

Treasure Valley Vehicle Inspection and Maintenance Programs

Annual Review



**State of Idaho
Department of Environmental Quality
1410 North Hilton
Boise, ID 83706
December 2015**

Background

In 2008, the Idaho Legislature enacted and the governor signed into law Idaho Code §39-116B, “Vehicle Inspection and Maintenance Program,” laying the groundwork for requiring vehicle emissions testing in areas of the state where air quality is compromised and motor vehicle emissions constitute one of the top two sources contributing to the pollution. Ada and Canyon Counties meet the criteria specified in the law, as data shows the design value for ozone exceeds 85% of the National Ambient Air Quality Standard (NAAQS) and vehicle emissions constitute one of the top two emissions sources contributing to ozone concentrations in the Treasure Valley.

Ada County has had a vehicle emissions testing program in operation since 1984; the program is managed by the Air Quality Board (AQB). In 2010, vehicle emissions testing became a requirement in Canyon County and the city of Kuna in Ada County. As of February 2015, the Idaho Department of Environmental Quality (DEQ) contracts with Applus Technologies Inc. to operate the program in Canyon County and the city of Kuna, per Idaho Code §39-116B(3).

Idaho Code §39-116B(5) directs that “The department shall annually review the results of the vehicle inspection and maintenance program. The review shall include, among other things, an estimate of the emission reduction obtained from the number of vehicles that initially fail the test and then pass after maintenance.” This report summarizes the effectiveness of programs for both Ada and Canyon Counties during calendar year 2014.

Program Effectiveness

The effectiveness of an emissions testing program can be described in terms of its failure rates, compliance rates, and estimated emission reductions. Table 1 shows the failure, compliance, and waiver rates for calendar years 2012, 2013, and 2014, along with the total number of vehicles tested. These results are consistent with other inspection and maintenance (I/M) programs throughout the United States.

Table 1. Failure, compliance, and waiver rates.

	2012		2013		2014	
	Ada	Canyon	Ada	Canyon	Ada	Canyon
Vehicles tested	129,937	42,323	127,485	46,958	131,614	41,650
Failure rate	10.23%	9.99%	8.73%	10.87%	8.53%	10.27%
Compliance rate	97.20%	96.36%	96.10%	96.36%	97.01%	96.24%
Waiver rate	0.49%	0.35%	0.44%	0.29%	0.37%	0.22%

Failure Rate

Failure rates reflect the percentage of tested vehicles that fail the initial test and are required to either obtain repairs and pass a retest or obtain a waiver due to financial hardship or repair costs.

Compliance Rate

Compliance rates reflect the percentage of vehicles due for testing that have either passed an emissions test or received a waiver or exemption.

Waiver Rate

The I/M programs in Ada and Canyon Counties offer two forms of waivers: repair waivers and financial hardship waivers. A repair waiver is available to individuals who spend a minimum amount on emission-related repairs for a vehicle that has failed an emission test. A hardship waiver is granted

to an individual who provides proof that a financial hardship would be endured to complete the necessary repairs to a vehicle that has failed an emissions test.

Emission Reductions

When Idaho Code §39-116B was enacted in 2008, initial modeling was conducted to estimate the annual ozone precursor emission reductions that would be achieved by the two-county I/M programs. DEQ uses the latest approved model to evaluate emission reductions to assess the continued benefit of the I/M programs. The calendar year 2012, 2013, and 2014 vehicle emission reduction estimates are summarized in Table 2.

Table 2. Ozone precursor modeled annual reductions.

Ozone Precursor (tons/year)	2012 Emission Reductions		2013 Emission Reductions		2014 Emission Reductions	
	Ada	Canyon	Ada	Canyon	Ada	Canyon
Volatile organic compounds	340	223	306	169	319	212
Nitrogen oxides	290	153	282	147	283	146
Total reductions	630	376	587	316	602	358

Program Review

While national vehicle emission standards continue to become more rigorous for newer vehicles, the emission testing programs in Ada and Canyon Counties continue to provide emission reductions greater than what was proposed at the inception of Idaho Code §39-116B. As the program matures and the gross emitters and older vehicles are removed from the fleet, the emission reductions are expected to decrease.

In October 2015, the US Environmental Protection Agency revised the health-based NAAQS for ozone from 75 parts per billion (ppb) down to 70 ppb. DEQ expects the Treasure Valley to meet the new, more stringent standard; the current value is 68 ppb. Ozone monitoring data show that over the last decade, ozone levels in the Treasure Valley have decreased, in part due to the emission testing program. An I/M program helps to reduce ozone by reducing emissions of nitrogen oxides (NOx) and volatile organic compounds (VOCs), the primary pollutants that combine to form ozone. Emission testing also helps to reduce fine particulate (PM_{2.5}) levels. Under wintertime inversion conditions often seen in the Treasure Valley, NOx combines with ammonia to form ammonium nitrate, a secondary aerosol. Secondary aerosols are the largest contributor to Treasure Valley wintertime PM_{2.5} levels when inversion conditions exist.

As part of the ongoing air quality public awareness and outreach program, seasonal public service announcements (PSAs) continue to air on Treasure Valley television stations. The PSAs developed by the AQB and DEQ provide the public with information on air quality issues and specific actions that can be taken to improve air quality.

Conclusion

Results from the Ada and Canyon County programs indicate that both programs are continuing to obtain desirable results by significantly reducing harmful pollutants from motor vehicles. These results confirm that the two-county testing program is one of the most cost effective of all measures evaluated by the Treasure Valley Air Quality Council to reduce ozone precursors in the Treasure Valley and should be continued.