

Statement of Ted Leonard
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Pennsylvania AAA Federation
To the Senate Transportation Committee
May 10, 2019

First, I want to thank Senator Ward and Senator Sabatina and the entire Senate Transportation Committee for the opportunity to address two very important vehicle programs-the annual vehicle safety inspection and the vehicle emissions testing program.

Second, I want to personally and publicly thank Senator Ward as I and our clubs and the entire Pennsylvania AAA Federation have been speaking out on these issues for years and we very much appreciate your bringing these issues to the forefront. This is something we have wanted for a very long time. Thank you.

I also want to make sure that we publicly thank those members of the Senate who have, in the past, issued legislation about these two issues about which I am to speak. Those members include Senator Vogel, who has been a prime sponsor of the bill, and Senators Scarnati Hutchison, Yudichak, Costa and Brewster... All of whom were sponsors of legislation on the issues about which I am to speak. And I would be remiss if I didn't also thank Senator Vogel who has worked with us on these issues for many years. Thank you to all of you.

In researching background on the annual safety inspection, I found two studies that were conducted on the Pa. safety inspection program. The first was a March 2009 study entitled Pennsylvania's Vehicle Safety Inspection Program Effectiveness conducted by Cambridge Systematics for PennDOT. This research considered the effectiveness of vehicle safety inspections on the number of fatal crashes, and compared the benefits of the program to the cost of inspections. The study did not address failure rates but concluded the benefits of the program exceeded the user costs and that the Vehicle Safety Inspection program in Pennsylvania is effective and saves lives. The second study, Failure Rates and Data Driven Policies for Vehicle Safety Inspections in Pennsylvania, was conducted by Carnegie Mellon University and published in *Science Direct* in August 2015. This study concluded that the overall failure rate of inspections was in the 12-18 percent range. The study also noted that vehicles older than three years old or have more than 30,000 miles had higher failure rates than newer vehicles, and that due to technology, the vehicle fleet is getting safer. The report also noted that accurate inspection data is limited. The accompanying chart is drawn from the report.

The second program I'd like to address is the Emissions Testing program. In 1998-1999, I participated in an Emissions Testing Stakeholder group hosted by PennDOT and DEP (Deputy Secretary Betty Serian presiding.) The group forwarded recommendations in January 2000 but a

lawsuit subsequently overtook those recommendations and a US District court ordered into place the program we have had for nearly twenty years now.

In October 2017 the National Bureau of Economic Research published a report with the rather lengthy title of Technology and the Effectiveness of Regulatory Programs Over Time: Vehicle Emissions and Smog Checks with a Changing Fleet. The study concluded that emissions inspections have become less effective at reducing air pollution as more high-polluting vehicles from the 1970s and 1980s leave the fleet.

Emissions testing programs vary widely from state to state. Previously, California exempted six newer model years from testing. As of January 1, 2019, California now exempts eight model years and testing is biennial. Ohio requires testing in just seven of the state's eighty-eight counties and testing there is also biennial. Delaware exempts seven model years and again testing is biennial. New Jersey exempts five model years and testing is biennial. New York exempts two model years. Rhode Island exempts two model years and testing is biennial. Virginia tests in five northern counties, exempts four model years and testing is biennial.

AAA suggests the following policies regarding vehicle emissions testing and annual safety inspections:

- PennDOT should permit states to test only vehicles two years or older to be subject to safety inspections.
- PennDOT should only require vehicles ten years or older to be subject to emissions testing.
- State I/M programs should be subjected to comprehensive and periodic review to ensure programs are both reasonable and cost effective. This suggestion would also apply to the safety inspection program.
- Inspection of onboard diagnostic (OBD) systems should serve as a replacement for other types of emission inspection on vehicles so equipped, if it can be demonstrated that false failures are not a factor, and that this means of inspection is both cost effective and produces the desired emission reductions.

Review of Statistics

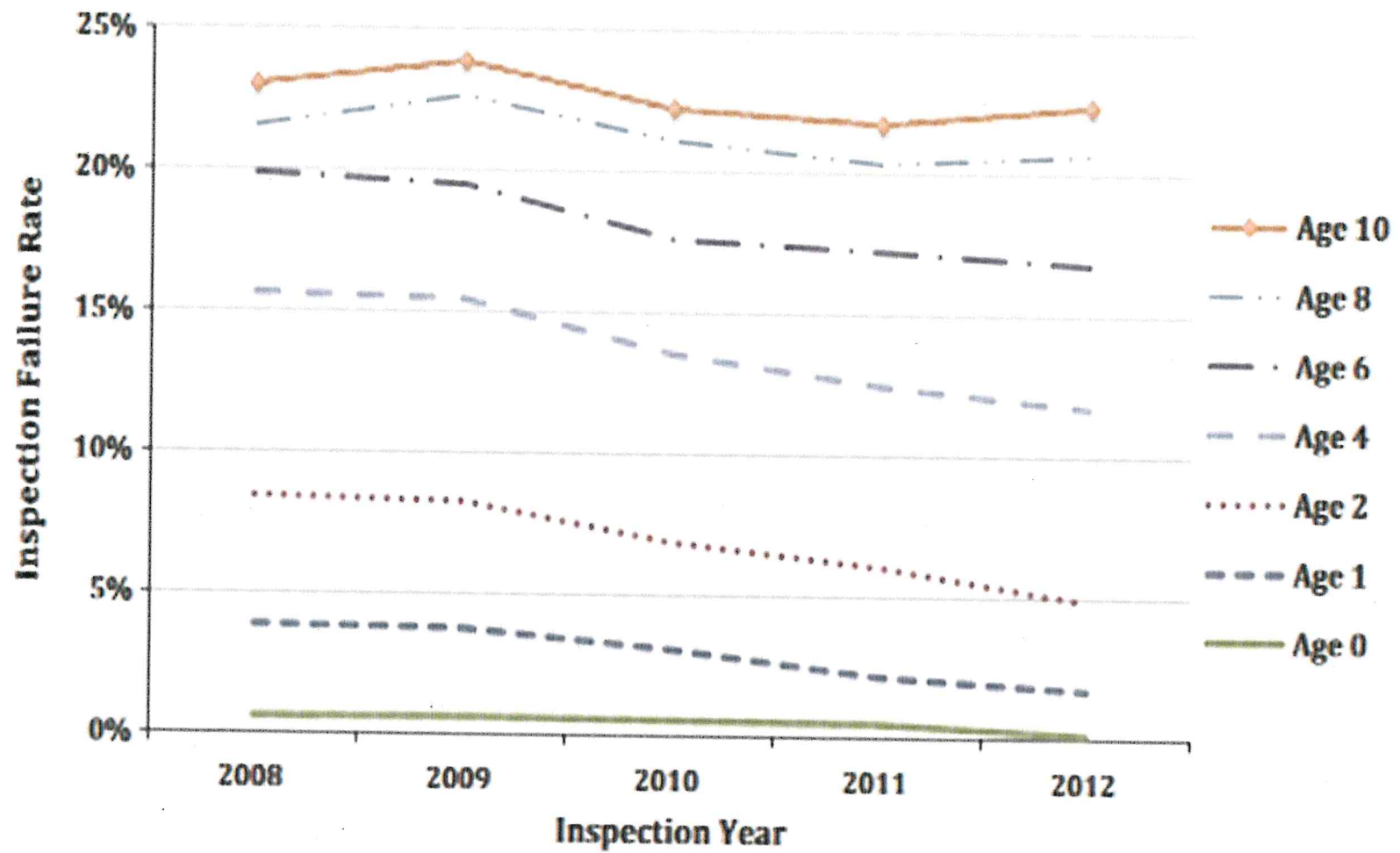


Fig. 7. Inspection failure rate time series, comparing vehicle age.

Failure Rates (%)

2017:	2.02% (excludes gas caps that failed, but were replaced during the initial test, resulting in the vehicle passing the test)
	3.27% (includes overall initial test failures plus gas caps that failed during the initial test and were replaced)
2016:	2.15% (excludes gas caps that failed, but were replaced during the initial test, resulting in the vehicle passing the test)
	3.47 % (includes overall initial test failures plus gas caps that failed during the initial test and were replaced)
2015:	2.24% (excludes gas caps that failed, but were replaced during the initial test, resulting in the vehicle passing the test)
	3.67% (includes overall initial test failures plus gas caps that failed during the initial test and were replaced)
2014:	2.31% (excludes gas caps that failed, but were replaced during the initial test, resulting in the vehicle passing the test)
	3.79% (includes overall initial test failures plus gas caps that failed during the initial test and were replaced)
2013:	2.35% (excludes gas caps that failed, but were replaced during the initial test, resulting in the vehicle passing the test)
	3.89% (includes overall initial test failures plus gas caps that failed during the initial test and were replaced)
2012:	2.38% (excludes gas caps that failed, but were replaced during the initial test, resulting in the vehicle passing the test)
	4.00% (includes overall initial test failures plus gas caps that failed during the initial test and were replaced)
2011:	2.42% (excludes gas caps that failed, but were replaced during the initial test, resulting in the vehicle passing the test)
	4.12% (includes overall initial test failures plus gas caps that failed during the initial test and were replaced)
2010:	2.43% (excludes gas caps that failed, but were replaced during the initial test, resulting in the vehicle passing the test)
	4.22% (includes overall initial test failures plus gas caps that failed during the initial test and were replaced)
2009:	2.40% (excludes gas caps that failed, but were replaced during the initial test, resulting in the vehicle passing the test)
	4.27% (includes overall initial test failures plus gas caps that failed during the initial test and were replaced)

Calendar Year 2011				Calendar Year 2012				Calendar Year 2013				Calendar Year 2014				Calendar Year 2015				Calendar Year 2016				Calendar Year 2017			
Model Year	Total Tested	Total Failed	Total Failed %	Model Year	Total Tested	Total Failed	Total Failed %	Model Year	Total Tested	Total Failed	Total Failed %	Model Year	Total Tested	Total Failed	Total Failed %	Model Year	Total Tested	Total Failed	Total Failed %	Model Year	Total Tested	Total Failed	Total Failed %	Model Year	Total Tested	Total Failed	Total Failed %
2012	2,460	17	0.69%	2013	2,530	6	0.24%	2014	2152	7	0.33%	2015	2661	9	0.34%	2016	2358	7	0.30%	2017	2408	6	0.25%	2018	1508	3	0.20%
2011	156,527	413	0.26%	2012	154,888	434	0.28%	2013	166344	352	0.21%	2014	168320	379	0.23%	2015	173554	364	0.21%	2016	169846	339	0.20%	2017	163398	362	0.22%
2010	400,973	1,224	0.31%	2011	432,753	1,127	0.26%	2012	457740	1200	0.26%	2013	484141	1293	0.27%	2014	490109	1257	0.26%	2015	521881	1192	0.23%	2016	504198	1124	0.22%
2009	340,489	1,335	0.39%	2010	404,565	1,375	0.34%	2011	444208	1528	0.34%	2012	473316	1534	0.32%	2013	505525	1719	0.34%	2014	508995	1653	0.32%	2015	536739	1492	0.28%
2008	490,672	2,413	0.49%	2009	335,770	2,337	0.70%	2010	398735	1748	0.44%	2011	441495	2023	0.46%	2012	463261	2106	0.45%	2013	494161	2138	0.43%	2014	500313	2004	0.40%
2007	473,684	3,684	0.78%	2008	455,799	3,563	0.78%	2009	317954	2852	0.90%	2010	373650	2259	0.60%	2011	409321	3147	0.77%	2012	427961	2874	0.67%	2013	449554	2690	0.60%
2006	448,441	5,859	1.31%	2007	450,369	4,561	1.01%	2008	435198	4307	0.99%	2009	304068	3433	1.13%	2010	357044	2992	0.84%	2011	391088	4727	1.21%	2012	405088	3399	0.84%
2005	460,493	7,587	1.65%	2006	425,997	7,093	1.67%	2007	429434	5603	1.30%	2008	413951	5218	1.26%	2009	289126	3965	1.37%	2010	339940	4161	1.22%	2011	367489	5269	1.43%
2004	443,450	10,017	2.26%	2005	434,770	8,704	2.00%	2006	403550	7741	1.92%	2007	405271	6768	1.67%	2008	390975	6316	1.62%	2009	273001	5034	1.84%	2010	321017	5207	1.62%
2003	409,709	11,034	2.69%	2004	412,180	9,507	2.31%	2005	408374	9962	2.44%	2006	377302	9618	2.55%	2007	378884	7937	2.09%	2008	365235	7250	1.99%	2009	253894	5642	2.22%
2002	386,958	16,405	4.24%	2003	377,556	11,375	3.01%	2004	384925	11929	3.10%	2005	377690	10052	2.66%	2006	349758	10812	3.09%	2007	349966	7651	2.19%	2008	333583	7294	2.19%
2001	322,436	14,645	4.54%	2002	350,326	15,372	4.39%	2003	346553	11306	3.26%	2004	352875	12489	3.54%	2005	345758	9814	2.84%	2006	321185	12292	3.83%	2007	317449	9075	2.86%
2000	313,169	13,670	4.37%	2001	287,113	14,776	5.15%	2002	316039	15307	4.84%	2003	313945	13792	4.39%	2004	320163	12120	3.79%	2005	310750	9805	3.16%	2006	285672	11713	4.10%
1999	245,294	11,245	4.58%	2000	274,757	12,371	4.50%	2001	256111	15196	5.93%	2002	278862	14114	5.06%	2003	279192	12619	4.52%	2004	285791	12377	4.33%	2005	272287	9438	3.47%
1998	198,571	9,059	4.56%	1999	210,459	10,360	4.92%	2000	239839	12068	5.03%	2001	221270	13563	6.13%	2002	241539	12998	5.38%	2003	244374	12037	4.93%	2004	246598	11364	4.61%
1997	164,056	9,264	5.65%	1998	167,245	7,441	4.45%	1999	180087	8817	4.90%	2000	203045	10860	5.35%	2001	187347	11585	6.18%	2002	206135	11230	5.45%	2003	204037	9454	4.63%
1996	115,911	7,121	6.14%	1997	135,900	7,616	5.60%	1998	140648	6140	4.37%	1999	149765	7239	4.83%	2000	169736	9385	5.53%	2001	155626	8706	5.59%	2002	167575	8588	5.12%
1995	95,904	3,454	3.60%	1996	94,619	5,978	6.32%	1997	111822	5330	4.77%	1998	116141	5285	4.55%	1999	122664	5721	4.66%	2000	139148	6958	5.00%	2001	124408	6644	5.34%
1994	68,134	2,300	3.38%	1995	76,386	2,722	3.56%	1996	77585	5071	6.54%	1997	91314	4291	4.70%	1998	94345	4264	4.52%	1999	99821	4416	4.42%	2000	109511	5521	5.04%
1993	46,270	1,824	3.94%	1994	53,986	2,252	4.17%	1995	60461	1755	2.90%	1996	61290	3759	6.13%	1997	73723	3715	5.04%	1998	76211	3510	4.61%	1999	78457	3555	4.53%
1992	33,797	1,553	4.60%	1993	36,085	1,394	3.86%	1994	43539	1980	4.55%	1995	47465	1386	2.92%	1996	48800	3156	6.47%	1997	59283	2850	4.81%	1998	59542	2629	4.42%
1991	24,616	1,025	4.16%	1992	26,317	1,411	5.36%	1993	28136	1094	3.89%	1994	33341	1383	4.15%	1995	37055	1169	3.15%	1996	38296	2006	5.24%	1997	46051	2136	4.64%
1990	19,576	896	4.58%	1991	19,168	786	4.10%	1992	20756	1217	5.86%	1993	21474	756	3.52%	1994	26306	1165	4.43%	1995	29617	1060	3.58%	1996	29248	1493	5.10%
1989	15,313	701	4.58%	1990	15,385	725	4.71%	1991	14850	565	3.80%	1992	15902	732	4.60%	1993	16802	590	3.51%	1994	20924	867	4.14%	1995	22236	656	2.95%
1988	11,941	583	4.88%	1989	12,091	503	4.16%	1990	12178	459	3.77%	1991	11438	409	3.58%	1992	12183	456	3.74%	1993	13169	463	3.52%	1994	15994	945	5.91%
1987	8,009	421	5.26%	1988	9,213	444	4.82%	1989	9736	402	4.13%	1990	9297	326	3.51%	1991	9201	461	5.01%	1992	9519	329	3.46%	1993	9950	324	3.26%
1986	5,628	332	5.90%	1987	6,315	348	5.51%	1988	7420	314	4.23%	1989	7445	301	4.04%	1990	7246	290	4.00%	1991	7148	268	3.75%	1992	7106	234	3.29%
1985	3,912	130	3.32%	1986	4,969	161	3.24%	1987	5744	150	2.61%	1988	6195	124	2.00%	1989	6699	115	1.72%	1990	6542	89	1.36%	1991	6229	91	1.46%
1984	2,759	62	2.25%	1985	3,370	113	3.35%	1986	4120	90	2.18%	1987	4620	79	1.71%	1988	5126	66	1.29%	1989	5569	88	1.58%	1990	5424	62	1.14%
1983	1,461	48	3.29%	1984	2,385	62	2.60%	1985	2819	68	2.41%	1986	3420	78	2.28%	1987	3801	51	1.34%	1988	4343	61	1.40%	1989	4620	65	1.41%
1982	966	19	1.97%	1983	1,272	38	2.99%	1984	1947	55	2.82%	1985	2323	39	1.68%	1986	2880	68	2.36%	1987	3257	46	1.41%	1988	3521	40	1.14%
1981	729	23	3.16%	1982	817	16	1.96%	1983	1040	25	2.40%	1984	1742	29	1.66%	1985	1929	31	1.61%	1986	2433	37	1.52%	1987	2778	36	1.30%
1980	686	8	1.17%	1981	650	17	2.62%	1982	695	11	1.58%	1983	905	14	1.55%	1984	1421	23	1.62%	1985	1701	19	1.12%	1986	2000	24	1.20%
1979	1,219	22	1.80%	1980	642	12	1.87%	1981	601	14	2.33%	1982	641	13	2.03%	1983	789	10	1.27%	1984	1259	12	0.95%	1985	1372	20	1.46%
1978	1,002	22	2.20%	1979	1,105	23	2.08%	1980	510	3	0.59%	1981	510	8	1.57%	1982	461	13	2.82%	1983	691	10	1.45%	1984	1039	10	0.96%
1977	699	12	1.72%	1978	930	22	2.37%	1979	940	16	1.70%	1980	477	11	2.31%	1981	459	10	2.18%	1982	465	4	0.86%	1983	562	12	2.14%
1976	457	11	2.41%	1977	634	13	2.05%	1978	790	14	1.77%	1979	820	8	0.98%	1980	393	7	1.78%	1981	415	3	0.72%	1982	415	6	1.45%
1975	254	9	3.54%	1976	394	6	1.52%	1977	579	8	1.38%	1978	711	9	1.27%	1979	739	6	0.81%	1980	344	2	0.58%	1981	366	7	1.91%
	5,716,625	138,447	2.42	1975	244	3	1.23%	1976	326	3	0.92%	1977	515	10	1.94%	1978	607	9	1.48%	1979	671	8	1.19%	1980	324	1	0.31%
	Gas Cap Fails	97,259			5,679,954	135,067	2.38		5,734,715	134,710	2.35		5,780,120	133,701	2.31		5,828,167	130,555	2.24		5,890,491	126,596	2.15		5,863,337	118,656	2.02
	Adj Total Fails	235,706	4.12		Gas Cap Fails	92,221			Gas Cap Fails	88,266			Gas Cap Fails	85,156			Gas Cap Fails	83,195			Gas Cap Fails	77,776			Gas Cap Fails	73,357	
					Adj Total Fails	227,288	4.00		Adj Total Fails	222,976	3.89		Adj Total Fails	218,857	3.79		Adj Total Fails	213,750	3.67		Adj Total Fails	204,372	3.47		Adj Total Fails	192,013	3.27