BONNEVILLE	51	0	437	12%
1996	PONT	FIREBIRD	7	0	187	4%
1996	PONT	GRAND AM	92	0	871	11%
1996	PONT	GRAND PRIX	53	0	480	11%
1996	PONT	SUNFIRE	38	31	452	15%
1996	PONT	TRANS SPORT	4	0	52	8%
1996	PORS	911	1	0	30	3%
1996	SAA	900	7	0	62	11%
1996	STRN	SC	31	0	281	11%
1996	STRN	SL	139	0	1177	12%
1996	STRN	SW	15	0	100	15%
1996	SUBA	IMPREZA	4	0	27	15%
1996	SUBA	LEGACY	14	1	184	8%
1996	SUZI	SIDEKICK	1	1	43	5%
1996	TOYT	4RUNNER	22	23	156	29%
1996	TOYT	AVALON	70	15	361	24%
1996	TOYT	CAMRY	286	0	1892	15%
1996	TOYT	CELICA	7	1	64	13%
1996	TOYT	COROLLA	96	43	928	15%
1996	TOYT	LAND CRUISER	11	0	51	22%
1996	TOYT	PASEO	3	0	13	23%
1996	TOYT	PREVIA	4	0	20	20%
1996	TOYT	RAV4	10	12	128	17%
1996	TOYT	T100	6	8	61	23%
1996	TOYT	TACOMA	21	9	180	17%
1996	TOYT	TERCEL	14	1	122	12%
1996	VOLK	CABRIO	1	0	22	5%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1996	VOLK	GOLF	4	0	47	9%
1996	VOLK	JETTA	18	0	166	11%
1996	VOLK	PASSAT	4	0	37	11%
1996	VOLV	850	51	2	349	15%
1996	VOLV	850 R	1	0	7	14%
1996	VOLV	960	14	1	82	18%
1995	ACUR	INTEGRA	0	1	93	1%
1995	BMW	325I	1	1	27	7%
1995	BMW	525I	1	0	32	3%
1995	BUIC	CENTURY	3	3	112	5%
1995	BUIC	LESABRE	1	4	142	4%
1995	BUIC	PARK AVENUE	0	1	58	2%
1995	BUIC	REGAL	1	3	91	4%
1995	BUIC	RIVIERA	1	0	52	2%
1995	BUIC	ROADMASTER	1	2	21	14%
1995	BUIC	SKYLARK	1	0	44	2%
1995	CHEV	ASTRO VAN	1	0	111	1%
1995	CHEV	BERETTA	1	0	119	1%
1995	CHEV	C1500	3	1	100	4%
1995	CHEV	CAMARO	1	0	157	1%
1995	CHEV	CAPRICE	2	0	51	4%
1995	CHEV	CAVALIER	2	0	208	1%
1995	CHEV	CORSICA	1	0	175	1%
1995	CHEV	G20	1	0	47	2%
1995	CHEV	K1500	2	0	135	1%
1995	CHEV	K2500	0	1	8	13%
1995	CHEV	LUMINA	3	6	349	3%
1995	CHEV	LUMINA APV	1	0	38	3%
1995	CHEV	MONTE CARLO	2	0	138	1%
1995	CHEV	PRIZM	0	1	15	7%
1995	CHEV	S10	1	0	151	1%
1995	CHEV	SUBURBAN	2	0	55	4%
1995	DODG	AVENGER	1	1	64	3%
1995	DODG	CARAVAN	4	2	139	4%
1995	DODG	INTREPID	4	0	211	2%
1995	DODG	NEON	1	0	163	1%
1995	DODG	RAM 1500	1	0	141	1%
1995	DODG	STRATUS	0	1	51	2%
1995	EGIL	TALON	1	0	46	2%
1995	FORD	AEROSTAR	0	2	81	2%
1995	FORD	CONTOUR	3	0	156	2%
1995	FORD	ECONOLINE	2	1	77	4%
1995	FORD	ESCORT	3	7	338	3%
1995	FORD	EXPLORER	3	2	224	2%
1995	FORD	F150	6	4	348	3%
1995	FORD	MUSTANG	1	2	182	2%
1995	FORD	RANGER	1	1	159	1%
1995	FORD	TAURUS	4	1	417	1%
1995	FORD	WINDSTAR	2	2	190	2%
1995	GEO	METRO	1	1	47	4%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1995	GEO	PRIZM	1	0	68	1%
1995	GMC	SAFARI	1	0	98	1%
1995	GMC	SIERRA	2	1	101	3%
1995	GMC	SONOMA	1	0	50	2%
1995	HOND	ACCORD	11	3	298	5%
1995	HOND	CIVIC	4	6	272	4%
1995	HOND	ODYSSEY	1	2	40	8%
1995	HOND	PASSPORT	1	0	41	2%
1995	INFI	G20	3	0	37	8%
1995	INFI	Q45	1	0	6	17%
1995	ISU	RODEO	0	1	51	2%
1995	JEEP	CHEROKEE	2	5	350	2%
1995	LEXS	ES 300	0	2	43	5%
1995	LEXS	LS 400	0	1	16	6%
1995	LEXS	SC 400	0	2	9	22%
1995	LINC	CONTINENTAL	0	2	43	5%
1995	LINC	TOWN CAR	2	0	96	2%
1995	MAZD	626	1	0	142	1%
1995	MAZD	MILLENNIA	1	0	51	2%
1995	MAZD	MX5 MIATA	0	1	21	5%
1995	MERC	COUGAR	1	0	108	1%
1995	MERC	GRAND MARQUIS	3	2	98	5%
1995	MERC	MYSTIQUE	1	0	70	1%
1995	MERC	SABLE	1	0	86	1%
1995	MERC	TRACER	0	1	58	2%
1995	MERC	VILLAGER	1	2	66	5%
1995	MERZ	220	0	1	16	6%
1995	MITS	DIAMANTE	1	0	11	9%
1995	MITS	ECLIPSE	1	0	69	1%
1995	MITS	GALANT	1	0	77	1%
1995	NISS	ALTIMA	0	4	162	2%
1995	NISS	MAXIMA	2	2	166	2%
1995	NISS	PATHFINDER	1	0	49	2%
1995	NISS	STANDARD	0	1	12	8%
1995	OLDS	98	0	1	24	4%
1995	OLDS	ACHIEVA	1	0	37	3%
1995	OLDS	CIERA	0	3	169	2%
1995	OLDS	CUTLASS	0	2	141	1%
1995	OLDS	DELTA 88	1	0	71	1%
1995	OLDS	SILHOUETTE	1	0	13	8%
1995	PONT	BONNEVILLE	3	1	133	3%
1995	PONT	GRAND AM	1	0	338	0%
1995	PONT	GRAND PRIX	2	0	232	1%
1995	PONT	TRANS SPORT	2	0	31	6%
1995	STRN	SL	2	3	289	2%
1995	STRN	SW	0	1	20	5%
1995	TOYT	4RUNNER	1	2	44	7%
1995	TOYT	AVALON	2	1	56	5%
1995	TOYT	CAMRY	11	6	297	6%
1995	TOYT	COROLLA	3	4	168	4%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1995	TOYT	PREVIA	0	1	6	17%
1995	TOYT	T100	1	0	9	11%
1995	TOYT	TERCEL	1	1	35	6%
1995	VOLV	850	1	1	75	3%
1995	VOLV	960	2	0	14	14%
1994			6	0	7	86%
1994	ACUR	INTEGRA	27	22	293	17%
1994	ACUR	LEGEND	10	17	180	15%
1994	ACUR	VIGOR	4	2	38	16%
1994	AUDI	100	1	0	11	9%
1994	AUDI	90	1	0	6	17%
1994	AUDI	CABRIOLET	1	0	10	10%
1994	BMW	318I	1	2	56	5%
1994	BMW	318IC	1	0	10	10%
1994	BMW	325I	8	6	147	10%
1994	BMW	525I	3	3	41	15%
1994	BMW	530I	2	1	27	11%
1994	BMW	540I	3	0	19	16%
1994	BMW	740I	4	2	27	22%
1994	BUIC	CENTURY	54	51	605	17%
1994	BUIC	LESABRE	66	51	580	20%
1994	BUIC	PARK AVENUE	28	28	256	22%
1994	BUIC	REGAL	34	24	274	21%
1994	BUIC	ROADMASTER	27	23	209	24%
1994	BUIC	SKYLARK	9	5	219	6%
1994	CADI	CMRCL CHASSIS	1	0	1	100%
1994	CADI	DEVILLE	32	0	505	6%
1994	CADI	ELDORADO	4	0	90	4%
1994	CADI	FLEETWOOD	15	0	106	14%
1994	CADI	SEVILLE	7	1	149	5%
1994	CHEV	ASTRO VAN	26	2	340	8%
1994	CHEV	BERETTA	8	0	194	4%
1994	CHEV	BLAZER	31	1	495	6%
1994	CHEV	C10	1	0	27	4%
1994	CHEV	C1500	52	65	818	14%
1994	CHEV	C2500	2	0	38	5%
1994	CHEV	CAMARO	15	0	375	4%
1994	CHEV	CAPRICE	19	1	259	8%
1994	CHEV	CAVALIER	66	0	979	7%
1994	CHEV	CORSICA	41	0	571	7%
1994	CHEV	CORVETTE	9	0	143	6%
1994	CHEV	G20	4	0	100	4%
1994	CHEV	K1500	27	0	665	4%
1994	CHEV	K2500	2	0	69	3%
1994	CHEV	LUMINA	20	0	427	5%
1994	CHEV	LUMINA APV	9	7	94	17%
1994	CHEV	S10	33	41	619	12%
1994	CHEV	SUBURBAN	19	5	266	9%
1994	CHRY	CONCORDE	17	4	271	8%
1994	CHRY	LEBARON	27	0	302	9%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1994	CHRY	LHS	6	0	151	4%
1994	CHRY	NEW YORKER	4	0	90	4%
1994	CHRY	TOWN & COUNTRY	8	14	129	17%
1994	DODG	B150	3	0	38	8%
1994	DODG	B250	3	3	217	3%
1994	DODG	B350	1	0	6	17%
1994	DODG	CARAVAN	80	86	950	17%
1994	DODG	DAKOTA	11	5	452	4%
1994	DODG	INTREPID	28	13	470	9%
1994	DODG	RAM 1500	27	21	593	8%
1994	DODG	RAM 2500	1	0	27	4%
1994	DODG	RAM VAN	1	0	25	4%
1994	DODG	SHADOW	7	3	325	3%
1994	DODG	SPIRIT	11	1	250	5%
1994	DODG	STEALTH	2	2	44	9%
1994	EGIL	TALON	2	0	71	3%
1994	EGIL	VISION	4	0	66	6%
1994	FORD	AEROSTAR	7	39	353	13%
1994	FORD	ASPIRE	4	1	66	8%
1994	FORD	BRONCO	6	7	97	13%
1994	FORD	CLUB WAGON	3	3	53	11%
1994	FORD	CROWN VICTORIA	12	0	247	5%
1994	FORD	ECONOLINE	21	34	395	14%
1994	FORD	ESCORT	56	73	892	14%
1994	FORD	EXPLORER	55	109	1229	13%
1994	FORD	F150	103	153	1706	15%
1994	FORD	F250	1	1	15	13%
1994	FORD	MUSTANG	33	13	389	12%
1994	FORD	PROBE	9	0	216	4%
1994	FORD	RANGER	49	98	1382	11%
1994	FORD	TAURUS	65	103	1057	16%
1994	FORD	TEMPO	22	30	576	9%
1994	FORD	THUNDERBIRD	13	3	275	6%
1994	GEO	METRO	6	0	118	5%
1994	GEO	PRIZM	24	33	391	15%
1994	GEO	TRACKER	2	6	107	7%
1994	GMC	C1500	8	0	46	17%
1994	GMC	JIMMY	13	0	255	5%
1994	GMC	K1500	12	0	91	13%
1994	GMC	SAFARI	27	8	424	8%
1994	GMC	SIERRA	38	19	642	9%
1994	GMC	SONOMA	13	13	220	12%
1994	GMC	VANDURA	10	1	319	3%
1994	GMC	YUKON	2	0	48	4%
1994	HOND	ACCORD	209	89	1485	20%
1994	HOND	CIVIC	44	29	674	11%
1994	HOND	PASSPORT	3	1	37	11%
1994	HOND	PRELUDE	6	1	71	10%
1994	INFI	G20	5	10	64	23%
1994	INFI	J30	10	20	131	23%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1994	INFI	Q45	3	0	62	5%
1994	ISU	REGULAR CAB	1	0	29	3%
1994	ISU	RODEO	10	4	104	13%
1994	ISU	TROOPER	5	6	82	13%
1994	JAGU	VDP	1	0	15	7%
1994	JAGU	XJS	1	0	32	3%
1994	JEEP	CHEROKEE	77	0	1401	5%
1994	JEEP	WRANGLER	5	0	239	2%
1994	LEXS	ES 300	25	27	188	28%
1994	LEXS	GS 300	8	5	45	29%
1994	LEXS	LS 400	15	11	84	31%
1994	LEXS	SC 300	3	0	15	20%
1994	LEXS	SC 400	2	0	12	17%
1994	LINC	CONTINENTAL	10	6	131	12%
1994	LINC	MARK VIII	13	7	101	20%
1994	LINC	TOWN CAR	34	0	519	7%
1994	MAZD	323	0	1	21	5%
1994	MAZD	626	15	0	238	6%
1994	MAZD	929	1	0	25	4%
1994	MAZD	B2300	5	7	116	10%
1994	MAZD	B3000	1	5	104	6%
1994	MAZD	B4000	5	9	84	17%
1994	MAZD	MPV WAGON	1	4	45	11%
1994	MAZD	MX3	2	0	47	4%
1994	MAZD	MX5 MIATA	8	10	95	19%
1994	MAZD	MX6	2	0	59	3%
1994	MAZD	NAVAJO	1	0	17	6%
1994	MAZD	PROTEGE	14	0	291	5%
1994	MERC	COUGAR	15	13	295	9%
1994	MERC	GRAND MARQUIS	30	0	430	7%
1994	MERC	SABLE	19	29	274	18%
1994	MERC	TOPAZ	5	8	174	7%
1994	MERC	TRACER	6	13	117	16%
1994	MERC	VILLAGER	19	22	231	18%
1994	MERZ	220	3	0	12	25%
1994	MERZ	280	5	2	37	19%
1994	MERZ	320	7	4	102	11%
1994	MERZ	400	1	0	9	11%
1994	MERZ	500	1	0	17	6%
1994	MITS	3000	4	3	70	10%
1994	MITS	DIAMANTE	4	0	32	13%
1994	MITS	ECLIPSE	2	0	61	3%
1994	MITS	EXPO	1	0	22	5%
1994	MITS	GALANT	5	0	111	5%
1994	MITS	MIGHTY MAX	2	0	8	25%
1994	MITS	MIRAGE	1	0	25	4%
1994	MITS	MONTERO	4	0	27	15%
1994	NISS	300ZX	0	6	29	21%
1994	NISS	ALTIMA	27	0	465	6%
1994	NISS	KING CAB	3	6	63	14%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1994	NISS	MAXIMA	21	2	204	11%
1994	NISS	PATHFINDER	3	0	98	3%
1994	NISS	QUEST	8	11	87	22%
1994	NISS	SENTRA	28	2	362	8%
1994	NISS	STANDARD	4	9	72	18%
1994	OLDS	98	15	14	125	23%
1994	OLDS	ACHIEVA	8	1	109	8%
1994	OLDS	BRAVADA	4	0	45	9%
1994	OLDS	CUTLASS	89	86	1021	17%
1994	OLDS	DELTA 88	47	33	350	23%
1994	OLDS	SILHOUETTE	3	3	32	19%
1994	PLYM	ACCLAIM	8	0	183	4%
1994	PLYM	SUNDANCE	6	0	203	3%
1994	PLYM	VOYAGER	46	65	604	18%
1994	PONT	BONNEVILLE	41	5	346	13%
1994	PONT	FIREBIRD	10	0	199	5%
1994	PONT	GRAND AM	48	0	613	8%
1994	PONT	GRAND PRIX	31	0	423	7%
1994	PONT	SUNBIRD	13	0	246	5%
1994	PONT	TRANS SPORT	5	7	58	21%
1994	SAA	900	3	0	26	12%
1994	SAA	9000	1	0	3	33%
1994	STRN	SC	18	0	294	6%
1994	STRN	SL	39	0	812	5%
1994	STRN	SW	5	0	94	5%
1994	SUBA	IMPREZA	1	0	8	13%
1994	SUBA	LEGACY	5	7	73	16%
1994	TOYT	4RUNNER	8	7	116	13%
1994	TOYT	CAMRY	146	157	1371	22%
1994	TOYT	CELICA	22	14	206	17%
1994	TOYT	COROLLA	56	74	733	18%
1994	TOYT	DELUXE	5	9	155	9%
1994	TOYT	LAND CRUISER	5	6	49	22%
1994	TOYT	PASEO	0	1	33	3%
1994	TOYT	PREVIA	3	2	29	17%
1994	TOYT	SHORT BED	2	5	84	8%
1994	TOYT	T100	1	0	21	5%
1994	TOYT	TERCEL	11	0	178	6%
1994	VOLK	JETTA	2	0	50	4%
1994	VOLK	PASSAT	1	0	4	25%
1994	VOLV	850	31	31	223	28%
1994	VOLV	940	10	3	109	12%
1994	VOLV	960	7	0	36	19%
1993	ACUR	INTEGRA	1	0	31	3%
1993	ACUR	LEGEND	0	1	32	3%
1993	BUIC	LESABRE	2	2	89	4%
1993	BUIC	PARK AVENUE	1	0	42	2%
1993	BUIC	RIVIERA	1	0	4	25%
1993	BUIC	ROADMASTER	2	0	29	7%
1993	CADI	DEVILLE	2	0	128	2%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1993	CADI	SEVILLE	2	0	43	5%
1993	CHEV	CAVALIER	1	0	225	0%
1993	CHEV	CORSICA	1	0	98	1%
1993	CHEV	K1500	1	0	70	1%
1993	CHEV	LUMINA	1	0	219	0%
1993	DODG	CARAVAN	1	0	189	1%
1993	DODG	DAKOTA	1	0	97	1%
1993	DODG	STEALTH	1	0	22	5%
1993	FORD	ECONOLINE	0	1	76	1%
1993	FORD	ESCORT	3	0	268	1%
1993	FORD	F150	3	3	294	2%
1993	FORD	RANGER	2	1	221	1%
1993	FORD	TAURUS	3	4	305	2%
1993	FORD	TEMPO	0	1	227	0%
1993	FORD	THUNDERBIRD	1	0	97	1%
1993	GMC	SAFARI	2	0	54	4%
1993	GMC	VANDURA	1	0	47	2%
1993	HOND	ACCORD	3	0	255	1%
1993	HOND	CIVIC	1	1	151	1%
1993	HOND	PRELUDE	1	0	45	2%
1993	INFI	G20	1	0	31	3%
1993	INFI	Q45	1	0	6	17%
1993	JEEP	CHEROKEE	1	0	261	0%
1993	LEXS	SC 400	1	0	6	17%
1993	MAZD	B2600	0	1	6	17%
1993	MERC	GRAND MARQUIS	2	0	59	3%
1993	MERC	VILLAGER	2	1	70	4%
1993	OLDS	BRAVADA	1	0	11	9%
1993	OLDS	CUTLASS	1	0	204	0%
1993	PLYM	VOYAGER	0	1	109	1%
1993	PONT	BONNEVILLE	1	0	141	1%
1993	PONT	FIREBIRD	1	0	18	6%
1993	PONT	GRAND PRIX	1	0	107	1%
1993	STRN	SL	1	0	199	1%
1993	STRN	SW	1	0	17	6%
1993	TOYT	CAMRY	3	2	271	2%
1993	TOYT	COROLLA	2	0	143	1%
1993	TOYT	PREVIA	1	0	10	10%
1993	VOLV	240	1	0	13	8%
1993	VOLV	850	0	1	17	6%
1993	VOLV	940	3	1	22	18%
1992			3	0	7	43%
1992	ACUR	INTEGRA	4	4	126	6%
1992	ACUR	LEGEND	14	13	142	19%
1992	ACUR	VIGOR	3	0	61	5%
1992	AUDI	100	2	0	41	5%
1992	BMW	318i	3	0	20	15%
1992	BMW	325i	5	0	101	5%
1992	BMW	525i	5	0	65	8%
1992	BMW	535i	1	0	7	14%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1992	BMW	735I	2	0	11	18%
1992	BUIC	CENTURY	30	0	444	7%
1992	BUIC	LESABRE	31	0	537	6%
1992	BUIC	PARK AVENUE	15	0	216	7%
1992	BUIC	REGAL	10	0	253	4%
1992	BUIC	RIVIERA	6	0	59	10%
1992	BUIC	ROADMASTER	17	0	256	7%
1992	BUIC	SKYLARK	10	7	122	14%
1992	CADI	ALLANTE	1	0	5	20%
1992	CADI	BROUGHAM	6	0	55	11%
1992	CADI	DEVILLE	14	0	353	4%
1992	CADI	ELDORADO	8	0	104	8%
1992	CADI	FLEETWOOD	2	0	26	8%
1992	CADI	SEVILLE	5	0	106	5%
1992	CHEV	ASTRO VAN	3	0	234	1%
1992	CHEV	BERETTA	3	0	62	5%
1992	CHEV	BLAZER	10	4	320	4%
1992	CHEV	C10	3	0	35	9%
1992	CHEV	C1500	8	0	462	2%
1992	CHEV	CAMARO	4	0	195	2%
1992	CHEV	CAPRICE	7	0	160	4%
1992	CHEV	CAVALIER	30	0	647	5%
1992	CHEV	CORSICA	20	0	232	9%
1992	CHEV	CORVETTE	2	0	81	2%
1992	CHEV	G20	1	1	97	2%
1992	CHEV	G30	1	0	7	14%
1992	CHEV	K1500	6	0	308	2%
1992	CHEV	K2500	1	0	21	5%
1992	CHEV	LUMINA	43	0	643	7%
1992	CHEV	LUMINA APV	4	3	78	9%
1992	CHEV	S10	15	8	463	5%
1992	CHEV	SUBURBAN	5	0	88	6%
1992	CHRY	LEBARON	6	0	252	2%
1992	CHRY	NEW YORKER	7	0	204	3%
1992	DODG	B150	1	0	6	17%
1992	DODG	B250	1	7	105	8%
1992	DODG	CARAVAN	14	0	531	3%
1992	DODG	D-150	0	1	54	2%
1992	DODG	DAKOTA	8	1	498	2%
1992	DODG	DAYTONA	1	0	21	5%
1992	DODG	DYNASTY	12	0	215	6%
1992	DODG	RAM VAN	1	0	8	13%
1992	DODG	RAM WAGON	1	0	1	100%
1992	DODG	SHADOW	7	0	178	4%
1992	DODG	SPIRIT	5	0	200	3%
1992	DODG	W-150	1	0	29	3%
1992	FORD	AEROSTAR	11	11	202	11%
1992	FORD	BRONCO	2	2	61	7%
1992	FORD	CLUB WAGON	2	2	41	10%
1992	FORD	CROWN VICTORIA	17	0	257	7%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1992	FORD	ECONOLINE	15	19	259	13%
1992	FORD	ESCORT	15	1	370	4%
1992	FORD	EXPLORER	14	47	608	10%
1992	FORD	F150	35	42	1008	8%
1992	FORD	FESTIVA	3	0	30	10%
1992	FORD	MUSTANG	9	0	175	5%
1992	FORD	PROBE	2	6	74	11%
1992	FORD	RANGER	16	17	597	6%
1992	FORD	TAURUS	52	29	645	13%
1992	FORD	TEMPO	20	19	394	10%
1992	FORD	THUNDERBIRD	6	3	89	10%
1992	GEO	METRO	3	0	101	3%
1992	GEO	PRIZM	12	0	250	5%
1992	GMC	C1500	2	0	43	5%
1992	GMC	JIMMY	4	0	123	3%
1992	GMC	SAFARI	3	0	350	1%
1992	GMC	SIERRA	7	0	482	1%
1992	GMC	SONOMA	8	1	214	4%
1992	GMC	VANDURA	11	0	465	2%
1992	GMC	YUKON	0	1	20	5%
1992	HOND	ACCORD	116	1	1180	10%
1992	HOND	CIVIC	17	5	408	5%
1992	HOND	PRELUDE	14	0	121	12%
1992	HYUN	EXCEL	1	0	8	13%
1992	HYUN	SONATA	1	0	3	33%
1992	INFI	G20	1	0	58	2%
1992	INFI	Q45	2	0	32	6%
1992	ISU	REGULAR CAB	2	0	45	4%
1992	ISU	RODEO	1	0	56	2%
1992	ISU	TROOPER	1	1	29	7%
1992	JAGU	XJ6	2	0	23	9%
1992	JEEP	CHEROKEE	26	24	401	12%
1992	JEEP	WRANGLER	1	2	106	3%
1992	LEXS	ES 300	11	0	120	9%
1992	LEXS	LS 400	11	1	67	18%
1992	LEXS	SC 300	3	3	36	17%
1992	LEXS	SC 400	2	0	54	4%
1992	LINC	CONTINENTAL	3	8	65	17%
1992	LINC	MARK VII	2	0	17	12%
1992	LINC	TOWN CAR	19	0	346	5%
1992	MAZD	323	0	3	35	9%
1992	MAZD	626	6	4	57	18%
1992	MAZD	929	2	0	40	5%
1992	MAZD	B2200	1	0	54	2%
1992	MAZD	B2600	1	0	21	5%
1992	MAZD	MPV WAGON	3	4	49	14%
1992	MAZD	MX3	2	1	56	5%
1992	MAZD	MX6	2	0	10	20%
1992	MAZD	NAVAJO	1	0	11	9%
1992	MAZD	PROTEGE	3	0	136	2%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1992	MERC	COUGAR	7	6	135	10%
1992	MERC	GRAND MARQUIS	24	0	426	6%
1992	MERC	SABLE	23	13	302	12%
1992	MERC	TOPAZ	5	7	150	8%
1992	MERC	TRACER	3	4	32	22%
1992	MERZ	190	8	0	56	14%
1992	MERZ	300	3	2	46	11%
1992	MERZ	320	1	0	17	6%
1992	MERZ	400	3	1	27	15%
1992	MERZ	500	4	5	54	17%
1992	MITS	3000	1	0	31	3%
1992	MITS	DIAMANTE	2	0	26	8%
1992	MITS	ECLIPSE	2	0	43	5%
1992	MITS	EXPO	1	0	18	6%
1992	MITS	GALANT	1	0	20	5%
1992	MITS	MIRAGE	1	0	5	20%
1992	NISS	300ZX	1	0	11	9%
1992	NISS	KING CAB	0	2	19	11%
1992	NISS	MAXIMA	16	0	125	13%
1992	NISS	PATHFINDER	2	1	34	9%
1992	NISS	SENTRA	7	1	176	5%
1992	NISS	STANDARD	1	0	28	4%
1992	NISS	STANZA	2	0	86	2%
1992	OLDS	98	10	0	162	6%
1992	OLDS	ACHIEVA	4	0	84	5%
1992	OLDS	BRAVADA	2	0	28	7%
1992	OLDS	CUTLASS	49	0	757	6%
1992	OLDS	DELTA 88	26	0	375	7%
1992	OLDS	SILHOUETTE	1	1	26	8%
1992	OLDS	TORONADO	2	0	22	9%
1992	PLYM	ACCLAIM	7	0	165	4%
1992	PLYM	SUNDANCE	2	0	106	2%
1992	PLYM	VOYAGER	11	17	364	8%
1992	PONT	BONNEVILLE	35	0	386	9%
1992	PONT	FIREBIRD	4	0	81	5%
1992	PONT	GRAND AM	11	0	320	3%
1992	PONT	GRAND PRIX	9	0	196	5%
1992	PONT	SUNBIRD	7	0	142	5%
1992	PONT	TRANS SPORT	2	2	72	6%
1992	SAA	900	2	0	19	11%
1992	SAA	9000	3	0	13	23%
1992	STRN	SC	2	0	78	3%
1992	STRN	SL	15	0	354	4%
1992	SUBA	LEGACY	6	3	83	11%
1992	SUBA	LOYALE	2	0	21	10%
1992	SUBA	SVX	0	2	28	7%
1992	TOYT	4RUNNER	2	4	52	12%
1992	TOYT	CAMRY	104	4	1055	10%
1992	TOYT	CELICA	15	5	219	9%
1992	TOYT	COROLLA	29	0	584	5%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1992	TOYT	CRESSIDA	1	0	4	25%
1992	TOYT	DELUXE	5	3	100	8%
1992	TOYT	LAND CRUISER	3	0	22	14%
1992	TOYT	MR2	1	0	17	6%
1992	TOYT	PASEO	9	0	119	8%
1992	TOYT	PREVIA	6	5	132	8%
1992	TOYT	SHORT BED	1	2	48	6%
1992	TOYT	TERCEL	2	0	84	2%
1992	VOLK	GOLF	1	0	10	10%
1992	VOLK	JETTA	1	0	14	7%
1992	VOLV	240	6	0	67	9%
1992	VOLV	740	4	0	40	10%
1992	VOLV	940	8	0	81	10%
1992	VOLV	960	2	0	20	10%
1991	BUIC	CENTURY	1	0	73	1%
1991	BUIC	LESABRE	4	0	63	6%
1991	BUIC	REGAL	1	0	69	1%
1991	CHEV	BLAZER	1	0	77	1%
1991	CHEV	C2500	1	0	5	20%
1991	CHEV	CAVALIER	1	0	147	1%
1991	CHEV	CORSICA	3	0	87	3%
1991	CHEV	LUMINA	1	0	135	1%
1991	CHEV	S10	1	0	241	0%
1991	FORD	EXPLORER	0	1	157	1%
1991	FORD	F150	1	2	159	2%
1991	FORD	RANGER	2	0	149	1%
1991	GEO	STORM	1	0	17	6%
1991	HOND	CIVIC	1	0	140	1%
1991	ISU	TROOPER	1	0	11	9%
1991	MAZD	626	0	1	57	2%
1991	MERC	SABLE	1	0	35	3%
1991	NISS	MAXIMA	2	0	68	3%
1991	OLDS	CUTLASS	4	1	204	2%
1991	PLYM	VOYAGER	1	0	52	2%
1991	PONT	BONNEVILLE	1	0	39	3%
1991	PONT	GRAND AM	1	0	57	2%
1991	TOYT	CAMRY	1	0	226	0%
1991	TOYT	COROLLA	1	0	142	1%
1990			4	0	7	57%
1990	ACUR	INTEGRA	6	0	170	4%
1990	ACUR	LEGEND	6	1	76	9%
1990	AUDI	100	2	0	12	17%
1990	BMW	325I	7	5	69	17%
1990	BMW	525I	3	0	39	8%
1990	BMW	535I	1	3	22	18%
1990	BMW	735I	2	0	17	12%
1990	BUIC	CENTURY	6	0	256	2%
1990	BUIC	ELECTRA	11	1	111	11%
1990	BUIC	LESABRE	38	5	383	11%
1990	BUIC	REATT	2	0	25	8%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1990	BUIC	REGAL	1	0	76	1%
1990	BUIC	RIVIERA	8	0	56	14%
1990	BUIC	SKYLARK	6	0	99	6%
1990	CADI	BROUGHAM	3	0	90	3%
1990	CADI	DEVILLE	10	0	290	3%
1990	CADI	ELDORADO	2	0	34	6%
1990	CADI	FLEETWOOD	3	0	49	6%
1990	CADI	SEVILLE	3	0	49	6%
1990	CHEV	ASTRO VAN	5	0	132	4%
1990	CHEV	BERETTA	5	0	61	8%
1990	CHEV	C10	1	0	47	2%
1990	CHEV	C1500	11	0	448	2%
1990	CHEV	C2500	1	0	28	4%
1990	CHEV	CAPRICE	9	0	123	7%
1990	CHEV	CAVALIER	22	0	302	7%
1990	CHEV	CELEBRITY	5	0	74	7%
1990	CHEV	CORSICA	10	0	194	5%
1990	CHEV	CORVETTE	2	0	91	2%
1990	CHEV	G20	2	0	91	2%
1990	CHEV	K1500	5	0	248	2%
1990	CHEV	K2500	1	0	18	6%
1990	CHEV	LUMINA	19	0	381	5%
1990	CHEV	LUMINA APV	1	1	52	4%
1990	CHEV	S10	2	0	126	2%
1990	CHEV	SUBURBAN	1	0	136	1%
1990	CHRY	LEBARON	2	0	113	2%
1990	CHRY	T-C BY MASERATI	1	0	9	11%
1990	DODG	CARAVAN	6	1	261	3%
1990	DODG	D-150	5	0	129	4%
1990	DODG	DAKOTA	1	0	175	1%
1990	DODG	DYNASTY	5	0	199	3%
1990	DODG	MONACO	1	0	3	33%
1990	DODG	OMNI	1	0	22	5%
1990	DODG	SHADOW	1	0	45	2%
1990	FORD	AEROSTAR	2	0	114	2%
1990	FORD	BRONCO II	1	0	69	1%
1990	FORD	CROWN VICTORIA	3	0	110	3%
1990	FORD	ECONOLINE	6	0	143	4%
1990	FORD	F150	26	6	719	4%
1990	FORD	F250	1	0	21	5%
1990	FORD	FESTIVA	2	0	46	4%
1990	FORD	MUSTANG	4	0	243	2%
1990	FORD	PROBE	2	1	97	3%
1990	FORD	RANGER	3	2	398	1%
1990	FORD	TAURUS	12	1	310	4%
1990	FORD	TEMPO	7	0	271	3%
1990	FORD	THUNDERBIRD	1	1	77	3%
1990	GEO	PRIZM	14	0	256	5%
1990	GMC	C1500	1	0	12	8%
1990	GMC	JIMMY	1	0	39	3%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1990	GMC	R1500	1	0	41	2%
1990	GMC	SAFARI	8	0	142	6%
1990	GMC	SIERRA	5	1	296	2%
1990	GMC	SONOMA	0	2	24	8%
1990	GMC	VANDURA	9	0	265	3%
1990	HOND	ACCORD	48	0	674	7%
1990	HOND	CIVIC	10	0	335	3%
1990	HOND	PRELUDE	1	0	36	3%
1990	HYUN	SONATA	1	0	2	50%
1990	INFI	M30	1	0	7	14%
1990	JAGU	XJ6	4	0	15	27%
1990	JEEP	CHEROKEE	6	0	200	3%
1990	JEEP	COMANCHE	1	0	16	6%
1990	LEXS	ES 250	1	0	40	3%
1990	LEXS	LS 400	13	2	131	11%
1990	LINC	CONTINENTAL	3	0	76	4%
1990	LINC	MARK VII	1	0	33	3%
1990	LINC	TOWN CAR	15	0	261	6%
1990	MAZD	323	0	2	22	9%
1990	MAZD	626	9	4	91	14%
1990	MAZD	929	1	0	18	6%
1990	MAZD	MPV WAGON	4	1	28	18%
1990	MAZD	MX5 MIATA	7	4	230	5%
1990	MAZD	PROTEGE	1	0	50	2%
1990	MERC	GRAND MARQUIS	4	0	152	3%
1990	MERC	SABLE	1	1	90	2%
1990	MERC	TOPAZ	1	2	90	3%
1990	MERZ	300	6	0	81	7%
1990	MERZ	420	0	2	13	15%
1990	MERZ	560	2	2	10	40%
1990	MITS	ECLIPSE	1	0	41	2%
1990	MITS	MONTERO	1	0	15	7%
1990	NISS	240SX	4	0	75	5%
1990	NISS	MAXIMA	15	0	157	10%
1990	NISS	PATHFINDER	0	5	29	17%
1990	NISS	STANDARD	1	0	45	2%
1990	NISS	STANZA	2	0	46	4%
1990	OLDS	98	15	1	131	12%
1990	OLDS	CUTLASS	23	0	495	5%
1990	OLDS	DELTA 88	22	0	299	7%
1990	OLDS	SILHOUETTE	3	0	25	12%
1990	OLDS	TORONADO	2	0	17	12%
1990	PLYM	ARROW	1	0	24	4%
1990	PLYM	LASER	1	0	27	4%
1990	PLYM	SUNDANCE	1	0	31	3%
1990	PLYM	VOYAGER	2	0	159	1%
1990	PONT	6000	2	0	42	5%
1990	PONT	BONNEVILLE	17	0	121	14%
1990	PONT	GRAND AM	4	0	104	4%
1990	PONT	GRAND PRIX	4	0	82	5%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1990	PONT	LEMANS	1	0	4	25%
1990	PONT	SUNBIRD	3	0	72	4%
1990	PONT	TRANS SPORT	2	1	25	12%
1990	PORS	911	1	0	10	10%
1990	PORS	944	1	0	16	6%
1990	SAA	900	1	0	25	4%
1990	SUBA	LEGACY	3	0	52	6%
1990	SUBA	LOYALE	1	0	6	17%
1990	TOYT	4RUNNER	3	6	65	14%
1990	TOYT	CAMRY	34	0	673	5%
1990	TOYT	CELICA	9	0	186	5%
1990	TOYT	COROLLA	18	2	558	4%
1990	TOYT	CRESSIDA	2	0	10	20%
1990	TOYT	DELUXE	3	5	83	10%
1990	TOYT	SUPRA	1	0	20	5%
1990	VOLK	JETTA	1	0	15	7%
1990	VOLV	240	5	0	85	6%
1990	VOLV	740	11	0	145	8%
1990	VOLV	760	3	0	27	11%
1989	BMW	325I	0	1	24	4%
1989	BMW	525I	1	1	5	40%
1989	BUIC	CENTURY	1	0	54	2%
1989	BUIC	ELECTRA	3	0	36	8%
1989	BUIC	REGAL	1	0	26	4%
1989	BUIC	RIVIERA	0	1	8	13%
1989	CADI	BROUGHAM	2	0	27	7%
1989	CHEV	BLAZER	1	0	48	2%
1989	CHEV	CAPRICE	1	0	69	1%
1989	CHEV	CELEBRITY	4	0	69	6%
1989	CHEV	G20	1	0	14	7%
1989	CHEV	S10	1	0	87	1%
1989	DODG	CARAVAN	1	0	23	4%
1989	FORD	BRONCO II	1	0	47	2%
1989	FORD	ECONOLINE	1	0	40	3%
1989	GMC	R1500	1	0	14	7%
1989	HOND	ACCORD	2	0	129	2%
1989	JAGU	VDP	2	0	4	50%
1989	LINC	TOWN CAR	1	0	79	1%
1989	OLDS	98	1	0	43	2%
1989	PONT	BONNEVILLE	0	1	30	3%
1989	PONT	GRAND AM	1	0	30	3%
1989	TOYT	COROLLA	1	0	129	1%
1988			4	0	8	50%
1988	ACUR	INTEGRA	1	0	17	6%
1988	ACUR	LEGEND	2	0	53	4%
1988	BMW	325I	8	3	70	16%
1988	BMW	528I	2	1	23	13%
1988	BMW	535I	1	0	8	13%
1988	BUIC	CENTURY	2	0	90	2%
1988	BUIC	ELECTRA	13	2	127	12%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1988	BUIC	LESABRE	10	0	123	8%
1988	BUIC	REATA	1	1	17	12%
1988	BUIC	REGAL	4	0	79	5%
1988	CADI	BROUGHAM	1	0	58	2%
1988	CADI	DEVILLE	4	0	150	3%
1988	CADI	ELDORADO	1	0	37	3%
1988	CADI	FLEETWOOD	1	0	21	5%
1988	CADI	SEVILLE	1	0	28	4%
1988	CHEV	ASTRO VAN	4	0	109	4%
1988	CHEV	BERETTA	1	0	52	2%
1988	CHEV	BLAZER	2	0	135	1%
1988	CHEV	C10	3	0	122	2%
1988	CHEV	C1500	8	0	341	2%
1988	CHEV	C2500	2	0	43	5%
1988	CHEV	CAMARO	2	0	91	2%
1988	CHEV	CAPRICE	6	0	179	3%
1988	CHEV	CAVALIER	6	0	155	4%
1988	CHEV	CELEBRITY	10	0	260	4%
1988	CHEV	CORSICA	1	0	84	1%
1988	CHEV	CORVETTE	2	0	65	3%
1988	CHEV	G20	1	0	68	1%
1988	CHEV	K1500	3	0	159	2%
1988	CHEV	K2500	1	0	60	2%
1988	CHEV	NOVA	2	0	86	2%
1988	CHEV	S10	6	1	316	2%
1988	CHEV	SUBURBAN	1	0	71	1%
1988	CHRY	NEW YORKER	3	0	73	4%
1988	DODG	ARIES	1	0	65	2%
1988	DODG	B250	1	0	44	2%
1988	DODG	CARAVAN	2	1	89	3%
1988	DODG	D-150	2	0	38	5%
1988	DODG	DAKOTA	2	0	146	1%
1988	DODG	DAYTONA	1	0	26	4%
1988	DODG	DYNASTY	1	0	50	2%
1988	DODG	OMNI	1	0	38	3%
1988	FORD	BRONCO	1	0	38	3%
1988	FORD	BRONCO II	1	0	78	1%
1988	FORD	CROWN VICTORIA	3	0	162	2%
1988	FORD	ESCORT	1	0	136	1%
1988	FORD	F150	9	1	517	2%
1988	FORD	F250	3	0	48	6%
1988	FORD	FESTIVA	1	0	26	4%
1988	FORD	MUSTANG	4	0	197	2%
1988	FORD	RANGER	3	1	316	1%
1988	FORD	TAURUS	1	0	160	1%
1988	FORD	TEMPO	1	1	81	2%
1988	FORD	THUNDERBIRD	2	0	98	2%
1988	GMC	C1500	4	0	85	5%
1988	GMC	SIERRA	3	0	179	2%
1988	GMC	V1500	1	0	11	9%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1988	GMC	VANDURA	6	0	148	4%
1988	HOND	ACCORD	7	0	233	3%
1988	HOND	CIVIC	1	0	165	1%
1988	HOND	PRELUDE	1	0	25	4%
1988	ISU	TROOPER	1	0	11	9%
1988	JAGU	XJ6	3	0	17	18%
1988	JEEP	CHEROKEE	2	0	85	2%
1988	LINC	MARK VII	4	0	25	16%
1988	LINC	TOWN CAR	5	0	260	2%
1988	MAZD	626	3	0	49	6%
1988	MAZD	929	1	0	9	11%
1988	MAZD	MX6	1	0	27	4%
1988	MAZD	RX7	1	0	38	3%
1988	MERC	COUGAR	3	0	128	2%
1988	MERC	GRAND MARQUIS	6	0	185	3%
1988	MERC	TOPAZ	1	0	21	5%
1988	MERC	TRACER	1	0	24	4%
1988	MERK	SCORPIO	1	0	7	14%
1988	MERZ	560	3	8	71	15%
1988	NISS	200SX	1	0	4	25%
1988	NISS	720	0	1	17	6%
1988	NISS	MAXIMA	2	0	25	8%
1988	NISS	STANZA	1	0	10	10%
1988	OLDS	98	11	0	99	11%
1988	OLDS	CUTLASS	14	0	386	4%
1988	OLDS	DELTA 88	11	0	184	6%
1988	OLDS	TORONADO	1	0	25	4%
1988	PLYM	HORIZON	3	0	41	7%
1988	PLYM	RELIANT	2	0	114	2%
1988	PLYM	SUNDANCE	3	0	28	11%
1988	PLYM	VOYAGER	2	0	62	3%
1988	PONT	6000	2	0	34	6%
1988	PONT	BONNEVILLE	4	0	64	6%
1988	PONT	FIERO	1	0	23	4%
1988	PONT	GRAND AM	2	0	68	3%
1988	SAA	900	1	0	21	5%
1988	SUBA	DL	1	0	2	50%
1988	TOYT	1/2 TON	0	2	54	4%
1988	TOYT	4RUNNER	1	0	35	3%
1988	TOYT	CAMRY	17	0	305	6%
1988	TOYT	CELICA	3	0	79	4%
1988	TOYT	COROLLA	5	0	223	2%
1988	TOYT	CRESSIDA	1	0	8	13%
1988	TOYT	LAND CRUISER	1	0	7	14%
1988	TOYT	VAN WAGON	1	0	10	10%
1988	VOLV	240	4	0	69	6%
1988	VOLV	740	3	0	61	5%
1987	BMW	535I	1	0	6	17%
1987	FORD	CROWN VICTORIA	1	0	26	4%
1987	FORD	ESCORT	1	0	28	4%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1987	FORD	F150	0	1	112	1%
1987	NISS	MAXIMA	1	0	37	3%
1987	TOYT	CAMRY	1	0	68	1%
1986			1	0	9	11%
1986	AMER	ALLIANCE	1	0	3	33%
1986	AMER	CHEROKEE	1	0	25	4%
1986	AUDI	5000	1	0	3	33%
1986	BMW	528i	1	0	16	6%
1986	BUIC	CENTURY	1	0	75	1%
1986	BUIC	ELECTRA	3	0	52	6%
1986	BUIC	LESABRE	2	0	49	4%
1986	BUIC	REGAL	2	0	62	3%
1986	BUIC	SKYHAWK	1	0	20	5%
1986	CADI	CIMARRON	1	0	7	14%
1986	CADI	DEVILLE	1	0	94	1%
1986	CHEV	BLAZER	1	0	73	1%
1986	CHEV	C10	2	0	238	1%
1986	CHEV	CAMARO	3	0	84	4%
1986	CHEV	CAPRICE	3	0	162	2%
1986	CHEV	CAVALIER	2	0	71	3%
1986	CHEV	CELEBRITY	4	0	128	3%
1986	CHEV	EL CAMINO	1	0	33	3%
1986	CHEV	G20	1	0	57	2%
1986	CHEV	K10	1	0	62	2%
1986	CHEV	MONTE CARLO	1	0	105	1%
1986	CHEV	NOVA	2	0	37	5%
1986	CHEV	S10	1	0	84	1%
1986	DODG	D-100	1	0	36	3%
1986	FORD	BRONCO	1	0	45	2%
1986	FORD	CROWN VICTORIA	6	0	110	5%
1986	FORD	ECONOLINE	1	0	47	2%
1986	FORD	F150	6	0	432	1%
1986	FORD	LTD	1	0	24	4%
1986	FORD	MUSTANG	1	0	107	1%
1986	FORD	RANGER	1	0	123	1%
1986	GMC	C1500	1	0	69	1%
1986	GMC	JIMMY	1	0	14	7%
1986	GMC	K1500	1	0	41	2%
1986	HOND	ACCORD	2	0	82	2%
1986	HOND	CIVIC	2	0	45	4%
1986	JAGU	XJ6	1	0	16	6%
1986	LINC	CONTINENTAL	1	0	9	11%
1986	LINC	TOWN CAR	1	0	102	1%
1986	MAZD	626	0	2	15	13%
1986	MERC	COUGAR	1	0	45	2%
1986	MERC	GRAND MARQUIS	3	0	133	2%
1986	MERZ	300	1	0	37	3%
1986	MERZ	420	2	0	26	8%
1986	NISS	300ZX	2	0	47	4%
1986	OLDS	CUTLASS	6	0	256	2%

Appendix A3 - RapidScreen Coverage by Year, Make and Model

Model Year	Make	Model	RSD-2	Hybrid	Total	%RS
1986	OLDS	DELTA 88	4	0	113	4%
1986	PONT	6000	1	0	21	5%
1986	PONT	FIERO	1	0	41	2%
1986	PONT	FIREBIRD	1	0	55	2%
1986	PONT	PARISIENNE	3	0	49	6%
1986	PORS	911	1	1	29	7%
1986	PORS	928	1	0	4	25%
1986	PORS	944	1	0	31	3%
1986	TOYT	CAMRY	6	0	116	5%
1986	TOYT	CELICA	1	3	25	16%
1986	TOYT	COROLLA	1	0	78	1%
1986	TOYT	MR2	1	0	30	3%
1986	TOYT	SUPRA	2	0	22	9%
1986	TOYT	VAN WAGON	1	0	10	10%
1986	VOLV	240	1	0	63	2%
1986	VOLV	740	1	0	43	2%
1986	VOLV	760	1	0	8	13%
1985	CHEV	CAPRICE	1	0	36	3%
1984			3	0	7	43%
1984	BMW	633 CSI	2	0	2	100%
1984	BUIC	LESABRE	1	0	62	2%
1984	BUIC	REGAL	4	0	40	10%
1984	CADI	DEVILLE	2	0	46	4%
1984	CADI	SEVILLE	1	0	18	6%
1984	CHEV	CAMARO	1	0	53	2%
1984	CHEV	CAPRICE	1	0	135	1%
1984	CHEV	IMPALA	1	0	18	6%
1984	CHEV	MONTE CARLO	1	0	59	2%
1984	CHRY	FIFTH AVENUE	1	0	26	4%
1984	CHRY	LEBARON	1	0	18	6%
1984	DODG	B150	1	0	10	10%
1984	FORD	ESCORT	1	0	19	5%
1984	FORD	THUNDERBIRD	1	0	14	7%
1984	GMC	C1500	1	0	66	2%
1984	LEXS	OTHER	0	1	1	100%
1984	LINC	TOWN CAR	1	0	34	3%
1984	MERC	GRAND MARQUIS	1	0	115	1%
1984	OLDS	CUTLASS	5	0	156	3%
1984	OLDS	DELTA 88	3	0	122	2%
1984	PLYM	CARAVELLE	1	0	6	17%
1984	PONT	FIERO	1	0	33	3%
1984	PORS	944	1	0	32	3%
1984	VOLV	240	1	0	25	4%
1983	FORD	CROWN VICTORIA	1	0	4	25%
1982	CHRY	NEW YORKER	2	0	8	25%
1982	FORD	F150	2	0	83	2%
1982	OLDS	CUTLASS	1	0	28	4%
1982	PORS	911	2	0	16	13%

Appendix B – Emission Reductions

- **B1 – IM240 Tests**
 - **Station Based Tests**
 - **RapidScreen Audit Vehicles**
- **B2 – Enhanced Idle Tests**
 - **Station Based Tests**
 - **RapidScreen Audit Vehicles**
- **B3 – Basic Idle Tests**
 - **Station Based Tests**
 - **RapidScreen Audit Vehicles**
- **B4 – OBD I/M**
 - **Station Based Tests**
 - **RapidScreen Audit Vehicles**
- **B5 - Summary**

Appendix B Notes and Assumptions

Unresolved remaining in the area – Vehicles that do not complete an inspection cycle by passing the inspection or obtaining a waiver are termed “unresolved”. In Arizona and Colorado studies, some of these vehicles have been found continuing to operate in the I/M program area. In this report it has been assumed that one third of these vehicles continue to operate in the I/M area and two thirds are either scrapped or transfer out of the area.

Model Year/Type – Vehicles are grouped by model year and type. Type “P” are light duty passenger vehicles (LDGV) and type “T” are light duty trucks (LDGT). On pages showing results for Enhanced and Basic Idle tests, results for model year 1980 and older vehicles are included in the first section of the table along with the results for the 1981 model vehicles.

First Result – Last Result – The results of the first I/M test of the vehicle performed between January and December of the current year and the last I/M test of the vehicle performed between January of the current year and end February of the following year. The purpose of the later cutoff date for last tests is to limit the number of open repair and retest cycles.

Initial/Final HC/CO/NOx – Average tailpipe test emissions values. Tailpipe test results are in grams per mile for IM240 tests and in ppm HC and percent CO for idle tests.

The pass/fail/waiver result is the result for the whole I/M result including the gas cap pressure test. In instances where a vehicle initially fails the gas cap pressure test but is not a high tailpipe emitter, the tailpipe emissions recorded on the final test can be higher than the tailpipe emissions recorded on the initial test. Minor variations in test results on the same vehicle are normal and not significant provided the variation is small compared to the test standard.

Appendix B1 IM240 Test Emissions Reductions

Unresolved fails remaining in area					33%								
Model	First	Last	Vehicles		Initial			Final			Reduction %		
Year/Type	Result	Result			HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1981	Pass	-	42		0.45	5.40	1.21	0.45	5.40	1.21	0.0%	0.0%	0.0%
P	Fail	Pass	14	15.9%	2.27	41.97	2.09	0.42	6.10	1.32	81.4%	85.5%	37.1%
	Fail	Unresolv.	28	31.8%	4.17	67.63	1.96	1.48	21.49	0.69	64.6%	68.2%	64.7%
	Fail	Waiver	4	4.5%	4.96	95.41	1.07	3.56	62.30	1.14	28.3%	34.7%	-6.7%
Total	Fail%		88	52.3%	2.13	35.11	1.58	0.91	13.22	1.06	57.1%	62.4%	33.1%
1982	Pass	-	305		0.39	4.54	1.73	0.39	4.54	1.73	0.0%	0.0%	0.0%
P	Fail	Pass	126	23.8%	2.10	27.42	2.70	0.44	5.76	1.45	79.2%	79.0%	46.5%
	Fail	Unresolv.	77	14.5%	3.99	60.84	2.76	1.30	19.75	0.89	67.4%	67.5%	67.6%
	Fail	Waiver	22	4.2%	4.45	65.68	2.71	2.91	44.26	2.45	34.6%	32.6%	9.3%
Total	Fail%		530	42.5%	1.49	20.70	2.15	0.64	8.69	1.57	57.2%	58.0%	27.0%
1983	Pass	-	116		0.38	3.90	1.80	0.38	3.90	1.80	0.0%	0.0%	0.0%
P	Fail	Pass	60	23.6%	1.83	27.37	2.53	0.39	5.16	1.67	78.6%	81.2%	34.2%
	Fail	Unresolv.	71	28.0%	4.40	68.34	2.61	1.38	22.86	0.89	68.6%	66.5%	65.9%
	Fail	Waiver	7	2.8%	3.70	55.75	3.22	2.51	23.53	2.01	32.0%	57.8%	37.5%
Total	Fail%		254	54.3%	1.94	28.89	2.24	0.72	10.04	1.52	62.8%	65.2%	32.1%
1984	Pass	-	1,102		0.39	3.94	1.60	0.39	3.94	1.60	0.0%	0.0%	0.0%
P	Fail	Pass	344	19.8%	1.73	25.83	2.45	0.40	4.32	1.41	76.6%	83.3%	42.3%
	Fail	Unresolv.	240	13.8%	3.46	51.41	2.30	1.11	15.51	0.80	67.8%	69.8%	65.2%
	Fail	Waiver	54	3.1%	3.39	54.82	2.43	2.07	34.25	1.74	38.9%	37.5%	28.5%
Total	Fail%		1,740	36.7%	1.17	16.40	1.89	0.55	6.55	1.46	53.4%	60.0%	22.9%
1985	Pass	-	402		0.43	3.87	1.60	0.43	3.87	1.60	0.0%	0.0%	0.0%
P	Fail	Pass	135	18.3%	1.82	19.09	2.61	0.40	3.17	1.47	78.2%	83.4%	43.7%
	Fail	Unresolv.	176	23.9%	3.79	44.27	2.89	1.11	13.32	0.93	70.7%	69.9%	67.6%
	Fail	Waiver	23	3.1%	3.33	52.52	2.70	3.41	49.00	2.25	-2.3%	6.7%	16.7%
Total	Fail%		736	45.4%	1.58	17.85	2.13	0.68	7.41	1.44	57.0%	58.5%	32.5%
1986	Pass	-	2,334		0.38	3.24	1.45	0.38	3.24	1.45	0.0%	0.0%	0.0%
P	Fail	Pass	553	16.9%	1.86	23.29	2.43	0.41	3.29	1.57	78.0%	85.9%	35.4%
	Fail	Unresolv.	315	9.7%	2.88	35.74	2.73	0.94	11.58	0.91	67.5%	67.6%	66.7%
	Fail	Waiver	61	1.9%	5.05	51.09	2.41	2.48	34.62	1.83	50.9%	32.2%	24.1%
Total	Fail%		3,263	28.5%	0.96	10.67	1.76	0.47	4.64	1.43	50.4%	56.5%	18.9%
1987	Pass	-	789		0.39	3.30	1.52	0.39	3.30	1.52	0.0%	0.0%	0.0%
P	Fail	Pass	248	19.2%	1.97	25.55	2.51	0.42	3.84	1.54	78.8%	85.0%	38.5%
	Fail	Unresolv.	234	18.1%	3.09	36.75	2.65	1.08	12.05	0.88	65.1%	67.2%	66.7%
	Fail	Waiver	22	1.7%	2.98	45.96	2.72	2.80	46.34	2.15	6.0%	-0.8%	21.1%
Total	Fail%		1,293	39.0%	1.23	14.34	1.93	0.56	5.72	1.42	54.1%	60.2%	26.7%
1988	Pass	-	4,603		0.36	3.39	1.40	0.36	3.39	1.40	0.0%	0.0%	0.0%
P	Fail	Pass	862	14.6%	1.78	20.75	2.41	0.41	3.56	1.43	76.7%	82.9%	40.6%
	Fail	Unresolv.	371	6.3%	3.61	36.12	2.68	1.10	11.58	0.88	69.5%	67.9%	67.3%
	Fail	Waiver	79	1.3%	4.35	44.22	2.76	2.82	30.11	2.31	35.2%	31.9%	16.1%
Total	Fail%		5,915	22.2%	0.83	8.51	1.65	0.45	4.28	1.38	45.5%	49.7%	15.9%
1989	Pass	-	1,800		0.38	3.62	1.39	0.38	3.62	1.39	0.0%	0.0%	0.0%
P	Fail	Pass	400	15.8%	2.19	22.51	2.56	0.44	3.74	1.50	80.0%	83.4%	41.1%
	Fail	Unresolv.	305	12.1%	3.50	31.53	2.82	1.11	10.36	0.94	68.2%	67.1%	66.6%
	Fail	Waiver	22	0.9%	4.49	55.58	1.82	2.26	28.58	1.92	49.6%	48.6%	-5.6%
Total	Fail%		2,527	28.8%	1.08	10.43	1.75	0.49	4.67	1.36	54.1%	55.2%	22.4%
1990	Pass	-	8,284		0.36	3.65	1.48	0.36	3.65	1.48	0.0%	0.0%	0.0%
P	Fail	Pass	1,277	12.6%	1.91	23.94	2.53	0.41	3.71	1.55	78.5%	84.5%	38.7%
	Fail	Unresolv.	529	5.2%	3.58	36.90	2.71	1.07	11.99	0.89	70.1%	67.5%	67.1%
	Fail	Waiver	57	0.6%	3.58	42.95	3.04	2.23	29.67	2.26	37.6%	30.9%	25.7%
Total	Fail%		10,147	18.4%	0.74	8.16	1.68	0.42	4.24	1.46	44.0%	48.0%	13.2%
1991	Pass	-	2,998		0.37	3.87	1.51	0.37	3.87	1.51	0.0%	0.0%	0.0%
P	Fail	Pass	532	13.5%	1.82	24.39	2.57	0.41	3.86	1.53	77.5%	84.2%	40.5%
	Fail	Unresolv.	370	9.4%	3.11	30.01	2.88	1.03	10.04	0.94	67.0%	66.5%	67.2%
	Fail	Waiver	39	1.0%	3.91	38.61	3.06	2.21	28.22	2.23	43.5%	26.9%	27.3%
Total	Fail%		3,939	23.9%	0.86	9.44	1.80	0.46	4.69	1.46	46.8%	50.3%	18.4%
1992	Pass	-	13,398		0.36	3.80	1.50	0.36	3.80	1.50	0.0%	0.0%	0.0%
P	Fail	Pass	1,744	11.0%	1.82	26.19	2.31	0.40	3.87	1.43	78.1%	85.2%	38.3%
	Fail	Unresolv.	682	4.3%	3.26	31.61	2.60	1.04	10.38	0.85	68.2%	67.1%	67.2%
	Fail	Waiver	90	0.6%	3.95	43.47	2.13	2.44	28.04	1.60	38.3%	35.5%	25.0%
Total	Fail%		15,914	15.8%	0.66	7.67	1.64	0.41	4.23	1.46	39.0%	44.9%	10.7%

Appendix B1 IM240 Test Emissions Reductions

Unresolved fails remaining in area					33%								
Model	First	Last	Vehicles		Initial			Final			Reduction %		
Year/Type	Result	Result			HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1993	Pass	-	4,638		0.36	3.65	1.45	0.36	3.65	1.45	0.0%	0.0%	0.0%
P	Fail	Pass	683	11.9%	1.80	27.26	2.36	0.40	3.89	1.56	77.6%	85.7%	33.9%
	Fail	Unresolv.	361	6.3%	3.32	37.46	2.67	1.08	12.62	0.86	67.6%	66.3%	67.9%
	Fail	Waiver	35	0.6%	3.24	48.51	2.26	2.51	31.51	1.83	22.7%	35.0%	18.7%
Total	Fail%		5,717	18.9%	0.74	8.88	1.64	0.42	4.42	1.43	42.6%	50.3%	13.0%
1994	Pass	-	20,075		0.30	2.98	1.22	0.30	2.98	1.22	0.0%	0.0%	0.0%
P	Fail	Pass	1,563	7.0%	1.57	18.73	2.18	0.38	3.40	1.33	75.7%	81.9%	38.8%
	Fail	Unresolv.	531	2.4%	3.08	27.31	2.59	0.96	8.82	0.86	69.0%	67.7%	66.8%
	Fail	Waiver	72	0.3%	3.97	28.55	2.57	2.83	26.27	2.09	28.8%	8.0%	18.7%
Total	Fail%		22,241	9.7%	0.46	4.75	1.32	0.33	3.22	1.22	29.8%	32.1%	7.7%
1995	Pass	-	7,526		0.27	2.69	1.06	0.27	2.69	1.06	0.0%	0.0%	0.0%
P	Fail	Pass	636	7.5%	1.68	16.17	1.94	0.35	2.87	1.24	79.2%	82.2%	36.1%
	Fail	Unresolv.	311	3.7%	3.48	29.31	2.29	1.10	9.43	0.76	68.3%	67.8%	66.6%
	Fail	Waiver	23	0.3%	3.40	27.95	2.74	2.89	22.58	1.75	14.8%	19.2%	36.4%
Total	Fail%		8,496	11.4%	0.50	4.74	1.18	0.31	3.00	1.07	37.4%	36.7%	9.4%
1996	Pass	-	55		0.22	1.83	1.19	0.22	1.83	1.19	0.0%	0.0%	0.0%
P	Fail	Pass	6	9.8%	1.05	4.42	2.82	0.23	1.30	0.90	77.9%	70.6%	68.1%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		61	9.8%	0.31	2.08	1.35	0.23	1.78	1.16	26.3%	14.7%	14.1%
1997	Pass	-	36		0.11	1.27	0.61	0.11	1.27	0.61	0.0%	0.0%	0.0%
P	Fail	Pass	2	5.3%	7.58	112.64	2.16	0.04	0.83	0.53	99.5%	99.3%	75.6%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		38	5.3%	0.51	7.13	0.69	0.11	1.25	0.61	78.3%	82.5%	12.4%
1998	Pass	-	193		0.13	1.02	0.80	0.13	1.02	0.80	0.0%	0.0%	0.0%
P	Fail	Pass	3	1.5%	0.28	0.36	6.22	0.24	0.65	2.30	12.1%	-79.9%	63.1%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		196	1.5%	0.13	1.01	0.89	0.13	1.02	0.83	0.4%	-0.4%	6.8%
1999	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
P	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
2000	Pass	-	2		0.02	0.38	0.17	0.02	0.38	0.17	0.0%	0.0%	0.0%
P	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		2	0.0%	0.02	0.38	0.17	0.02	0.38	0.17	0.0%	0.0%	0.0%
2001	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
P	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
2002	Pass	-	1		0.05	0.45	0.01	0.05	0.45	0.01	0.0%	0.0%	0.0%
P	Fail	Pass	1	50.0%	0.00	0.09	0.02	0.01	0.34	0.00	-328.3%	-289.3%	76.5%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		2	50.0%	0.02	0.27	0.01	0.03	0.40	0.01	-10.3%	-47.1%	48.8%
2003	Pass	-	1		0.00	0.00	0.48	0.00	0.00	0.48	0.0%	0.0%	0.0%
P	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		1	0.0%	0.00	0.00	0.48	0.00	0.00	0.48	0.0%	0.0%	0.0%
2004	Pass	-	1		0.01	0.40	0.01	0.01	0.40	0.01	0.0%	0.0%	0.0%
P	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		1	0.0%	0.01	0.40	0.01	0.01	0.40	0.01	0.0%	0.0%	0.0%

Appendix B1 IM240 Test Emissions Reductions

Unresolved fails remaining in area					33%								
Model	First	Last	Vehicles		Initial			Final			Reduction %		
Year/Type	Result	Result			HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
2005	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
P	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
2006	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
P	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total Passenger Vehicles													
All	Pass	-	68,701		0.33	3.35	1.35	0.33	3.35	1.35	0.0%	0.0%	0.0%
P	Fail	Pass	9,189	11.1%	1.80	22.95	2.36	0.40	3.67	1.45	77.8%	84.0%	38.7%
	Fail	Unresolv.	4,601	5.5%	3.36	35.59	2.64	1.06	11.53	0.87	68.4%	67.6%	67.0%
	Fail	Waiver	610	0.7%	3.95	45.07	2.55	2.56	31.69	1.99	35.1%	29.7%	21.8%
Total	Fail%		83,101	17.3%	0.69	7.61	1.55	0.40	4.05	1.34	42.3%	46.8%	13.2%
1981	Pass	-	30		1.41	15.77	2.76	1.41	15.77	2.76	0.0%	0.0%	0.0%
T	Fail	Pass	8	16.7%	6.80	29.48	2.07	2.08	20.81	2.16	69.4%	29.4%	-4.4%
	Fail	Unresolv.	10	20.8%	15.67	53.97	3.47	5.15	16.88	1.19	67.2%	68.7%	65.7%
	Fail	Waiver	0	0.0%									
Total	Fail%		48	37.5%	5.28	26.01	2.80	2.30	16.84	2.34	56.5%	35.3%	16.5%
1982	Pass	-	256		1.42	15.13	2.89	1.42	15.13	2.89	0.0%	0.0%	0.0%
T	Fail	Pass	46	14.0%	4.25	57.36	2.94	1.58	24.09	2.44	62.8%	58.0%	17.1%
	Fail	Unresolv.	26	7.9%	7.62	82.40	2.17	2.63	27.71	0.71	65.5%	66.4%	67.2%
	Fail	Waiver	1	0.3%	5.24	91.58	1.86	4.73	127.40	1.01	9.8%	-39.1%	45.9%
Total	Fail%		329	22.2%	2.32	26.59	2.84	1.55	17.72	2.65	33.2%	33.3%	6.6%
1983	Pass	-	94		1.59	17.13	3.11	1.59	17.13	3.11	0.0%	0.0%	0.0%
T	Fail	Pass	19	15.7%	6.38	50.53	3.84	1.69	21.22	3.39	73.5%	58.0%	11.7%
	Fail	Unresolv.	7	5.8%	6.52	81.32	3.77	2.16	28.63	1.22	66.8%	64.8%	67.7%
	Fail	Waiver	1	0.8%	5.88	118.80	1.66	5.88	118.80	1.66	0.0%	0.0%	0.0%
Total	Fail%		121	22.3%	2.66	26.92	3.25	1.67	19.28	3.03	37.2%	28.4%	6.7%
1984	Pass	-	541		0.80	8.46	2.54	0.80	8.46	2.54	0.0%	0.0%	0.0%
T	Fail	Pass	190	22.3%	3.24	39.96	2.78	0.76	8.00	2.31	76.6%	80.0%	16.7%
	Fail	Unresolv.	106	12.4%	5.31	71.86	3.10	1.78	24.68	0.98	66.5%	65.7%	68.5%
	Fail	Waiver	15	1.8%	6.62	81.91	3.01	3.49	47.43	2.41	47.4%	42.1%	20.0%
Total	Fail%		852	36.5%	2.01	24.67	2.67	0.96	11.06	2.29	52.3%	55.1%	14.2%
1985	Pass	-	221		0.78	8.79	2.51	0.78	8.79	2.51	0.0%	0.0%	0.0%
T	Fail	Pass	74	19.2%	5.19	56.82	2.63	0.81	9.44	1.78	84.4%	83.4%	32.5%
	Fail	Unresolv.	85	22.0%	6.54	72.29	3.24	2.15	23.54	1.05	67.2%	67.4%	67.7%
	Fail	Waiver	6	1.6%	6.39	78.24	2.06	4.92	95.62	2.76	23.0%	-22.2%	-34.2%
Total	Fail%		386	42.7%	2.98	33.06	2.69	1.15	13.51	2.05	61.4%	59.1%	23.6%
1986	Pass	-	1,356		0.77	6.96	2.43	0.77	6.96	2.43	0.0%	0.0%	0.0%
T	Fail	Pass	319	17.3%	3.22	37.80	2.79	0.82	8.61	2.25	74.6%	77.2%	19.4%
	Fail	Unresolv.	143	7.8%	5.30	59.96	3.03	1.57	19.00	0.98	70.4%	68.3%	67.9%
	Fail	Waiver	21	1.1%	7.94	103.24	2.68	3.84	75.24	1.63	51.6%	27.1%	38.9%
Total	Fail%		1,839	26.3%	1.63	17.53	2.54	0.88	8.96	2.28	46.2%	48.9%	10.5%
1987	Pass	-	491		0.82	6.70	2.49	0.82	6.70	2.49	0.0%	0.0%	0.0%
T	Fail	Pass	109	16.2%	3.25	32.49	3.25	0.79	6.48	2.10	75.6%	80.0%	35.3%
	Fail	Unresolv.	65	9.7%	5.20	52.83	2.66	1.67	17.14	0.90	67.8%	67.6%	66.3%
	Fail	Waiver	7	1.0%	4.23	81.68	2.96	3.81	71.50	1.29	9.8%	12.5%	56.4%
Total	Fail%		672	26.9%	1.67	16.12	2.63	0.93	8.35	2.26	44.6%	48.2%	14.2%
1988	Pass	-	2,807		0.80	6.70	2.34	0.80	6.70	2.34	0.0%	0.0%	0.0%
T	Fail	Pass	443	12.9%	3.04	25.32	3.67	0.80	6.56	2.29	73.5%	74.1%	37.6%
	Fail	Unresolv.	164	4.8%	5.02	43.82	3.76	1.70	13.72	1.22	66.2%	68.7%	67.6%
	Fail	Waiver	12	0.4%	6.94	48.73	2.55	5.02	43.21	1.93	27.6%	11.3%	24.6%
Total	Fail%		3,426	18.1%	1.31	11.03	2.58	0.86	7.14	2.28	34.6%	35.2%	11.7%
1989	Pass	-	835		0.85	7.38	2.28	0.85	7.38	2.28	0.0%	0.0%	0.0%
T	Fail	Pass	182	16.4%	3.55	27.78	3.76	0.85	6.97	2.31	76.2%	74.9%	38.5%
	Fail	Unresolv.	90	8.1%	4.89	59.37	3.39	1.62	19.24	1.10	66.9%	67.6%	67.4%
	Fail	Waiver	6	0.5%	5.09	32.04	3.36	2.95	31.84	2.08	42.1%	0.6%	38.1%
Total	Fail%		1,113	25.0%	1.64	15.06	2.62	0.92	8.41	2.19	43.8%	44.2%	16.4%

Appendix B1 IM240 Test Emissions Reductions

Unresolved fails remaining in area					33%								
Model	First	Last	Vehicles		Initial			Final			Reduction %		
Year/Type	Result	Result			HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1990	Pass	-	3,826		0.78	6.51	2.32	0.78	6.51	2.32	0.0%	0.0%	0.0%
T	Fail	Pass	477	10.7%	2.90	30.34	3.56	0.81	6.19	2.38	72.1%	79.6%	33.1%
	Fail	Unresolv.	128	2.9%	5.06	47.69	3.49	1.62	15.78	1.13	68.0%	66.9%	67.6%
	Fail	Waiver	21	0.5%	6.86	66.26	3.61	4.89	62.06	1.83	28.7%	6.3%	49.3%
Total	Fail%		4,452	14.1%	1.16	10.53	2.50	0.82	7.00	2.29	28.8%	33.5%	8.1%
1991	Pass	-	1,346		0.75	6.86	2.09	0.75	6.86	2.09	0.0%	0.0%	0.0%
T	Fail	Pass	187	11.6%	3.33	33.53	2.70	0.80	6.83	1.92	76.0%	79.6%	28.9%
	Fail	Unresolv.	77	4.8%	6.14	55.77	3.30	1.93	17.25	1.14	68.6%	69.1%	65.5%
	Fail	Waiver	7	0.4%	6.72	107.18	3.00	3.94	64.44	2.53	41.4%	39.9%	15.8%
Total	Fail%		1,617	16.8%	1.33	12.71	2.22	0.82	7.60	2.03	38.1%	40.2%	8.8%
1992	Pass	-	6,621		0.78	6.96	2.28	0.78	6.96	2.28	0.0%	0.0%	0.0%
T	Fail	Pass	744	9.8%	2.82	28.70	3.17	0.86	7.05	2.16	69.3%	75.4%	32.0%
	Fail	Unresolv.	232	3.0%	5.17	47.80	3.56	1.66	15.73	1.18	68.0%	67.1%	67.0%
	Fail	Waiver	27	0.4%	7.01	59.17	2.71	4.28	41.90	1.88	38.9%	29.2%	30.6%
Total	Fail%		7,624	13.2%	1.13	10.51	2.41	0.82	7.36	2.23	27.1%	30.0%	7.2%
1993	Pass	-	2,108		0.75	6.51	2.30	0.75	6.51	2.30	0.0%	0.0%	0.0%
T	Fail	Pass	237	9.7%	2.71	27.08	3.20	0.89	6.80	2.20	67.0%	74.9%	31.3%
	Fail	Unresolv.	81	3.3%	5.38	44.73	2.90	1.80	13.94	1.01	66.6%	68.8%	65.2%
	Fail	Waiver	9	0.4%	6.67	62.46	2.06	5.60	63.37	2.13	16.0%	-1.4%	-3.2%
Total	Fail%		2,435	13.4%	1.12	9.99	2.40	0.82	7.00	2.25	26.8%	30.0%	6.6%
1994	Pass	-	11,974		0.72	6.21	2.07	0.72	6.21	2.07	0.0%	0.0%	0.0%
T	Fail	Pass	955	7.3%	2.60	22.47	3.31	0.79	6.05	2.04	69.5%	73.1%	38.5%
	Fail	Unresolv.	207	1.6%	4.77	32.60	3.92	1.61	11.18	1.22	66.2%	65.7%	68.8%
	Fail	Waiver	27	0.2%	4.97	28.28	3.75	3.35	25.36	2.89	32.7%	10.3%	23.0%
Total	Fail%		13,163	9.0%	0.93	7.85	2.19	0.75	6.32	2.05	19.8%	19.5%	6.2%
1995	Pass	-	2,969		0.67	6.34	2.05	0.67	6.34	2.05	0.0%	0.0%	0.0%
T	Fail	Pass	309	9.1%	2.90	24.94	3.22	0.74	6.48	1.93	74.5%	74.0%	40.0%
	Fail	Unresolv.	107	3.2%	4.53	31.61	4.24	1.39	10.40	1.36	69.3%	67.1%	67.9%
	Fail	Waiver	10	0.3%	7.54	34.35	2.30	3.92	26.74	1.75	48.0%	22.2%	24.0%
Total	Fail%		3,395	12.5%	1.01	8.91	2.23	0.71	6.54	2.02	30.3%	26.6%	9.4%
1996	Pass	-	2		0.36	4.61	1.84	0.36	4.61	1.84	0.0%	0.0%	0.0%
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		2	0.0%	0.36	4.61	1.84	0.36	4.61	1.84	0.0%	0.0%	0.0%
1997	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1998	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1999	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
2000	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
2001	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%

Appendix B1 IM240 Test Emissions Reductions

Unresolved fails remaining in area

					33%						Reduction %		
Model	First	Last			HC	Initial CO	NOX	HC	Final CO	NOX	HC	CO	NOX
Year/Type	Result	Result	Vehicles										
2002	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
2003	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
2004	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
2005	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
2006	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00			
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00			
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total Trucks													
All	Pass	-	35,477		0.76	6.69	2.21	0.76	6.69	2.21	0.0%	0.0%	0.0%
T	Fail	Pass	4,299	10.4%	2.99	29.12	3.25	0.83	7.07	2.17	72.3%	75.7%	33.4%
	Fail	Unresolv.	1,528	3.7%	5.31	50.26	3.45	1.72	16.41	1.12	67.6%	67.4%	67.5%
	Fail	Waiver	170	0.4%	6.52	63.73	2.95	4.14	51.35	2.09	36.6%	19.4%	29.1%
Total	Fail%		41,474	14.5%	1.18	10.85	2.37	0.81	7.27	2.17	31.0%	33.0%	8.5%
Fleet Total													
All	Pass	-	104,178		0.48	4.49	1.65	0.48	4.49	1.65	0.0%	0.0%	0.0%
All	Fail	Pass	13,488	10.8%	2.18	24.92	2.65	0.54	4.75	1.68	75.4%	80.9%	36.6%
	Fail	Unresolv.	6,129	4.9%	3.84	39.25	2.85	1.23	12.75	0.94	68.1%	67.5%	67.1%
	Fail	Waiver	780	0.6%	4.51	49.13	2.64	2.91	35.98	2.02	35.6%	26.8%	23.6%
Total	Fail%		124,575	16.4%	0.85	8.69	1.82	0.54	5.12	1.62	37.1%	41.1%	11.1%

Appendix B1 IM240 Test Emissions Reductions - RapidScreen Audit Vehicles

Unresolved fails remaining in area

33%

Model Year/Type	First Result	Last Result	Vehicles		Initial			Final			Reduction %		
					HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1981 P	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1982 P	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1983 P	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1984 P	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1985 P	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1986 P	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1987 P	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1988 P	Pass	-	3		0.09	1.77	0.82	0.09	1.77	0.82	0.0%	0.0%	0.0%
	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		3	0.0%	0.09	1.77	0.82	0.09	1.77	0.82	0.0%	0.0%	0.0%
1989 P	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1990 P	Pass	-	11		0.35	2.51	1.04	0.35	2.51	1.04	0.0%	0.0%	0.0%
	Fail	Pass	3	18.8%	0.98	6.32	4.43	0.13	0.27	2.54	86.6%	95.8%	42.6%
	Fail	Unresolv.	2	12.5%	1.21	7.43	3.40	0.40	2.45	1.12	67.0%	67.0%	67.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		16	31.3%	0.57	3.84	1.97	0.31	2.08	1.33	45.5%	45.8%	32.4%
1991 P	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1992 P	Pass	-	25		0.31	2.77	1.40	0.31	2.77	1.40	0.0%	0.0%	0.0%
	Fail	Pass	1	3.8%	0.79	5.31	2.60	0.31	7.00	1.85	60.3%	-31.8%	29.1%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		26	3.8%	0.32	2.87	1.44	0.31	2.93	1.41	5.6%	-2.3%	2.0%

Appendix B1 IM240 Test Emissions Reductions - RapidScreen Audit Vehicles

Unresolved fails remaining in area

33%

Model Year/Type	First Result	Last Result	Vehicles	Initial			Final			Reduction %		
				HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1993 P	Pass	-	1				0.08	2.14	0.78	0.08	2.14	0.78
	Fail	Pass	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Unresolv.	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Waiver	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
Total	Fail%		1	0.0%			0.08	2.14	0.78	0.08	2.14	0.78
1994 P	Pass	-	93				0.29	2.49	0.97	0.29	2.49	0.97
	Fail	Pass	1	1.1%			0.13	1.80	0.79	0.11	1.24	0.97
	Fail	Unresolv.	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Waiver	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
Total	Fail%		94	1.1%			0.29	2.48	0.97	0.29	2.48	0.97
1995 P	Pass	-	1				0.29	8.88	2.52	0.29	8.88	2.52
	Fail	Pass	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Unresolv.	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Waiver	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
Total	Fail%		1	0.0%			0.29	8.88	2.52	0.29	8.88	2.52
1996 P	Pass	-	0				0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Pass	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Unresolv.	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Waiver	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
Total	Fail%		0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
1997 P	Pass	-	0				0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Pass	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Unresolv.	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Waiver	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
Total	Fail%		0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
1998 P	Pass	-	0				0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Pass	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Unresolv.	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Waiver	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
Total	Fail%		0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
1999 P	Pass	-	0				0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Pass	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Unresolv.	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Waiver	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
Total	Fail%		0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
2000 P	Pass	-	0				0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Pass	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Unresolv.	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
	Fail	Waiver	0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
Total	Fail%		0	0.0%			0.00	0.00	0.00	0.00	0.00	0.00
2001 P	Pass	-	0				-	-	-	-	-	-
	Fail	Pass	0	-			-	-	-	-	-	-
	Fail	Unresolv.	0	-			-	-	-	-	-	-
	Fail	Waiver	0	-			-	-	-	-	-	-
Total	Fail%		0	-			-	-	-	-	-	-
2002 P	Pass	-	0				-	-	-	-	-	-
	Fail	Pass	0	-			-	-	-	-	-	-
	Fail	Unresolv.	0	-			-	-	-	-	-	-
	Fail	Waiver	0	-			-	-	-	-	-	-
Total	Fail%		0	-			-	-	-	-	-	-
2003 P	Pass	-	0				-	-	-	-	-	-
	Fail	Pass	0	-			-	-	-	-	-	-
	Fail	Unresolv.	0	-			-	-	-	-	-	-
	Fail	Waiver	0	-			-	-	-	-	-	-
Total	Fail%		0	-			-	-	-	-	-	-
2004 P	Pass	-	0				-	-	-	-	-	-
	Fail	Pass	0	-			-	-	-	-	-	-
	Fail	Unresolv.	0	-			-	-	-	-	-	-
	Fail	Waiver	0	-			-	-	-	-	-	-
Total	Fail%		0	-			-	-	-	-	-	-

Appendix B1 IM240 Test Emissions Reductions - RapidScreen Audit Vehicles

Unresolved fails remaining in area

33%

Model Year/Type	First Result	Last Result	Vehicles	Initial			Final			Reduction %		
				HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
2005 P	Pass	-	0	-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-
2006 P	Pass	-	0	-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-
Total Passenger Vehicles												
All	Pass	-	134									
P	Fail	Pass	5	3.5%								
	Fail	Unresolv.	2	1.4%								
	Fail	Waiver	0	0.0%								
Total	Fail%		141	5.0%								
1981 T	Pass	-	0									
	Fail	Pass	0	0.0%								
	Fail	Unresolv.	0	0.0%								
	Fail	Waiver	0	0.0%								
Total	Fail%		0	0.0%								
1982 T	Pass	-	0									
	Fail	Pass	0	0.0%								
	Fail	Unresolv.	0	0.0%								
	Fail	Waiver	0	0.0%								
Total	Fail%		0	0.0%								
1983 T	Pass	-	0									
	Fail	Pass	0	0.0%								
	Fail	Unresolv.	0	0.0%								
	Fail	Waiver	0	0.0%								
Total	Fail%		0	0.0%								
1984 T	Pass	-	0									
	Fail	Pass	0	0.0%								
	Fail	Unresolv.	0	0.0%								
	Fail	Waiver	0	0.0%								
Total	Fail%		0	0.0%								
1985 T	Pass	-	0									
	Fail	Pass	0	0.0%								
	Fail	Unresolv.	0	0.0%								
	Fail	Waiver	0	0.0%								
Total	Fail%		0	0.0%								
1986 T	Pass	-	0									
	Fail	Pass	0	0.0%								
	Fail	Unresolv.	0	0.0%								
	Fail	Waiver	0	0.0%								
Total	Fail%		0	0.0%								
1987 T	Pass	-	0									
	Fail	Pass	0	0.0%								
	Fail	Unresolv.	0	0.0%								
	Fail	Waiver	0	0.0%								
Total	Fail%		0	0.0%								
1988 T	Pass	-	2									
	Fail	Pass	1	33.3%								
	Fail	Unresolv.	0	0.0%								
	Fail	Waiver	0	0.0%								
Total	Fail%		3	33.3%								
1989 T	Pass	-	0									
	Fail	Pass	0	0.0%								
	Fail	Unresolv.	0	0.0%								
	Fail	Waiver	0	0.0%								
Total	Fail%		0	0.0%								

Appendix B1 IM240 Test Emissions Reductions - RapidScreen Audit Vehicles

Unresolved fails remaining in area					33%								
Model	First	Last			Initial			Final			Reduction %		
Year/Type	Result	Result	Vehicles		HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1990	Pass	-	2		1.22	13.30	2.54	1.22	13.30	2.54	0.0%	0.0%	0.0%
T	Fail	Pass	1	33.3%	3.47	15.97	2.73	1.28	3.13	1.06	63.2%	80.4%	61.3%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		3	33.3%	1.97	14.19	2.60	1.24	9.91	2.05	37.1%	30.2%	21.4%
1991	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1992	Pass	-	13		1.12	9.50	2.54	1.12	9.50	2.54	0.0%	0.0%	0.0%
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		13	0.0%	1.12	9.50	2.54	1.12	9.50	2.54	0.0%	0.0%	0.0%
1993	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1994	Pass	-	38		0.61	5.86	1.77	0.61	5.86	1.77	0.0%	0.0%	0.0%
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		38	0.0%	0.61	5.86	1.77	0.61	5.86	1.77	0.0%	0.0%	0.0%
1995	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1996	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1997	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1998	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
1999	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
2000	Pass	-	0		0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
T	Fail	Pass	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Unresolv.	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
Total	Fail%		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.0%	0.0%
2001	Pass	-	0		-	-	-	-	-	-	-	-	-
T	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-

Appendix B1 IM240 Test Emissions Reductions - RapidScreen Audit Vehicles

Unresolved fails remaining in area					33%								
Model	First	Last			Initial			Final			Reduction %		
Year/Type	Result	Result	Vehicles		HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
2002 T	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2003 T	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2004 T	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2005 T	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2006 T	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
Total Trucks													
All T	Pass	-	55		0.76	7.04	1.96	0.76	7.04	1.96	0.0%	0.0%	0.0%
	Fail	Pass	2	3.5%	1.91	8.89	1.82	0.84	1.95	1.01	55.9%	78.1%	44.6%
	Fail	Unresolv.	0	0.0%									
	Fail	Waiver	0	0.0%									
Total	Fail%		57	3.5%	0.80	7.10	1.96	0.76	6.86	1.93	4.7%	3.4%	1.5%
Fleet Total													
All All	Pass	-	189		0.43	3.87	1.32	0.43	3.87	1.32	0.0%	0.0%	0.0%
	Fail	Pass	7	3.5%	1.09	6.26	2.90	0.36	1.85	1.78	67.4%	70.5%	38.7%
	Fail	Unresolv.	2	1.0%	1.21	7.43	3.40	0.40	2.45	1.12	67.0%	67.0%	67.0%
	Fail	Waiver	0	0.0%									
Total	Fail%		198	4.5%	0.46	3.99	1.40	0.42	3.79	1.34	7.5%	5.2%	4.5%

Appendix B2 Enhanced Idle Test Emissions Reductions

Unresolved fails remaining in area

33%

Note: Models 1980 and older included in 1981

Model Year/Type	First Result	Last Result	Vehicles	Fail%	Initial			Final			Reduction %		
					HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1981 P	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	1	50.0%	9.00	-	-	22.00	-	-	-144.4%	-	-
	Fail	Unresolv.	1	50.0%	510.00	3.89	-	168.30	1.28	-	67.0%	67.0%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		2	100.0%	259.50	1.95	-	95.15	0.64	-	63.3%	67.0%	-
1982 P	Pass	-	7		89.71	0.32	-	89.71	0.32	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	7	50.0%	791.00	3.67	-	259.90	1.26	-	67.1%	65.7%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		14	50.0%	440.36	2.00	-	174.81	0.79	-	60.3%	60.4%	-
1983 P	Pass	-	9		111.67	0.40	-	111.67	0.40	-	-	-	-
	Fail	Pass	5	22.7%	98.80	1.38	-	101.40	1.38	-	-2.6%	-0.0%	-
	Fail	Unresolv.	8	36.4%	860.38	3.45	-	271.80	0.80	-	68.4%	76.8%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		22	59.1%	381.00	1.73	-	167.56	0.77	-	56.0%	55.5%	-
1984 P	Pass	-	34		62.76	0.08	-	62.76	0.08	-	-	-	-
	Fail	Pass	3	6.4%	119.00	0.23	-	110.00	0.14	-	7.6%	39.1%	-
	Fail	Unresolv.	10	21.3%	537.70	1.37	-	180.54	0.71	-	66.4%	47.8%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		47	27.7%	167.40	0.36	-	90.84	0.22	-	45.7%	40.2%	-
1985 P	Pass	-	13		101.46	0.15	-	101.46	0.15	-	-	-	-
	Fail	Pass	5	20.0%	150.80	0.19	-	76.00	0.23	-	49.6%	-20.6%	-
	Fail	Unresolv.	7	28.0%	412.00	1.99	-	190.13	0.65	-	53.9%	67.1%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		25	48.0%	198.28	0.67	-	121.20	0.31	-	38.9%	54.2%	-
1986 P	Pass	-	51		102.14	0.12	-	102.14	0.12	-	-	-	-
	Fail	Pass	4	6.7%	149.50	0.12	-	109.00	0.16	-	27.1%	-26.5%	-
	Fail	Unresolv.	5	8.3%	1,339.40	1.05	-	465.30	0.35	-	65.3%	66.4%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		60	15.0%	208.40	0.20	-	132.86	0.14	-	36.2%	28.5%	-
1987 P	Pass	-	15		80.27	0.16	-	80.27	0.16	-	-	-	-
	Fail	Pass	1	3.2%	324.00	8.41	-	45.00	-	-	86.1%	100.0%	-
	Fail	Unresolv.	15	48.4%	433.47	2.35	-	141.55	0.80	-	67.3%	66.2%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		31	51.6%	259.03	1.49	-	108.78	0.46	-	58.0%	68.9%	-
1988 P	Pass	-	49		110.86	0.15	-	110.86	0.15	-	-	-	-
	Fail	Pass	2	3.3%	460.50	0.82	-	212.50	0.34	-	53.9%	58.5%	-
	Fail	Unresolv.	10	16.4%	486.60	0.68	-	154.21	0.24	-	68.3%	65.0%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		61	19.7%	183.92	0.26	-	121.30	0.17	-	34.0%	34.2%	-
1989 P	Pass	-	24		89.08	0.17	-	89.08	0.17	-	-	-	-
	Fail	Pass	1	2.9%	70.00	0.27	-	36.00	-	-	48.6%	100.0%	-
	Fail	Unresolv.	9	26.5%	347.67	2.59	-	95.70	0.73	-	72.5%	71.7%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		34	29.4%	156.97	0.81	-	89.27	0.32	-	43.1%	61.2%	-
1990 P	Pass	-	67		84.37	0.15	-	84.37	0.15	-	-	-	-
	Fail	Pass	6	6.6%	653.83	0.43	-	59.50	0.40	-	90.9%	6.2%	-
	Fail	Unresolv.	18	19.8%	579.72	1.83	-	127.23	0.47	-	78.1%	74.5%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		91	26.4%	219.90	0.50	-	91.21	0.23	-	58.5%	54.0%	-
1991 P	Pass	-	36		92.72	0.20	-	92.72	0.20	-	-	-	-
	Fail	Pass	2	4.3%	231.00	0.14	-	94.50	0.08	-	59.1%	42.9%	-
	Fail	Unresolv.	9	19.1%	608.44	2.23	-	197.89	0.59	-	67.5%	73.4%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		47	23.4%	197.36	0.59	-	112.94	0.27	-	42.8%	53.6%	-
1992 P	Pass	-	157		81.63	0.13	-	81.63	0.13	-	-	-	-
	Fail	Pass	15	7.9%	404.67	2.01	-	178.20	0.47	-	56.0%	76.8%	-
	Fail	Unresolv.	18	9.5%	708.11	1.40	-	151.45	0.35	-	78.6%	74.6%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		190	17.4%	166.48	0.40	-	95.87	0.18	-	42.4%	55.2%	-

Appendix B2 Enhanced Idle Test Emissions Reductions

Unresolved fails remaining in area

33%

Note: Models 1980 and older included in 1981

Model Year/Type	First Result	Last Result	Vehicles	Fail%	Initial			Final			Reduction %		
					HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1993 P	Pass	-	75		90.20	0.16	-	90.20	0.16	-	-	-	-
	Fail	Pass	5	5.6%	650.80	2.20	-	335.20	0.64	-	48.5%	70.8%	-
	Fail	Unresolv.	10	11.1%	416.70	1.08	-	136.88	0.35	-	67.2%	67.3%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		90	16.7%	157.62	0.38	-	109.00	0.21	-	30.8%	44.4%	-
1994 P	Pass	-	312		84.99	0.15	-	84.99	0.15	-	-	-	-
	Fail	Pass	7	1.9%	329.29	1.80	-	114.14	0.22	-	65.3%	87.8%	-
	Fail	Unresolv.	48	13.1%	384.81	0.71	-	109.22	0.19	-	71.6%	73.7%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		367	15.0%	128.86	0.26	-	88.71	0.16	-	31.2%	38.5%	-
1995 P	Pass	-	96		82.96	0.15	-	82.96	0.15	-	-	-	-
	Fail	Pass	6	5.2%	459.17	3.83	-	151.00	0.96	-	67.1%	75.0%	-
	Fail	Unresolv.	14	12.1%	703.71	1.46	-	173.18	0.35	-	75.4%	75.7%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		116	17.2%	177.34	0.50	-	97.37	0.22	-	45.1%	56.7%	-
1996 P	Pass	-	3		72.33	0.17	-	72.33	0.17	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		3	-	72.33	0.17	-	72.33	0.17	-	-	-	-
1997 P	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
1998 P	Pass	-	7		21.14	0.00	-	21.14	0.00	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		7	-	21.14	0.00	-	21.14	0.00	-	-	-	-
1999 P	Pass	-	2		147.00	0.64	-	147.00	0.64	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		2	-	147.00	0.64	-	147.00	0.64	-	-	-	-
2000 P	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2001 P	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2002 P	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2003 P	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	4	100.0%	2,717.00	3.65	-	681.12	0.07	-	74.9%	98.0%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		4	100.0%	2,717.00	3.65	-	681.12	0.07	-	74.9%	98.0%	-
2004 P	Pass	-	2		394.00	0.47	-	394.00	0.47	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	4	66.7%	586.75	0.61	-	196.60	0.22	-	66.5%	64.5%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		6	66.7%	522.50	0.57	-	262.40	0.30	-	49.8%	46.6%	-

Appendix B2 Enhanced Idle Test Emissions Reductions

Unresolved fails remaining in area

33%

Note: Models 1980 and older included in 1981

Model Year/Type	First Result	Last Result	Vehicles	Fail%	Initial			Final			Reduction %		
					HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
2005	Pass	-	1	-	26.00	-	-	26.00	-	-	-	-	-
P	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		1	-	26.00	-	-	26.00	-	-	-	-	-
2006	Pass	-	0	-	-	-	-	-	-	-	-	-	-
P	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
Total Passenger Vehicles													
All	Pass	-	960		87.08	0.15	0.00	87.08	0.15	0.00	0.0%	0.0%	-
P	Fail	Pass	63	5.2%	353.90	1.57	0.00	139.38	0.47	0.00	60.6%	69.8%	-
	Fail	Unresolv.	197	16.1%	592.62	1.60	0.00	170.03	0.46	0.00	71.3%	71.6%	-
	Fail	Waiver	0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-
Total	Fail%		1,220	21.3%	182.49	0.46	0.00	103.17	0.22	0.00	43.5%	52.8%	-
1981	Pass	-	5		102.80	0.79	-	102.80	0.79	-	-	-	-
T	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	4	44.4%	778.00	3.61	-	247.75	0.77	-	68.2%	78.8%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		9	44.4%	402.89	2.05	-	167.22	0.78	-	58.5%	61.8%	-
1982	Pass	-	11		97.00	0.13	-	97.00	0.13	-	-	-	-
T	Fail	Pass	2	6.7%	529.00	5.15	-	28.50	0.28	-	94.6%	94.7%	-
	Fail	Unresolv.	17	56.7%	544.24	1.42	-	188.18	0.39	-	65.4%	72.6%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		30	63.3%	379.23	1.20	-	144.10	0.29	-	62.0%	76.0%	-
1983	Pass	-	1		216.00	0.12	-	216.00	0.12	-	-	-	-
T	Fail	Pass	4	57.1%	411.50	0.98	-	85.25	0.20	-	79.3%	79.5%	-
	Fail	Unresolv.	2	28.6%	870.50	4.01	-	287.27	1.32	-	67.0%	67.0%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		7	85.7%	514.71	1.72	-	161.65	0.51	-	68.6%	70.4%	-
1984	Pass	-	35		105.23	0.24	-	105.23	0.24	-	-	-	-
T	Fail	Pass	6	8.1%	392.17	1.13	-	79.17	0.00	-	79.8%	99.9%	-
	Fail	Unresolv.	33	44.6%	692.06	1.68	-	285.10	0.51	-	58.8%	69.5%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		74	52.7%	390.19	0.96	-	183.33	0.34	-	53.0%	64.0%	-
1985	Pass	-	12		109.17	0.09	-	109.17	0.09	-	-	-	-
T	Fail	Pass	7	19.4%	674.57	1.88	-	155.14	1.12	-	77.0%	40.4%	-
	Fail	Unresolv.	17	47.2%	643.06	2.38	-	173.44	0.50	-	73.0%	79.0%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		36	66.7%	471.22	1.52	-	148.46	0.48	-	68.5%	68.2%	-
1986	Pass	-	42		108.64	0.24	-	108.64	0.24	-	-	-	-
T	Fail	Pass	11	12.9%	917.00	1.94	-	96.09	0.25	-	89.5%	87.3%	-
	Fail	Unresolv.	32	37.6%	712.81	1.90	-	237.70	0.60	-	66.7%	68.2%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		85	50.6%	440.71	1.08	-	155.61	0.38	-	64.7%	65.2%	-
1987	Pass	-	24		129.21	0.20	-	129.21	0.20	-	-	-	-
T	Fail	Pass	4	10.8%	49.00	0.26	-	50.50	0.02	-	-3.1%	91.5%	-
	Fail	Unresolv.	9	24.3%	1,137.56	1.13	-	367.47	0.36	-	67.7%	68.0%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		37	35.1%	365.81	0.43	-	178.66	0.22	-	51.2%	49.0%	-
1988	Pass	-	105		109.48	0.20	-	109.48	0.20	-	-	-	-
T	Fail	Pass	10	7.2%	350.00	0.98	-	114.40	0.24	-	67.3%	75.4%	-
	Fail	Unresolv.	23	16.7%	552.48	1.12	-	172.49	0.35	-	68.8%	68.8%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		138	23.9%	200.74	0.41	-	120.34	0.23	-	40.1%	44.4%	-
1989	Pass	-	39		98.23	0.20	-	98.23	0.20	-	-	-	-
T	Fail	Pass	2	3.4%	78.50	0.79	-	40.50	0.12	-	48.4%	85.4%	-
	Fail	Unresolv.	17	29.3%	497.47	3.54	-	155.29	0.95	-	68.8%	73.3%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		58	32.8%	214.57	1.20	-	112.97	0.42	-	47.4%	65.2%	-

Appendix B2 Enhanced Idle Test Emissions Reductions

Unresolved fails remaining in area

33%

Note: Models 1980 and older included in 1981

Model Year/Type	First Result	Last Result	Vehicles	Fail%	Initial			Final			Reduction %		
					HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1990 T	Pass	-	96		99.66	0.22	-	99.66	0.22	-	-	-	-
	Fail	Pass	4	3.2%	439.25	2.15	-	253.25	0.59	-	42.3%	72.3%	-
	Fail	Unresolv.	25	20.0%	522.28	1.57	-	159.87	0.46	-	69.4%	70.6%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		125	23.2%	195.05	0.55	-	116.61	0.28	-	40.2%	49.2%	-
1991 T	Pass	-	47		105.17	0.35	-	105.17	0.35	-	-	-	-
	Fail	Pass	5	7.2%	455.00	1.50	-	81.60	0.05	-	82.1%	96.4%	-
	Fail	Unresolv.	17	24.6%	832.59	2.91	-	252.72	0.77	-	69.6%	73.6%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		69	31.9%	309.74	1.07	-	139.82	0.43	-	54.9%	59.4%	-
1992 T	Pass	-	143		96.46	0.17	-	96.46	0.17	-	-	-	-
	Fail	Pass	12	6.2%	278.83	1.84	-	166.75	0.37	-	40.2%	80.2%	-
	Fail	Unresolv.	39	20.1%	447.51	1.37	-	125.39	0.39	-	72.0%	71.1%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		194	26.3%	178.31	0.51	-	106.63	0.23	-	40.2%	55.7%	-
1993 T	Pass	-	37		100.41	0.22	-	100.41	0.22	-	-	-	-
	Fail	Pass	3	6.5%	267.67	0.49	-	148.00	0.30	-	44.7%	39.5%	-
	Fail	Unresolv.	6	13.0%	385.00	1.37	-	114.40	0.42	-	70.3%	69.1%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		46	19.6%	148.43	0.39	-	105.33	0.25	-	29.0%	35.2%	-
1994 T	Pass	-	164		106.88	0.27	-	106.88	0.27	-	-	-	-
	Fail	Pass	10	5.1%	545.90	1.69	-	402.50	0.72	-	26.3%	57.3%	-
	Fail	Unresolv.	23	11.7%	577.57	1.51	-	208.12	0.44	-	64.0%	70.6%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		197	16.8%	184.12	0.49	-	133.70	0.32	-	27.4%	35.5%	-
1995 T	Pass	-	41		95.34	0.29	-	95.34	0.29	-	-	-	-
	Fail	Pass	5	10.4%	417.20	0.55	-	67.20	0.23	-	83.9%	58.2%	-
	Fail	Unresolv.	2	4.2%	375.00	0.69	-	123.42	0.22	-	67.1%	67.5%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		48	14.6%	140.52	0.33	-	93.58	0.28	-	33.4%	15.9%	-
1996 T	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
1997 T	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
1998 T	Pass	-	1		158.00	2.37	-	158.00	2.37	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		1	-	158.00	2.37	-	158.00	2.37	-	-	-	-
1999 T	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2000 T	Pass	-	1		8.00	-	-	8.00	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		1	-	8.00	-	-	8.00	-	-	-	-	-
2001 T	Pass	-	0		-	-	-	-	-	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-

Appendix B2 Enhanced Idle Test Emissions Reductions

Unresolved fails remaining in area

33%

Note: Models 1980 and older included in 1981

Model Year/Type	First Result	Last Result	Vehicles	Fail%	Initial			Final			Reduction %		
					HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2002	Pass	-	0		-	-	-	-	-	-	-	-	-
T	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2003	Pass	-	0		-	-	-	-	-	-	-	-	-
T	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2004	Pass	-	0		-	-	-	-	-	-	-	-	-
T	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2005	Pass	-	0		-	-	-	-	-	-	-	-	-
T	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
2006	Pass	-	0		-	-	-	-	-	-	-	-	-
T	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		0	-	-	-	-	-	-	-	-	-	-
Total Trucks													
All	Pass	-	804		103.73	0.23	0.00	103.73	0.23	0.00	0.0%	0.0%	-
T	Fail	Pass	85	7.4%	464.06	1.50	0.00	149.06	0.36	0.00	67.9%	75.7%	-
	Fail	Unresolv.	266	23.0%	613.14	1.83	0.00	201.30	0.52	0.00	67.2%	71.7%	-
	Fail	Waiver	0	0.0%									-
Total	Fail%		1,155	30.4%	247.57	0.69	0.00	129.54	0.31	0.00	47.7%	55.5%	-
Fleet Total													
All	Pass	-	1,764		94.67	0.19	-	94.67	0.19	-	-	-	-
All	Fail	Pass	148	6.2%	417.17	1.53	-	144.94	0.41	-	65.3%	73.1%	-
	Fail	Unresolv.	463	19.5%	604.41	1.73	-	187.99	0.49	-	68.9%	71.7%	-
	Fail	Waiver	0	-									-
Total	Fail%		2,375	25.7%	214.14	0.57	-	116.00	0.26	-	45.8%	54.4%	-
RapidScreen Audit Vehicles:													
All	Pass	-	1	-	18.00	0.01	-	18.00	0.01	-	-	-	-
All	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		1	-	18.00	0.01	-	18.00	0.01	-	-	-	-

Appendix B3 Basic Idle Test Emissions Reductions

Unresolved fails remaining in area:

33%

Note: Models 1980 and older included in 1981

Model Year/Type	First Result	Last Result	Vehicles	Fail%	Initial			Final			Reduction %		
					HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1981 P	Pass	-	6		55.83	0.06	-	55.83	0.06	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	3	33.3%	1,316.00	7.25	-	226.27	1.88	-	82.8%	74.1%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		9	33.3%	475.89	2.46	-	112.65	0.67	-	76.3%	72.8%	-
1982 P	Pass	-	28		66.54	0.15	-	66.54	0.15	-	-	-	-
	Fail	Pass	1	3.2%	908.00	8.48	-	100.00	0.18	-	89.0%	97.9%	-
	Fail	Unresolv.	2	6.5%	1,116.00	4.88	-	357.56	1.34	-	68.0%	72.5%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		31	9.7%	161.39	0.72	-	86.39	0.23	-	46.5%	68.6%	-
1983 P	Pass	-	11		53.55	0.11	-	53.55	0.11	-	-	-	-
	Fail	Pass	1	6.3%	774.00	0.07	-	87.00	0.21	-	88.8%	-200.0%	-
	Fail	Unresolv.	4	25.0%	356.00	7.12	-	95.87	1.69	-	73.1%	76.2%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		16	31.3%	174.19	1.86	-	66.22	0.51	-	62.0%	72.6%	-
1984 P	Pass	-	123		82.54	0.13	-	82.54	0.13	-	-	-	-
	Fail	Pass	9	6.3%	353.89	1.09	-	137.56	0.31	-	61.1%	71.5%	-
	Fail	Unresolv.	12	8.3%	546.83	4.75	-	150.04	0.95	-	72.6%	80.1%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		144	14.6%	138.19	0.57	-	91.61	0.21	-	33.7%	64.0%	-
1985 P	Pass	-	60		84.25	0.18	-	84.25	0.18	-	-	-	-
	Fail	Pass	3	3.9%	479.33	1.30	-	83.67	0.04	-	82.5%	96.9%	-
	Fail	Unresolv.	13	17.1%	421.92	4.70	-	109.94	1.02	-	73.9%	78.4%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		76	21.1%	157.61	0.99	-	88.62	0.31	-	43.8%	68.4%	-
1986 P	Pass	-	211		77.12	0.14	-	77.12	0.14	-	-	-	-
	Fail	Pass	3	1.2%	224.33	4.23	-	53.00	0.40	-	76.4%	90.6%	-
	Fail	Unresolv.	28	11.6%	826.25	3.48	-	191.66	0.77	-	76.8%	77.8%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		242	12.8%	165.62	0.58	-	90.07	0.22	-	45.6%	62.3%	-
1987 P	Pass	-	92		75.50	0.17	-	75.50	0.17	-	-	-	-
	Fail	Pass	1	0.9%	21.00	0.06	-	35.00	0.17	-	-66.7%	-183.3%	-
	Fail	Unresolv.	23	19.8%	636.22	1.55	-	160.88	0.43	-	74.7%	72.0%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		116	20.7%	186.21	0.44	-	92.08	0.22	-	50.5%	49.8%	-
1988 P	Pass	-	358		69.72	0.16	-	69.72	0.16	-	-	-	-
	Fail	Pass	15	3.8%	191.87	0.41	-	66.47	0.07	-	65.4%	83.5%	-
	Fail	Unresolv.	27	6.8%	428.96	1.62	-	99.22	0.41	-	76.9%	74.8%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		400	10.5%	98.55	0.26	-	71.59	0.17	-	27.4%	35.8%	-
1989 P	Pass	-	170		74.58	0.16	-	74.58	0.16	-	-	-	-
	Fail	Pass	6	2.8%	787.17	2.11	-	94.67	0.31	-	88.0%	85.4%	-
	Fail	Unresolv.	35	16.6%	460.49	3.21	-	121.19	0.71	-	73.7%	77.8%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		211	19.4%	158.86	0.72	-	82.88	0.25	-	47.8%	64.7%	-
1990 P	Pass	-	607		65.34	0.15	-	65.34	0.15	-	-	-	-
	Fail	Pass	7	1.1%	84.14	0.20	-	38.86	0.04	-	53.8%	80.9%	-
	Fail	Unresolv.	43	6.5%	580.40	3.47	-	116.32	0.73	-	80.0%	78.9%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		657	7.6%	99.25	0.37	-	68.40	0.19	-	31.1%	49.4%	-
1991 P	Pass	-	262		76.59	0.15	-	76.59	0.15	-	-	-	-
	Fail	Pass	8	2.7%	457.00	2.15	-	116.00	0.45	-	74.6%	79.2%	-
	Fail	Unresolv.	27	9.1%	577.78	4.29	-	130.94	0.85	-	77.3%	80.1%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		297	11.8%	132.40	0.58	-	82.59	0.22	-	37.6%	61.9%	-
1992 P	Pass	-	927		63.20	0.14	-	63.20	0.14	-	-	-	-
	Fail	Pass	26	2.5%	291.54	1.75	-	68.35	0.09	-	76.6%	95.0%	-
	Fail	Unresolv.	74	7.2%	589.99	4.78	-	141.89	1.00	-	76.0%	79.0%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		1,027	9.7%	106.94	0.52	-	69.00	0.20	-	35.5%	60.6%	-

Appendix B3 Basic Idle Test Emissions Reductions

Unresolved fails remaining in area:

33%

Note: Models 1980 and older included in 1981

Model Year/Type	First Result	Last Result	Vehicles	Fail%	Initial			Final			Reduction %		
					HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1993 P	Pass	-	374		61.03	0.12	-	61.03	0.12	-	-	-	-
	Fail	Pass	11	2.6%	70.64	0.15	-	85.09	0.10	-	-20.5%	29.4%	-
	Fail	Unresolv.	34	8.1%	536.29	4.35	-	120.04	0.83	-	77.6%	80.9%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		419	10.7%	99.84	0.46	-	66.45	0.17	-	33.4%	62.3%	-
1994 P	Pass	-	1,265		46.15	0.09	-	46.15	0.09	-	-	-	-
	Fail	Pass	33	2.4%	108.70	0.42	-	45.97	0.10	-	57.7%	75.6%	-
	Fail	Unresolv.	60	4.4%	657.05	3.23	-	148.20	0.59	-	77.4%	81.8%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		1,358	6.8%	74.67	0.24	-	50.66	0.11	-	32.2%	52.8%	-
1995 P	Pass	-	450		50.44	0.09	-	50.44	0.09	-	-	-	-
	Fail	Pass	19	3.8%	51.21	0.11	-	106.84	0.20	-	-108.6%	-74.3%	-
	Fail	Unresolv.	36	7.1%	497.33	3.19	-	133.98	0.66	-	73.1%	79.4%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		505	10.9%	82.32	0.31	-	58.52	0.13	-	28.9%	57.1%	-
1996 P	Pass	-	1,651		39.12	0.10	-	39.12	0.10	-	-	-	-
	Fail	Pass	26	1.5%	52.50	0.13	-	37.62	0.12	-	28.4%	5.8%	-
	Fail	Unresolv.	35	2.0%	443.63	2.73	-	95.89	0.53	-	78.4%	80.6%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		1,712	3.6%	47.59	0.15	-	40.25	0.11	-	15.4%	29.8%	-
1997 P	Pass	-	490		35.61	0.09	-	35.61	0.09	-	-	-	-
	Fail	Pass	11	2.1%	58.09	0.13	-	49.73	0.15	-	14.4%	-12.5%	-
	Fail	Unresolv.	11	2.1%	751.09	6.87	-	178.35	1.41	-	76.3%	79.4%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		512	4.3%	51.46	0.23	-	38.98	0.12	-	24.3%	49.8%	-
1998 P	Pass	-	1,904		35.38	0.09	-	35.38	0.09	-	-	-	-
	Fail	Pass	33	1.7%	84.18	0.54	-	54.03	0.16	-	35.8%	69.4%	-
	Fail	Unresolv.	17	0.9%	451.06	3.43	-	92.40	0.58	-	79.5%	83.1%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		1,954	2.6%	39.82	0.13	-	36.19	0.10	-	9.1%	24.5%	-
1999 P	Pass	-	431		32.39	0.08	-	32.39	0.08	-	-	-	-
	Fail	Pass	12	2.7%	24.58	0.05	-	27.00	0.10	-	-9.8%	-103.4%	-
	Fail	Unresolv.	4	0.9%	268.50	3.84	-	55.85	0.86	-	79.2%	77.5%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		447	3.6%	34.29	0.12	-	32.45	0.09	-	5.4%	21.9%	-
2000 P	Pass	-	2,136		27.89	0.06	-	27.89	0.06	-	-	-	-
	Fail	Pass	83	3.7%	22.02	0.12	-	17.93	0.05	-	18.6%	55.9%	-
	Fail	Unresolv.	15	0.7%	448.13	3.76	-	97.81	0.76	-	78.2%	79.7%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		2,234	4.4%	30.49	0.08	-	27.99	0.06	-	8.2%	27.2%	-
2001 P	Pass	-	349		15.85	0.03	-	15.85	0.03	-	-	-	-
	Fail	Pass	8	2.2%	3.75	0.01	-	8.38	0.01	-	-123.3%	0.0%	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		357	2.2%	15.57	0.03	-	15.68	0.03	-	-0.7%	0.0%	-
2002 P	Pass	-	1,837		13.18	0.03	-	13.18	0.03	-	-	-	-
	Fail	Pass	25	1.3%	16.32	0.03	-	6.96	0.02	-	57.4%	35.6%	-
	Fail	Unresolv.	2	0.1%	208.00	1.27	-	57.26	0.26	-	72.5%	79.6%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		1,864	1.4%	13.43	0.03	-	13.14	0.03	-	2.1%	3.9%	-
2003 P	Pass	-	322		10.48	0.02	-	10.48	0.02	-	-	-	-
	Fail	Pass	3	0.9%	4.67	0.00	-	8.00	0.04	-	-71.4%	-1100.0%	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		325	0.9%	10.43	0.02	-	10.46	0.02	-	-0.3%	-1.6%	-
2004 P	Pass	-	1,664		7.23	0.02	-	7.23	0.02	-	-	-	-
	Fail	Pass	30	1.8%	7.07	0.01	-	10.53	0.01	-	-49.1%	-90.0%	-
	Fail	Unresolv.	2	0.1%	498.00	0.73	-	83.16	0.12	-	83.3%	83.3%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		1,696	1.9%	7.81	0.02	-	7.38	0.02	-	5.5%	3.7%	-

Appendix B3 Basic Idle Test Emissions Reductions

Unresolved fails remaining in area:

33%

Note: Models 1980 and older included in 1981

Year/Type	Model	First Result	Last Result	Vehicles	Fail%	Initial			Final			Reduction %		
						HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
2005 P		Pass	-	295		7.77	0.02	-	7.77	0.02	-	-	-	-
		Fail	Pass	6	2.0%	4.17	0.02	-	4.17	0.07	-	-	-178.6%	-
		Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
		Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total		Fail%		301	2.0%	7.69	0.02	-	7.69	0.02	-	-	-4.6%	-
2006 P		Pass	-	141		5.85	0.01	-	5.85	0.01	-	-	-	-
		Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
		Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
		Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total		Fail%		141	-	5.85	0.01	-	5.85	0.01	-	-	-	-
Total Passenger Vehicles														
All	Pass	-		16,164		35.40	0.08	0.00	35.40	0.08	0.00	0.0%	0.0%	-
P	Fail	Pass		380	2.2%	103.57	0.45	0.00	43.74	0.10	0.00	57.8%	77.0%	-
	Fail	Unresolv.		507	3.0%	563.23	3.64	0.00	131.53	0.75	0.00	76.6%	79.3%	-
	Fail	Waiver		0	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-
Total	Fail%			17,051	5.2%	52.62	0.19	0.00	38.45	0.10	0.00	26.9%	48.7%	-
1981 T		Pass	-	6		147.67	0.07	-	147.67	0.07	-	-	-	-
		Fail	Pass	3	23.1%	486.00	3.43	-	102.00	0.71	-	79.0%	79.4%	-
		Fail	Unresolv.	4	30.8%	579.50	2.99	-	171.19	0.99	-	70.5%	67.0%	-
		Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total		Fail%		13	53.8%	358.62	1.74	-	144.37	0.50	-	59.7%	71.4%	-
1982 T		Pass	-	52		91.17	0.31	-	91.17	0.31	-	-	-	-
		Fail	Pass	3	4.0%	85.67	2.26	-	105.00	0.24	-	-22.6%	89.5%	-
		Fail	Unresolv.	20	26.7%	421.65	3.75	-	118.22	0.88	-	72.0%	76.6%	-
		Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total		Fail%		75	30.7%	179.08	1.31	-	98.94	0.46	-	44.8%	64.7%	-
1983 T		Pass	-	19		113.47	0.32	-	113.47	0.32	-	-	-	-
		Fail	Pass	3	9.1%	121.33	1.23	-	26.67	0.04	-	78.0%	96.7%	-
		Fail	Unresolv.	11	33.3%	627.09	3.49	-	140.16	0.82	-	77.6%	76.5%	-
		Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total		Fail%		33	42.4%	285.39	1.46	-	114.48	0.46	-	59.9%	68.5%	-
1984 T		Pass	-	117		98.28	0.20	-	98.28	0.20	-	-	-	-
		Fail	Pass	15	8.6%	330.07	2.44	-	115.07	0.23	-	65.1%	90.6%	-
		Fail	Unresolv.	43	24.6%	693.49	3.73	-	224.12	0.82	-	67.7%	78.1%	-
		Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total		Fail%		175	33.1%	264.40	1.26	-	130.64	0.36	-	50.6%	71.8%	-
1985 T		Pass	-	67		94.51	0.30	-	94.51	0.30	-	-	-	-
		Fail	Pass	7	6.4%	613.86	0.92	-	120.86	0.37	-	80.3%	59.8%	-
		Fail	Unresolv.	36	32.7%	429.78	3.30	-	124.78	0.66	-	71.0%	80.0%	-
		Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total		Fail%		110	39.1%	237.28	1.32	-	106.09	0.42	-	55.3%	68.1%	-
1986 T		Pass	-	274		88.50	0.15	-	88.50	0.15	-	-	-	-
		Fail	Pass	29	7.8%	488.83	1.46	-	112.17	0.31	-	77.1%	79.0%	-
		Fail	Unresolv.	69	18.5%	578.19	2.51	-	156.77	0.58	-	72.9%	77.0%	-
		Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total		Fail%		372	26.3%	210.53	0.69	-	103.01	0.24	-	51.1%	64.8%	-
1987 T		Pass	-	110		110.10	0.28	-	110.10	0.28	-	-	-	-
		Fail	Pass	8	5.7%	255.13	0.93	-	183.25	1.42	-	28.2%	-52.2%	-
		Fail	Unresolv.	22	15.7%	561.05	3.30	-	109.46	0.75	-	80.5%	77.3%	-
		Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total		Fail%		140	21.4%	189.25	0.79	-	114.18	0.42	-	39.7%	47.0%	-
1988 T		Pass	-	486		81.60	0.17	-	81.60	0.17	-	-	-	-
		Fail	Pass	21	3.7%	428.38	1.50	-	129.14	0.50	-	69.9%	66.6%	-
		Fail	Unresolv.	64	11.2%	634.00	3.45	-	114.91	0.61	-	81.9%	82.3%	-
		Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total		Fail%		571	14.9%	156.27	0.59	-	87.08	0.23	-	44.3%	60.6%	-
1989 T		Pass	-	148		85.24	0.20	-	85.24	0.20	-	-	-	-
		Fail	Pass	4	2.2%	418.50	2.43	-	137.25	0.05	-	67.2%	97.8%	-
		Fail	Unresolv.	29	16.0%	1,030.86	4.28	-	216.12	0.86	-	79.0%	80.0%	-
		Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total		Fail%		181	18.2%	244.11	0.91	-	107.36	0.31	-	56.0%	66.3%	-

Appendix B3 Basic Idle Test Emissions Reductions

Unresolved fails remaining in area:

33%

Note: Models 1980 and older included in 1981

Year/Type	Model	First Result	Last Result	Vehicles	Fail%	Initial			Final			Reduction %		
						HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
1990 T	Pass	-		616		85.26	0.20	-	85.26	0.20	-	-	-	-
	Fail	Pass		23	3.2%	235.70	0.72	-	111.78	0.44	-	52.6%	38.0%	-
	Fail	Unresolv.		70	9.9%	525.67	2.85	-	109.22	0.62	-	79.2%	78.4%	-
	Fail	Waiver		0	-	-	-	-	-	-	-	-	-	-
Total	Fail%			709	13.1%	133.62	0.47	-	88.49	0.25	-	33.8%	48.2%	-
1991 T	Pass	-		160		81.84	0.15	-	81.84	0.15	-	-	-	-
	Fail	Pass		8	4.0%	231.75	0.72	-	168.63	0.45	-	27.2%	37.2%	-
	Fail	Unresolv.		34	16.8%	422.74	2.47	-	103.98	0.54	-	75.4%	78.4%	-
	Fail	Waiver		0	-	-	-	-	-	-	-	-	-	-
Total	Fail%			202	20.8%	145.16	0.57	-	89.01	0.23	-	38.7%	59.5%	-
1992 T	Pass	-		929		86.79	0.17	-	86.79	0.17	-	-	-	-
	Fail	Pass		36	3.5%	336.33	1.06	-	101.81	0.19	-	69.7%	82.2%	-
	Fail	Unresolv.		70	6.8%	624.17	3.72	-	124.82	0.72	-	80.0%	80.7%	-
	Fail	Waiver		0	-	-	-	-	-	-	-	-	-	-
Total	Fail%			1,035	10.2%	131.82	0.45	-	89.89	0.21	-	31.8%	52.4%	-
1993 T	Pass	-		261		84.27	0.17	-	84.27	0.17	-	-	-	-
	Fail	Pass		16	5.5%	183.00	0.30	-	96.06	0.14	-	47.5%	51.9%	-
	Fail	Unresolv.		12	4.2%	1,112.25	3.85	-	143.61	0.80	-	87.1%	79.3%	-
	Fail	Waiver		0	-	-	-	-	-	-	-	-	-	-
Total	Fail%			289	9.7%	132.42	0.33	-	87.39	0.20	-	34.0%	40.6%	-
1994 T	Pass	-		1,496		75.76	0.20	-	75.76	0.20	-	-	-	-
	Fail	Pass		45	2.8%	155.29	0.52	-	77.00	0.13	-	50.4%	75.7%	-
	Fail	Unresolv.		76	4.7%	559.99	2.51	-	178.18	0.52	-	68.2%	79.2%	-
	Fail	Waiver		0	-	-	-	-	-	-	-	-	-	-
Total	Fail%			1,617	7.5%	100.73	0.31	-	80.61	0.21	-	20.0%	33.3%	-
1995 T	Pass	-		318		68.80	0.19	-	68.80	0.19	-	-	-	-
	Fail	Pass		14	4.0%	115.43	0.41	-	74.36	0.13	-	35.6%	68.8%	-
	Fail	Unresolv.		21	5.9%	454.71	1.87	-	114.84	0.38	-	74.7%	79.6%	-
	Fail	Waiver		0	-	-	-	-	-	-	-	-	-	-
Total	Fail%			353	9.9%	93.61	0.29	-	71.76	0.19	-	23.3%	33.8%	-
1996 T	Pass	-		1,474		49.68	0.15	-	49.68	0.15	-	-	-	-
	Fail	Pass		35	2.3%	59.83	0.12	-	41.11	0.12	-	31.3%	-3.2%	-
	Fail	Unresolv.		22	1.4%	744.18	3.75	-	155.55	0.82	-	79.1%	78.0%	-
	Fail	Waiver		0	-	-	-	-	-	-	-	-	-	-
Total	Fail%			1,531	3.7%	59.89	0.20	-	51.00	0.16	-	14.8%	20.9%	-
1997 T	Pass	-		357		45.44	0.14	-	45.44	0.14	-	-	-	-
	Fail	Pass		8	2.2%	52.63	0.13	-	42.13	0.08	-	20.0%	36.9%	-
	Fail	Unresolv.		3	0.8%	1,131.33	5.99	-	277.75	1.02	-	75.4%	83.0%	-
	Fail	Waiver		0	-	-	-	-	-	-	-	-	-	-
Total	Fail%			368	3.0%	54.45	0.18	-	47.26	0.14	-	13.2%	22.6%	-
1998 T	Pass	-		2,051		38.69	0.11	-	38.69	0.11	-	-	-	-
	Fail	Pass		40	1.9%	42.08	0.15	-	64.83	0.16	-	-54.1%	-11.5%	-
	Fail	Unresolv.		20	0.9%	1,088.85	1.41	-	251.06	0.34	-	76.9%	76.0%	-
	Fail	Waiver		0	-	-	-	-	-	-	-	-	-	-
Total	Fail%			2,111	2.8%	48.70	0.12	-	41.19	0.11	-	15.4%	8.0%	-
1999 T	Pass	-		417		29.95	0.09	-	29.95	0.09	-	-	-	-
	Fail	Pass		5	1.2%	86.00	0.34	-	87.00	0.20	-	-1.2%	42.0%	-
	Fail	Unresolv.		2	0.5%	294.00	0.76	-	72.77	0.31	-	75.3%	59.6%	-
	Fail	Waiver		0	-	-	-	-	-	-	-	-	-	-
Total	Fail%			424	1.7%	31.86	0.09	-	30.82	0.09	-	3.2%	4.0%	-
2000 T	Pass	-		2,328		23.17	0.06	-	23.17	0.06	-	-	-	-
	Fail	Pass		78	3.2%	21.18	0.05	-	22.65	0.07	-	-7.0%	-32.1%	-
	Fail	Unresolv.		2	0.1%	371.00	3.11	-	61.55	0.51	-	83.4%	83.5%	-
	Fail	Waiver		0	-	-	-	-	-	-	-	-	-	-
Total	Fail%			2,408	3.3%	23.40	0.06	-	23.19	0.06	-	0.9%	2.8%	-
2001 T	Pass	-		353		16.99	0.04	-	16.99	0.04	-	-	-	-
	Fail	Pass		23	6.1%	26.70	0.05	-	41.09	0.31	-	-53.9%	-508.6%	-
	Fail	Unresolv.		4	1.1%	2,641.50	3.11	-	436.51	0.52	-	83.5%	83.2%	-
	Fail	Waiver		0	-	-	-	-	-	-	-	-	-	-
Total	Fail%			380	7.1%	45.21	0.08	-	22.87	0.07	-	49.4%	15.2%	-

Appendix B3 Basic Idle Test Emissions Reductions

Unresolved fails remaining in area:

33%

Note: Models 1980 and older included in 1981

Model Year/Type	First Result	Last Result	Vehicles	Fail%	Initial			Final			Reduction %		
					HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
2002 T	Pass	-	2,455		13.38	0.05	-	13.38	0.05	-	-	-	-
	Fail	Pass	72	2.8%	15.33	0.04	-	14.44	0.07	-	5.8%	-59.0%	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		2,527	2.8%	13.43	0.05	-	13.41	0.05	-	0.2%	-1.6%	-
2003 T	Pass	-	469		10.19	0.03	-	10.19	0.03	-	-	-	-
	Fail	Pass	12	2.5%	6.58	0.00	-	10.67	0.01	-	-62.0%	-700.0%	-
	Fail	Unresolv.	1	0.2%	46.00	0.02	-	15.18	0.01	-	67.0%	67.0%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		482	2.7%	10.17	0.03	-	10.21	0.03	-	-0.4%	-0.8%	-
2004 T	Pass	-	2,191		12.97	0.04	-	12.97	0.04	-	-	-	-
	Fail	Pass	21	0.9%	6.57	0.02	-	13.48	0.03	-	-105.1%	-26.5%	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		2,212	0.9%	12.91	0.04	-	12.97	0.04	-	-0.5%	-0.2%	-
2005 T	Pass	-	259		12.36	0.04	-	12.36	0.04	-	-	-	-
	Fail	Pass	1	0.4%	10.00	0.01	-	8.00	0.01	-	20.0%	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		260	0.4%	12.35	0.04	-	12.35	0.04	-	0.1%	-	-
2006 T	Pass	-	108		7.25	0.02	-	7.25	0.02	-	-	-	-
	Fail	Pass	0	-	-	-	-	-	-	-	-	-	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		108	-	7.25	0.02	-	7.25	0.02	-	-	-	-
Total Trucks													
All	Pass	-	17,521		41.60	0.11	0.00	41.60	0.11	0.00	0.0%	0.0%	-
T	Fail	Pass	530	2.8%	145.95	0.51	0.00	63.88	0.19	0.00	56.2%	62.8%	-
	Fail	Unresolv.	635	3.4%	629.06	3.09	0.00	148.77	0.65	0.00	76.4%	79.1%	-
	Fail	Waiver	0	0.0%	-	-	-	-	-	-	-	-	-
Total	Fail%		18,686	6.2%	64.53	0.22	0.00	45.88	0.13	0.00	28.9%	42.1%	-
Fleet Total													
All	Pass	-	33,685		38.63	0.09	-	38.63	0.09	-	-	-	-
All	Fail	Pass	910	2.5%	128.25	0.48	-	55.47	0.15	-	56.8%	68.2%	-
	Fail	Unresolv.	1,142	3.2%	599.84	3.34	-	141.12	0.69	-	76.5%	79.2%	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		35,737	5.7%	58.84	0.21	-	42.33	0.11	-	28.1%	45.1%	-
RapidScreen Audit Vehicles:													
All	Pass	-	65	-	24.75	0.06	-	24.75	0.06	-	-	-	-
All	Fail	Pass	2	3.0%	5.00	0.04	-	8.00	0.03	-	-60.0%	25.0%	-
	Fail	Unresolv.	0	-	-	-	-	-	-	-	-	-	-
	Fail	Waiver	0	-	-	-	-	-	-	-	-	-	-
Total	Fail%		67	3.0%	24.16	0.06	-	24.25	0.06	-	-0.4%	0.5%	-

Appendix C – Annual IM240 Equivalent Tons

- **C1 – IM240 Tests**
- **C2 – Enhanced Idle Tests**
- **C3 – Basic Idle Tests**
- **C4 – OBD I/M Tests**
- **C5 – Combined Reductions**

Appendix C Notes and Assumptions

Tons Per Year –Tons of emissions produced or eliminated by the vehicles tested during one year of travel assuming the IM240 driving cycle.

Does not include cold start emissions, off-cycle emissions, evaporative emissions, different driving cycles or the effects of speed and temperature corrections.

Appendix C1
Enhanced IM240 Test Reductions

Type	Annual Miles	Unique Vehicles	Initial Tons/Yr			Final Tons/Yr			Reduction Tons/Yr		
			HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
P 1981	4,318	88	0.9	14.7	0.7	0.4	5.5	0.4	0.5	9.2	0.2
P 1982	4,542	530	3.9	54.9	5.7	1.7	23.1	4.2	2.3	31.9	1.5
P 1983	4,656	254	2.5	37.7	2.9	0.9	13.1	2.0	1.6	24.6	0.9
P 1984	4,898	1,740	11.0	154.0	17.7	5.1	61.6	13.7	5.9	92.5	4.1
P 1985	5,152	736	6.6	74.6	8.9	2.8	31.0	6.0	3.8	43.6	2.9
P 1986	5,420	3,263	18.6	208.0	34.3	9.2	90.5	27.8	9.4	117.6	6.5
P 1987	5,701	1,293	10.0	116.6	15.7	4.6	46.4	11.5	5.4	70.1	4.2
P 1988	5,997	5,915	32.3	332.9	64.4	17.6	167.4	54.1	14.7	165.5	10.2
P 1989	6,308	2,527	19.0	183.3	30.8	8.7	82.1	23.9	10.3	101.2	6.9
P 1990	6,636	10,147	55.2	605.5	124.8	30.9	314.6	108.3	24.3	290.9	16.5
P 1991	6,980	3,939	26.1	286.1	54.4	13.9	142.1	44.4	12.2	144.0	10.0
P 1992	7,342	15,914	85.6	987.8	211.2	52.2	544.3	188.7	33.4	443.5	22.5
P 1993	7,723	5,717	35.8	432.4	79.9	20.6	215.1	69.5	15.2	217.3	10.4
P 1994	8,124	22,241	92.2	946.0	263.4	64.8	642.0	243.1	27.4	304.0	20.3
P 1995	8,546	8,496	40.2	379.2	94.3	25.1	240.1	85.4	15.0	139.1	8.9
P 1996	8,989	61	0.2	1.3	0.8	0.1	1.1	0.7	0.0	0.2	0.1
P 1997	9,456	38	0.2	2.8	0.3	0.0	0.5	0.2	0.2	2.3	0.0
P 1998	9,947	196	0.3	2.2	1.9	0.3	2.2	1.8	0.0	0.0	0.1
P 1999	10,463	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
P 2000	11,006	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P 2001	11,577	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
P 2002	12,178	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P 2003	12,810	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P 2004	13,475	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P 2005	14,174	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
P 2006	14,910	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
P Total		83,101	440.6	4,819.9	1,012.0	259.0	2,622.6	885.7	181.5	2,197.3	126.4
T 1981	2,477	48	0.7	3.4	0.4	0.3	2.2	0.3	0.4	1.2	0.1
T 1982	2,749	329	2.3	26.5	2.8	1.5	17.7	2.6	0.8	8.8	0.2
T 1983	3,051	121	1.1	11.0	1.3	0.7	7.8	1.2	0.4	3.1	0.1
T 1984	3,387	852	6.4	78.5	8.5	3.0	35.2	7.3	3.3	43.3	1.2
T 1985	3,754	386	4.8	52.8	4.3	1.8	21.6	3.3	2.9	31.2	1.0
T 1986	4,154	1,839	13.7	147.6	21.4	7.4	75.5	19.2	6.3	72.1	2.2
T 1987	4,588	672	5.7	54.8	8.9	3.1	28.4	7.7	2.5	26.4	1.3
T 1988	5,055	3,426	25.1	210.6	49.3	16.4	136.4	43.5	8.7	74.2	5.8
T 1989	5,556	1,113	11.2	102.6	17.8	6.3	57.3	14.9	4.9	45.3	2.9
T 1990	6,093	4,452	34.6	314.7	74.6	24.6	209.3	68.6	9.9	105.4	6.0
T 1991	6,663	1,617	15.8	150.9	26.4	9.8	90.3	24.1	6.0	60.6	2.3
T 1992	7,269	7,624	69.1	642.0	147.1	50.3	449.5	136.4	18.8	192.4	10.7
T 1993	7,911	2,435	23.8	212.2	51.1	17.4	148.6	47.7	6.4	63.6	3.4
T 1994	8,589	13,163	116.1	978.6	273.1	93.2	787.4	256.0	22.9	191.2	17.1
T 1995	9,305	3,395	35.3	310.4	77.6	24.6	227.8	70.3	10.7	82.6	7.3
T 1996	10,057	2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0
T 1997	10,849	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
T 1998	11,681	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
T 1999	12,553	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
T 2000	13,465	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
T 2001	14,420	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
T 2002	15,417	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
T 2003	16,459	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
T 2004	17,546	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
T 2005	18,680	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
T 2006	19,863	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0
T Total		41,474	365.5	3,296.6	764.7	260.5	2,295.0	703.1	104.9	1,001.6	61.5
Total		124,575	806.0	8,116.5	1,776.7	519.6	4,917.6	1,588.8	286.5	3,198.9	187.9

Appendix C2

Enhanced Area Idle Test Reductions

Type	Annual Miles	Unique Vehicles	Initial Tons/Yr			Final Tons/Yr			Reduction Tons/Yr		
			HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
P 1981	4,318	2	0.0	0.7		0.0	0.2		0.0	0.5	-
P 1982	4,542	14	0.3	5.1		0.1	1.9		0.2	3.2	-
P 1983	4,656	22	0.4	7.1		0.2	3.0		0.3	4.1	-
P 1984	4,898	47	0.4	2.9		0.1	1.5		0.2	1.4	-
P 1985	5,152	25	0.2	3.3		0.1	1.3		0.1	2.0	-
P 1986	5,420	60	0.7	1.8		0.4	1.1		0.3	0.8	-
P 1987	5,701	31	0.5	10.5		0.2	2.9		0.3	7.5	-
P 1988	5,997	61	0.6	3.0		0.4	1.6		0.3	1.3	-
P 1989	6,308	34	0.3	6.7		0.1	2.3		0.2	4.4	-
P 1990	6,636	91	1.3	11.0		0.4	4.2		0.9	6.8	-
P 1991	6,980	47	0.6	7.2		0.3	2.9		0.3	4.3	-
P 1992	7,342	190	2.1	19.6		1.0	6.8		1.2	12.8	-
P 1993	7,723	90	1.0	9.1		0.6	4.3		0.4	4.8	-
P 1994	8,124	367	3.3	24.2		1.9	12.0		1.4	12.2	-
P 1995	8,546	116	1.7	17.9		0.7	6.3		0.9	11.6	-
P 1996	8,989	3	0.0	0.1		0.0	0.1		0.0	0.0	-
P 1997	9,456	-	0.0	0.0		0.0	0.0		0.0	0.0	-
P 1998	9,947	7	0.0	-0.2		0.0	-0.2		0.0	0.0	-
P 1999	10,463	2	0.0	0.5		0.0	0.5		0.0	0.0	-
P 2000	11,006	-	0.0	0.0		0.0	0.0		0.0	0.0	-
P 2001	11,577	-	0.0	0.0		0.0	0.0		0.0	0.0	-
P 2002	12,178	-	0.0	0.0		0.0	0.0		0.0	0.0	-
P 2003	12,810	4	1.6	7.6		0.4	0.0		1.2	7.6	-
P 2004	13,475	6	0.5	1.7		0.2	0.8		0.2	0.9	-
P 2005	14,174	1	0.0	0.0		0.0	0.0		0.0	0.0	-
P 2006	14,910	-	0.0	0.0		0.0	0.0		0.0	0.0	-
P Total		1,220	15.5	139.8	-	7.1	53.7	-	8.4	86.1	-
T 1981	2,477	9	0.1	1.4		0.0	0.6		0.1	0.9	-
T 1982	2,749	30	0.4	3.1		0.1	0.8		0.3	2.3	-
T 1983	3,051	7	0.1	1.2		0.0	0.4		0.1	0.8	-
T 1984	3,387	74	1.2	7.6		0.6	2.8		0.7	4.8	-
T 1985	3,754	36	0.8	6.5		0.2	2.1		0.6	4.4	-
T 1986	4,154	85	2.0	12.1		0.7	4.3		1.3	7.8	-
T 1987	4,588	37	0.8	2.4		0.4	1.3		0.4	1.1	-
T 1988	5,055	138	1.7	9.3		1.0	5.3		0.7	4.0	-
T 1989	5,556	58	0.8	12.2		0.4	4.4		0.4	7.9	-
T 1990	6,093	125	1.8	13.5		1.0	7.0		0.8	6.5	-
T 1991	6,663	69	1.8	15.5		0.8	6.4		1.0	9.1	-
T 1992	7,269	194	3.0	23.4		1.7	10.7		1.3	12.6	-
T 1993	7,911	46	0.6	4.6		0.4	3.0		0.2	1.5	-
T 1994	8,589	197	3.8	26.7		2.6	17.5		1.1	9.2	-
T 1995	9,305	48	0.7	4.8		0.5	4.1		0.3	0.7	-
T 1996	10,057	-	0.0	0.0		0.0	-		0.0	0.0	-
T 1997	10,849	-	0.0	0.0		0.0	-		0.0	0.0	-
T 1998	11,681	1	0.0	0.9		0.0	0.9		0.0	0.0	-
T 1999	12,553	-	0.0	0.0		0.0	-		0.0	0.0	-
T 2000	13,465	1	0.0	0.0		0.0	0.0		0.0	0.0	-
T 2001	14,420	-	0.0	0.0		0.0	-		0.0	0.0	-
T 2002	15,417	-	0.0	0.0		0.0	-		0.0	0.0	-
T 2003	16,459	-	0.0	0.0		0.0	-		0.0	0.0	-
T 2004	17,546	-	0.0	0.0		0.0	-		0.0	0.0	-
T 2005	18,680	-	0.0	0.0		0.0	-		0.0	0.0	-
T 2006	19,863	-	0.0	0.0		0.0	-		0.0	0.0	-
T Total		1,155	19.7	145.1	-	10.5	71.6	-	9.2	73.5	-
Total		2,375	35.2	284.9	-	17.5	125.3	-	17.7	159.6	-

Appendix C3

Basic Area Idle Test Reductions

Type	Annual Miles	Unique Vehicles	Initial Tons/Yr			Final Tons/Yr			Reduction Tons/Yr		
			HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
P 1981	4,542	9	0.2	4.1		0.0	1.0		0.2	3.0	-
P 1982	4,656	31	0.2	4.0		0.1	1.0		0.1	3.0	-
P 1983	4,898	16	0.1	5.8		0.0	1.5		0.1	4.4	-
P 1984	5,152	144	0.9	15.7		0.5	4.4		0.4	11.3	-
P 1985	5,420	76	0.6	16.0		0.3	4.3		0.3	11.6	-
P 1986	5,701	242	2.1	29.7		0.9	9.0		1.2	20.7	-
P 1987	5,997	116	1.2	11.0		0.5	4.6		0.8	6.3	-
P 1988	6,308	400	1.9	21.3		1.1	11.4		0.8	9.9	-
P 1989	6,636	211	2.0	38.3		0.8	11.2		1.2	27.1	-
P 1990	6,980	657	3.4	58.1		1.8	23.6		1.7	34.5	-
P 1991	7,342	297	2.5	46.9		1.2	14.5		1.3	32.4	-
P 1992	7,723	1,027	6.7	150.5		3.1	47.1		3.5	103.4	-
P 1993	8,124	419	2.6	56.3		1.2	15.9		1.3	40.4	-
P 1994	8,546	1,358	5.4	84.0		2.1	24.1		3.3	59.9	-
P 1995	8,989	505	2.5	47.0		1.2	13.6		1.3	33.4	-
P 1996	9,456	1,712	2.3	60.6		0.9	30.3		1.4	30.3	-
P 1997	9,947	512	1.0	36.6		0.2	11.9		0.7	24.7	-
P 1998	10,463	1,954	1.1	55.9		0.2	29.5		0.9	26.4	-
P 1999	11,006	447	-0.1	11.1		-0.2	6.0		0.1	5.2	-
P 2000	11,577	2,234	-1.4	23.3		-2.2	-0.8		0.8	24.1	-
P 2001	12,178	357	-1.0	-5.0		-1.0	-5.0		0.0	0.0	-
P 2002	12,810	1,864	-6.1	-29.1		-6.2	-30.3		0.1	1.2	-
P 2003	13,475	325	-1.3	-7.3		-1.3	-7.2		0.0	-0.1	-
P 2004	14,174	1,696	-7.7	-44.3		-7.9	-45.0		0.1	0.6	-
P 2005	14,910	301	-1.5	-8.0		-1.5	-7.9		0.0	-0.2	-
P 2006	14,910	141	-0.7	-4.2		-0.7	-4.2		0.0	0.0	-
P Total		17,051	16.9	678.2	-	-4.7	164.7	-	21.6	513.5	-
T 1981	2,749	13	0.2	2.0		0.1	0.6		0.1	1.4	-
T 1982	3,051	75	0.5	9.5		0.3	3.4		0.2	6.0	-
T 1983	3,387	33	0.4	5.1		0.1	1.7		0.2	3.5	-
T 1984	3,754	175	2.1	26.2		1.0	7.6		1.1	18.5	-
T 1985	4,154	110	1.3	19.1		0.5	6.3		0.8	12.8	-
T 1986	4,588	372	4.4	37.7		2.0	13.8		2.4	23.9	-
T 1987	5,055	140	1.6	17.9		0.9	9.7		0.7	8.2	-
T 1988	5,556	571	5.9	59.5		3.0	24.5		2.9	35.1	-
T 1989	6,093	181	3.3	31.7		1.3	11.1		2.0	20.7	-
T 1990	6,663	709	7.4	72.3		4.6	38.6		2.8	33.7	-
T 1991	7,269	202	2.5	26.6		1.4	11.2		1.1	15.4	-
T 1992	7,911	1,035	12.6	117.8		8.1	58.3		4.5	59.6	-
T 1993	8,589	289	3.8	27.1		2.4	16.6		1.5	10.5	-
T 1994	9,305	1,617	17.0	155.1		13.1	106.1		3.9	49.0	-
T 1995	10,057	353	3.7	34.4		2.7	23.4		1.0	11.0	-
T 1996	10,849	1,531	10.0	112.6		8.1	90.9		1.9	21.7	-
T 1997	11,681	368	2.3	26.8		1.9	21.2		0.4	5.6	-
T 1998	12,553	2,111	12.1	114.5		9.5	106.4		2.6	8.1	-
T 1999	13,465	424	1.3	19.8		1.3	19.1		0.1	0.7	-
T 2000	14,420	2,408	4.4	81.5		4.3	79.8		0.1	1.8	-
T 2001	15,417	380	2.4	17.1		0.7	15.0		1.7	2.1	-
T 2002	16,459	2,527	-0.2	80.2		-0.2	81.2		0.0	-0.9	-
T 2003	17,546	482	-0.4	12.6		-0.4	12.7		0.0	-0.1	-
T 2004	18,680	2,212	-0.5	70.9		-0.4	70.9		0.0	-0.1	-
T 2005	19,863	260	-0.1	8.5		-0.1	8.5		0.0	0.0	-
T 2006	19,863	108	-0.2	2.6		-0.2	2.6		0.0	0.0	-
T Total		18,686	97.9	1,189.3	-	66.0	841.1	-	31.9	348.2	-
Total		35,737	114.7	1,867.5	-	61.3	1,005.8	-	53.5	861.7	-

Appendix C4

Enhanced OBD Test Reductions 1/1/2006-12/31/2006

Type	Annual Miles	Unique Vehicles	Initial Tons/Yr			Final Tons/Yr			Reduction Tons/Yr		
			HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
P 1996	8,989	29,093	91.9	1,012.2	267.0	77.9	854.8	255.2	14.1	157.4	11.8
P 1997	9,456	8,528	24.4	267.2	69.7	18.4	267.5	70.4	5.9	-0.4	-0.7
P 1998	9,947	34,572	71.3	1,211.2	255.0	52.6	939.8	238.0	18.7	271.4	17.0
P 1999	10,463	8,932	14.2	198.1	57.1	11.3	193.1	55.8	3.0	5.0	1.3
P 2000	11,006	40,591	49.3	950.0	245.5	32.6	748.0	215.6	16.7	202.0	29.9
P 2001	11,577	8,991	6.1	102.6	29.9	0.1	80.7	29.6	6.0	21.9	0.3
P 2002	12,178	39,051	1.6	513.6	110.5	-4.8	372.6	98.6	6.4	141.0	11.9
P 2003	12,810	9,851	-2.5	65.1	23.8	-5.2	67.3	24.9	2.7	-2.2	-1.2
P 2004	13,475	34,128	-7.9	298.8	73.1	-9.6	261.6	74.5	1.8	37.2	-1.4
P 2005	14,174	11,533	-5.9	59.4	21.2	-2.9	70.9	23.4	-3.0	-11.5	-2.2
P 2006	14,910	4,311	-0.9	34.5	9.1	-0.5	23.8	9.7	-0.3	10.7	-0.6
P Total		229,581	241.8	4,712.8	1,161.8	169.8	3,880.2	1,095.7	72.0	832.6	66.1
T 1996	10,057	15,414	78.0	882.7	257.6	64.2	754.7	241.0	13.8	127.9	16.6
T 1997	10,849	4,354	18.9	228.8	74.3	15.3	182.2	64.9	3.6	46.6	9.5
T 1998	11,681	23,433	65.6	1,151.5	336.9	58.9	999.4	328.6	6.7	152.2	8.3
T 1999	12,553	5,632	10.2	175.8	53.5	12.6	191.9	60.4	-2.4	-16.1	-6.9
T 2000	13,465	26,238	49.5	959.2	249.5	35.9	741.2	238.6	13.6	218.0	10.9
T 2001	14,420	5,857	6.6	151.9	38.9	2.9	105.4	36.8	3.7	46.5	2.1
T 2002	15,417	31,006	33.4	892.0	192.7	8.9	611.7	190.1	24.5	280.3	2.6
T 2003	16,459	7,562	8.5	130.3	43.1	-1.3	121.9	40.3	9.8	8.4	2.7
T 2004	17,546	30,227	8.2	475.0	152.7	-4.0	411.9	149.8	12.2	63.2	2.9
T 2005	18,680	6,286	-1.8	85.1	33.3	3.5	69.3	33.1	-5.3	15.8	0.2
T 2006	19,863	2,744	1.1	62.8	13.4	-0.6	33.2	14.2	1.8	29.6	-0.8
T Total		158,753	278.3	5,195.0	1,445.9	196.3	4,222.7	1,397.9	82.0	972.3	48.0
Total	12,641	388,334	520.1	9,907.8	2,607.8	366.1	8,102.9	2,493.6	154.0	1,804.9	114.2
Average g/mi			0.10	1.83	0.48	0.07	1.50	0.46	0.03	0.33	0.02

Enhanced OBD Audit Test Reductions 1/1/2006-12/31/2006

Type	Annual Miles	Unique Vehicles	Initial Tons/Yr			Final Tons/Yr			Reduction Tons/Yr		
			HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
P 1996	8,989	96	0.1	1.1	0.6	0.2	1.7	0.5	-0.1	-0.5	0.1
P 1997	9,456	7	0.0	0.1	0.0	0.0	0.2	0.1	0.0	-0.1	-0.1
P 1998	9,947	233	0.6	4.8	0.2	0.3	5.0	1.3	0.3	-0.3	-1.1
P 1999	10,463	4	0.0	0.4	0.0	0.0	0.0	0.1	0.1	0.4	-0.1
P 2000	11,006	403	0.4	5.5	2.4	0.5	7.4	2.1	-0.1	-1.9	0.3
P 2001	11,577	7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P 2002	12,178	436	-0.1	4.1	1.2	-0.1	4.0	1.0	0.0	0.1	0.2
P 2003	12,810	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P 2004	13,475	383	0.0	2.5	0.8	-0.4	1.9	0.8	0.3	0.6	0.0
P 2005	14,174										
P 2006	14,910										
P Total		1,573	1.0	18.6	5.3	0.5	20.2	5.9	0.5	-1.6	-0.6
T 1996	10,057	66	0.3	2.0	0.8	-0.1	2.0	0.8	0.3	0.0	0.0
T 1997	10,849	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
T 1998	11,681	134	0.2	4.7	2.2	0.2	3.2	1.8	0.0	1.5	0.3
T 1999	12,553	6	0.0	0.0	0.0	0.0	0.1	0.1	0.0	-0.1	0.0
T 2000	13,465	300	0.2	9.1	2.6	0.7	10.8	2.2	-0.5	-1.7	0.4
T 2001	14,420	5	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	-0.1
T 2002	15,417	444	0.4	7.8	2.5	0.1	6.4	2.7	0.3	1.5	-0.2
T 2003	16,459	13	0.0	0.3	0.1	-0.1	0.1	0.1	0.1	0.1	0.0
T 2004	17,546	439	0.2	5.8	2.1	-0.1	3.3	1.9	0.2	2.5	0.2
T 2005	18,680										
T 2006	19,863										
T Total		1,408	1.2	29.8	10.3	0.7	25.9	9.6	0.4	3.9	0.7
Total	13,256	2,981	2.1	48.4	15.7	1.2	46.1	15.5	0.9	2.3	0.2
Average g/mi			0.05	1.11	0.36	0.03	1.06	0.36	0.02	0.05	0.00

Appendix C5
Enhanced and Basic IM240 Equivalent Tons Per Year Reduction
1980 and earlier models are included in 1981

Type	Unique Vehicles	HC Tons/Year			CO Tons/Year			NOx Tons/Year		
		After I/M Emissions	Enhanced Reduction	Basic Reduction	After I/M Emissions	Enhanced Reduction	Basic Reduction	After I/M Emissions	Enhanced Reduction	Basic Reduction
P 1981	99	0	1	0	7	10	3	0	0	-
P 1982	575	2	2	0	26	35	3	4	2	-
P 1983	292	1	2	0	18	29	4	2	1	-
P 1984	1,931	6	6	0	67	94	11	14	4	-
P 1985	837	3	4	0	37	46	12	6	3	-
P 1986	3,565	11	10	1	101	118	21	28	6	-
P 1987	1,440	5	6	1	54	78	6	12	4	-
P 1988	6,376	19	15	1	180	167	10	54	10	-
P 1989	2,772	10	10	1	96	106	27	24	7	-
P 1990	10,895	33	25	2	342	298	34	108	17	-
P 1991	4,283	15	13	1	159	148	32	44	10	-
P 1992	17,131	56	35	4	598	456	103	189	23	-
P 1993	6,226	22	16	1	235	222	40	70	10	-
P 1994	23,966	69	29	3	678	316	60	243	20	-
P 1995	9,117	27	16	1	260	151	33	85	9	-
P 1996	30,869	79	14	1	886	158	30	256	12	-
P 1997	9,078	19	6	1	280	2	25	71	-1	-
P 1998	36,729	53	19	1	971	271	26	240	17	-
P 1999	9,381	11	3	0	200	5	5	56	1	-
P 2000	42,827	30	17	1	747	202	24	216	30	-
P 2001	9,348	-1	6	0	76	22	0	30	0	-
P 2002	40,917	-11	6	0	342	141	1	99	12	-
P 2003	10,181	-6	4	0	60	5	0	25	-1	-
P 2004	35,831	-17	2	0	217	38	1	74	-1	-
P 2005	11,835	-4	-3	0	63	-11	0	23	-2	-
P 2006	4,452	-1	0	0	20	11	0	10	-1	-
P Total	330,953	431	262	22	6,721	3,116	513	1,981	193	-
T 1981	70	0	0	0	3	2	1	0	0	-
T 1982	434	2	1	0	22	11	6	3	0	-
T 1983	161	1	1	0	10	4	3	1	0	-
T 1984	1,101	5	4	1	46	48	19	7	1	-
T 1985	532	3	3	1	30	36	13	3	1	-
T 1986	2,296	10	8	2	94	80	24	19	2	-
T 1987	849	4	3	1	39	28	8	8	1	-
T 1988	4,135	20	9	3	166	78	35	44	6	-
T 1989	1,352	8	5	2	73	53	21	15	3	-
T 1990	5,286	30	11	3	255	112	34	69	6	-
T 1991	1,888	12	7	1	108	70	15	24	2	-
T 1992	8,853	60	20	4	519	205	60	136	11	-
T 1993	2,770	20	7	1	168	65	10	48	3	-
T 1994	14,977	109	24	4	911	200	49	256	17	-
T 1995	3,796	28	11	1	255	83	11	70	7	-
T 1996	16,947	72	14	2	846	128	22	241	17	-
T 1997	4,722	17	4	0	203	47	6	65	9	-
T 1998	25,545	68	7	3	1,107	152	8	329	8	-
T 1999	6,056	14	-2	0	211	-16	1	60	-7	-
T 2000	28,647	40	14	0	821	218	2	239	11	-
T 2001	6,237	4	4	2	120	47	2	37	2	-
T 2002	33,533	9	25	0	693	280	-1	190	3	-
T 2003	8,044	-2	10	0	135	8	0	40	3	-
T 2004	32,439	-4	12	0	483	63	0	150	3	-
T 2005	6,546	3	-5	0	78	16	0	33	0	-
T 2006	2,852	-1	2	0	36	30	0	14	-1	-
T Total	220,068	533	196	32	7,430	2,047	348	2,101	110	-
Total	551,021	964	458	53	14,152	5,163	862	4,082	302	-

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