MANEVU Technical Support Committee

Emissions Trends Report to Support MANEVU States Progress Reports for the Second Regional Haze Planning Period

August 13, 2024

1. Introduction

Paragraph (g) of the Regional Haze Rule (RHR) at 40 CFR Part 51.308 spells out the requirements for regional haze progress reports. States are currently drafting their "mid-course" progress reports for the second regional haze planning period covering the timeframe from 2018 to 2028. These second-round progress reports are due on January 31, 2025.

Paragraph (g)(4) of the RHR requires "An analysis tracking the change over the period since the period addressed in the most recent plan…in emissions of pollutants contributing to visibility impairment from all sources and activities in the State. Emissions changes should be identified by type of source or activity." This emissions inventory trends report is intended to provide Mid-Atlantic and Northeast Visibility Union (MANEVU) states with the data needed to fulfill the requirements of RHR paragraph (g)(4). It provides a comprehensive accounting of emissions from all sources and activities in the MANEVU states, and it breaks down the emissions into the following categories:

- Point sources represent emissions sources located at discrete geographic points. Examples include power plants, factories, industries, and large institutional facilities. Point sources typically hold a federal/state/tribal/local air permit and report their emissions to the state/tribal/local air agency and/or EPA directly. Other types of point sources include airports and large rail yards.
- Nonpoint sources (also called area sources) are those that are too widespread or numerous to be accounted for individually. Therefore, their emissions are estimated using more broad-based estimation methods and data. There are many nonpoint subcategories, but a handful of examples include residential fuel combustion, consumer solvent use, commercial cooking, and agricultural tilling.
- Nonroad sources are equipment and vehicles that do not primarily travel on roadways. Examples include marine vessels, rail locomotives, construction equipment, recreational vehicles, and lawn & garden equipment.
- Onroad sources are vehicles that primarily travel on roadways such as cars, trucks, buses, and motorcycles.

RHR paragraph (g)(4) also states "With respect to all sources and activities, the analysis must extend at least through the most recent year for which the state has submitted emission inventory information to the Administrator in compliance with the triennial reporting requirements of subpart A of this part as of a date 6 months preceding the required date of the progress report." In this sentence, "subpart A" refers to 40 CFR Parts 51.1 to 51.50, the Air Emissions Reporting Requirements (AERR). Emissions inventory information submitted to fulfill the AERR becomes the basis of the National Emissions Inventory, or NEI. The most recent available NEI as of six months prior to the second-round mid-course progress report deadline is the 2020 NEI.

Paragraph (g)(4) further states "With respect to sources that report directly to a centralized emissions data system operated by the Administrator, the analysis must extend through the

most recent year for which the Administrator has provided a State-level summary of such reported data or an internet-based tool by which the State may obtain such a summary as of a date 6 months preceding the required date of the progress report." As of a date six months preceding the date of the second-round mid-course progress reports, the most recent such data is the 2023 emissions data reported to the Clean Air Markets program. Data reported to this program are referred to as Clean Air Markets Program Data (CAMPD).

The sections that follow provide emissions summaries for the following pollutants, which are known to contribute to visibility impairment:

- Ammonia (NH_3)
- Nitrogen Oxides (NOx)
- Particulate Matter < 10 microns (PM10)
- Particulate Matter < 2.5 microns (PM2.5)
- Sulfur Dioxide (SO_2)
- Volatile Organic Compounds (VOC)

States covered in the summaries include the MANEVU states: Connecticut (CT), Delaware (DE), the District of Columbia (DC), Maine (ME), Maryland (MD), Massachusetts (MA), New Hampshire (NH), New Jersey (NJ), New York (NY), Pennsylvania (PA), Rhode Island (RI), and Vermont (VT). This report also covers those states that were found by MANEVU technical analysis to be reasonably anticipated to contribute to visibility impairment at one or more MANEVU Class I areas. These states include Alabama (AL), Florida (FL), Illinois (IL), Indiana (IN), Kentucky (KY), Louisiana (LA), Michigan (MI), Missouri (MO), North Carolina (NC), Ohio (OH), Tennessee (TN), Texas (TX), Virginia (VA), and West Virginia (WV).

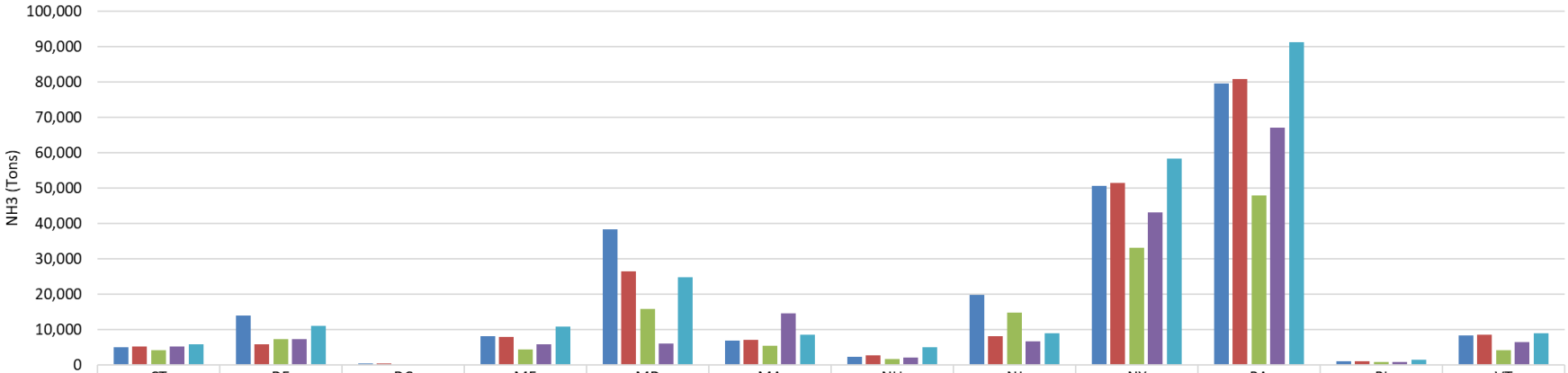
It is hoped that the information in this report will also help inform a response to RHR paragraph (g)(5), which requires "An assessment of any significant changes in anthropogenic emissions within or outside the State…and whether they have limited or impeded progress in reducing pollutant emissions and improving visibility."

The sections below provide tabulations and charts for each visibility-impairing pollutant. In addition, Appendix A provides tabulations and charts for each individual MANEVU state. Appendix B provides tables that specifically compare the 2020 NEI with the 2017 NEI for each MANEVU state. All emissions presented in this report are anthropogenic (human-caused) and displayed in tons per year.

2. Ammonia (NH3)

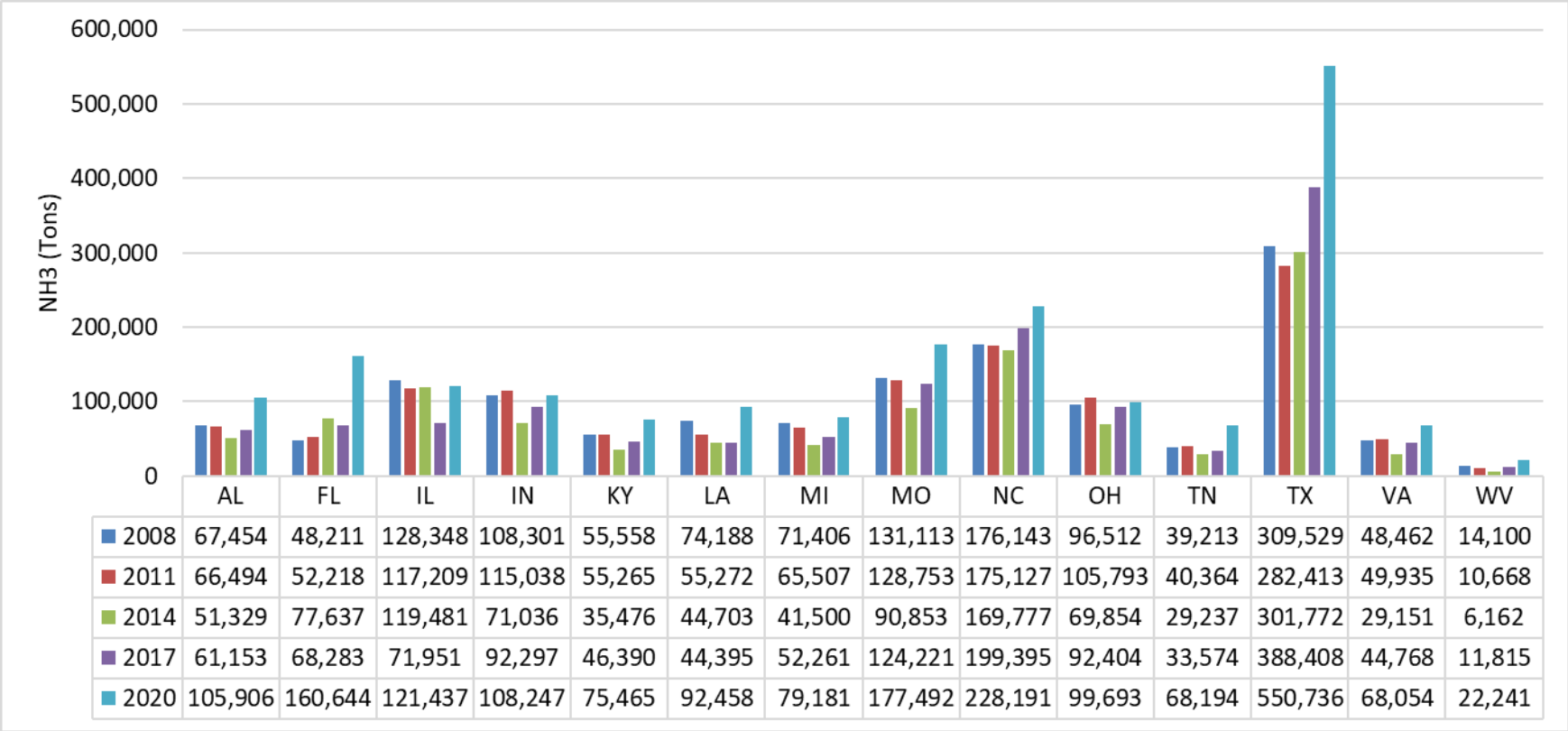
Figure 2-1 shows ammonia emissions by NEI year for the MANEVU states. Similarly, Figure 2-2 shows ammonia emissions by NEI year for the contributing states. Figure 2-3 shows ammonia emissions by NEI year and source category for the total MANEVU region. Tabulations and plots for individual MANEVU states are shown in Appendix A.

Figure 2-1: Ammonia Emissions by NEI Year for the MANE-VU States



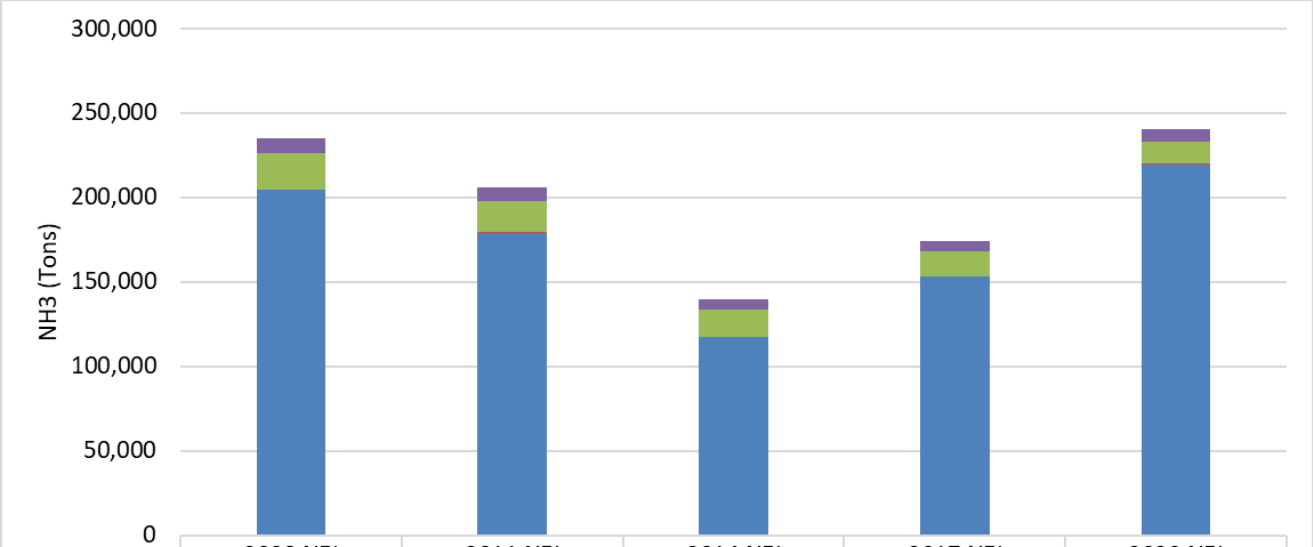
	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT
2008	4,989	13,975	354	8,207	38,288	6,929	2,311	19,804	50,737	79,588	1,092	8,379
2011	5,200	5,771	330	8,024	26,429	7,177	2,684	8,049	51,487	80,871	1,075	8,567
2014	4,194	7,252	317	4,356	15,746	5,411	1,645	14,895	33,110	48,000	862	4,148
2017	5,296	7,353	263	5,765	6,108	14,492	2,122	6,642	43,180	67,183	873	6,490
2020	5,930	11,119	236	10,795	24,822	8,477	4,959	8,875	58,297	91,288	1,542	8,879

Figure 2-2: Ammonia Emissions by NEI Year for the Contributing States



	AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV
2008	67,454	48,211	128,348	108,301	55,558	74,188	71,406	131,113	176,143	96,512	39,213	309,529	48,462	14,100
2011	66,494	52,218	117,209	115,038	55,265	55,272	65,507	128,753	175,127	105,793	40,364	282,413	49,935	10,668
2014	51,329	77,637	119,481	71,036	35,476	44,703	41,500	90,853	169,777	69,854	29,237	301,772	29,151	6,162
2017	61,153	68,283	71,951	92,297	46,390	44,395	52,261	124,221	199,395	92,404	33,574	388,408	44,768	11,815
2020	105,906	160,644	121,437	108,247	75,465	92,458	79,181	177,492	228,191	99,693	68,194	550,736	68,054	22,241

Figure 2-3: Ammonia Emissions by NEI Year and Source Category for the MANEVU Region



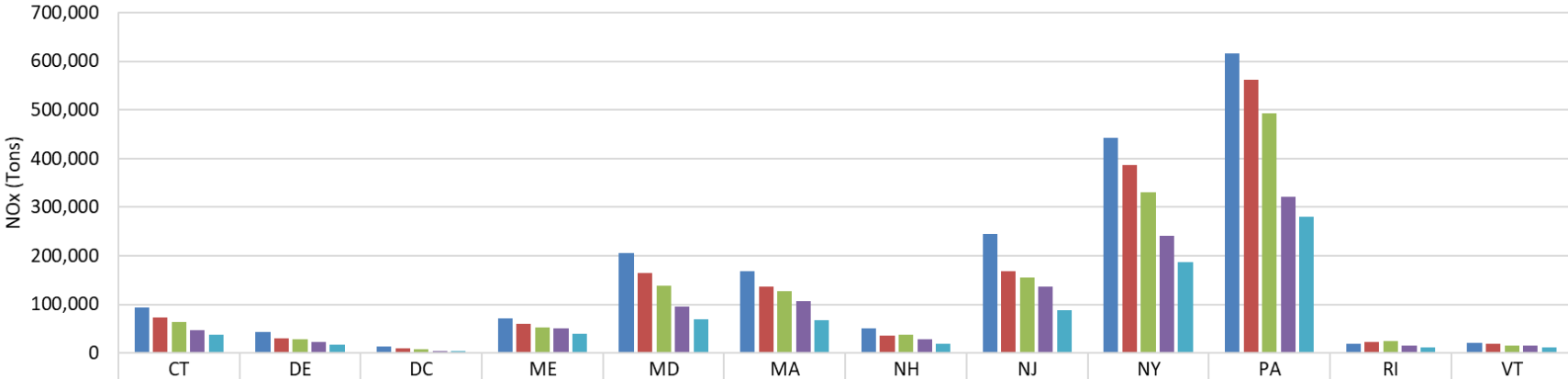
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	8,420	7,910	6,466	6,047	7,892
Onroad	21,639	18,282	15,967	14,901	12,907
Nonroad	313	323	340	300	318
Nonpoint	204,281	179,150	117,163	152,853	219,544

Figures 2-1 and 2-2 show that for almost all the MANEVU states, and all the contributing states, 2020 NEI emissions are higher than those for the 2017 NEI (and many of the other NEI years as well). This is further shown in Figure 2-3 for the MANEVU region in total. According to documentation for the 2020 NEI, changes and improvements were made to the estimation methodology for agricultural fertilizers. This resulted in an approximately 60% increase in nationwide ammonia emissions from this category between the 2017 and 2020 NEIs. Similarly, agricultural livestock waste emissions went up approximately 5% because of methodology changes and improvements. Therefore, it is likely that the methodology changes between the two NEI years mask the actual changes in ammonia emissions, and no definitive conclusion can be made on ammonia emission trends during this time.

3. Nitrogen Oxides (NOx)

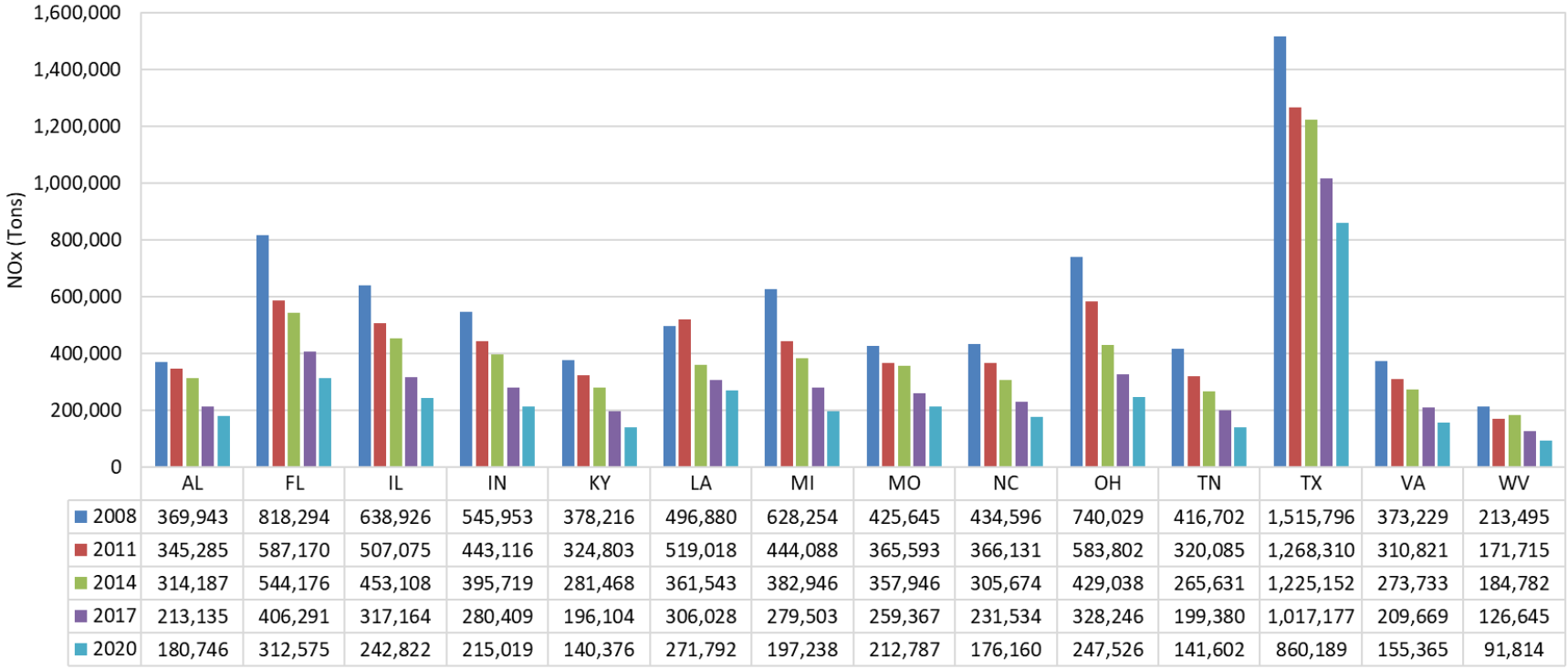
Figure 3-1 shows NOx emissions by NEI year for the MANEVU states. Similarly, Figure 3-2 shows NOx emissions by NEI year for the contributing states. Figure 3-3 shows NOx emissions by NEI year and source category for the total MANEVU region. Note that Figure 3-3 breaks down point sources into those that report to CAMPD and those that do not. Tabulations and plots for individual MANEVU states are shown in Appendix A.

Figure 3-1: NOx Emissions by NEI Year for the MANE-VU States



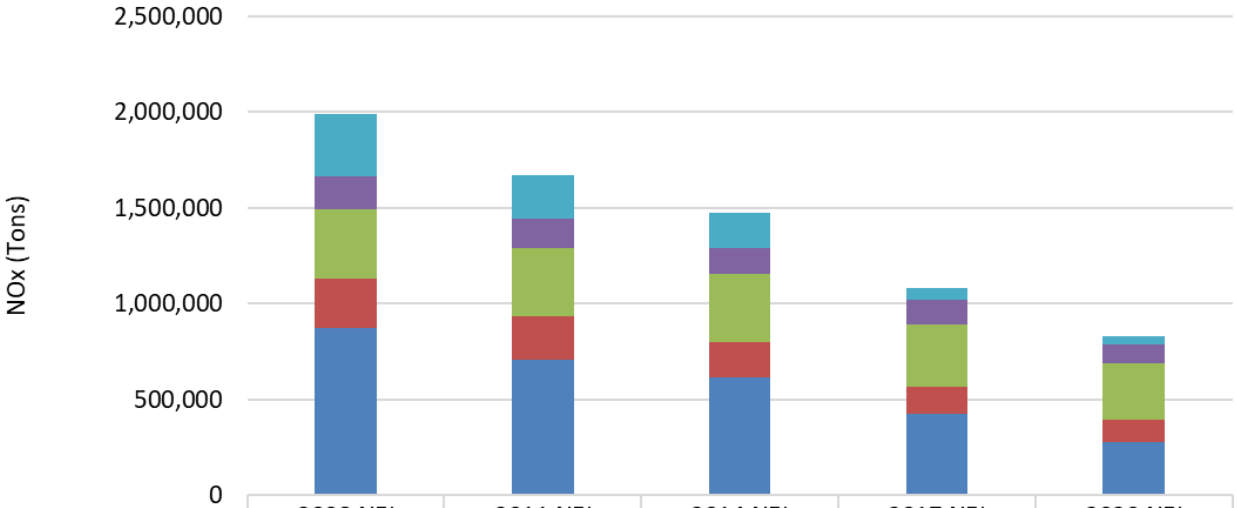
	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT
2008	93,080	42,790	13,189	71,606	205,239	168,599	50,267	244,552	442,093	616,320	18,963	20,903
2011	72,828	29,436	9,403	59,785	165,185	136,892	36,566	168,297	387,262	561,928	22,489	19,635
2014	63,003	27,684	8,566	52,346	138,496	127,304	38,093	154,655	330,782	492,755	24,716	15,697
2017	46,575	22,882	4,780	49,890	96,310	105,860	28,533	136,961	240,411	321,900	14,865	15,311
2020	36,778	16,532	3,553	38,936	70,228	66,773	19,515	88,163	186,182	280,834	12,052	11,854

Figure 3-2: NOx Emissions by NEI Year for the Contributing States



	AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV
2008	369,943	818,294	638,926	545,953	378,216	496,880	628,254	425,645	434,596	740,029	416,702	1,515,796	373,229	213,495
2011	345,285	587,170	507,075	443,116	324,803	519,018	444,088	365,593	366,131	583,802	320,085	1,268,310	310,821	171,715
2014	314,187	544,176	453,108	395,719	281,468	361,543	382,946	357,946	305,674	429,038	265,631	1,225,152	273,733	184,782
2017	213,135	406,291	317,164	280,409	196,104	306,028	279,503	259,367	231,534	328,246	199,380	1,017,177	209,669	126,645
2020	180,746	312,575	242,822	215,019	140,376	271,792	197,238	212,787	176,160	247,526	141,602	860,189	155,365	91,814

Figure 3-3: NOx Emissions by NEI Year and Source Category for the MANEVU Region

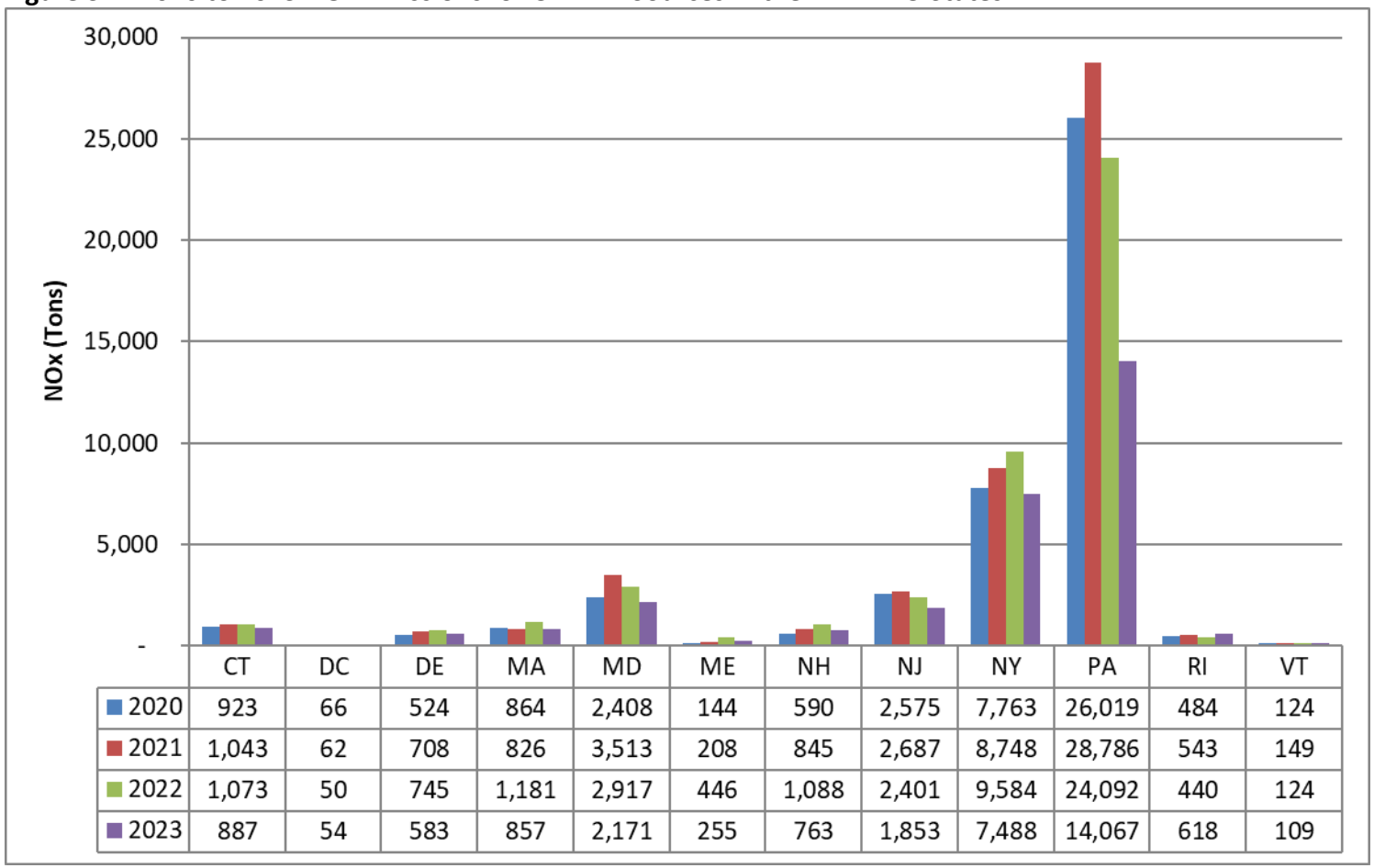


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	322,858	226,377	181,908	64,292	42,483
Non-CAMPD Point	171,762	150,174	138,787	129,721	97,612
Nonpoint	362,590	359,283	352,127	324,997	294,856
Nonroad	257,356	223,656	187,442	140,314	121,214
Onroad	873,035	710,215	613,832	424,955	275,235

For just about all the MANEVU and contributing states, NOx emissions have declined steadily between the 2008 and 2020 NEIs. Figure 3-3 shows that many of these NOx reductions have come from the onroad mobile sector. Information on Federal programs to control onroad mobile source emissions can be found on EPA's Transportation, Air Pollution, and Climate Change website at https://www.epa.gov/transportation-air-pollution-and-climate-change. Other reductions have come from nonroad sources and those sources that report to CAMPD.

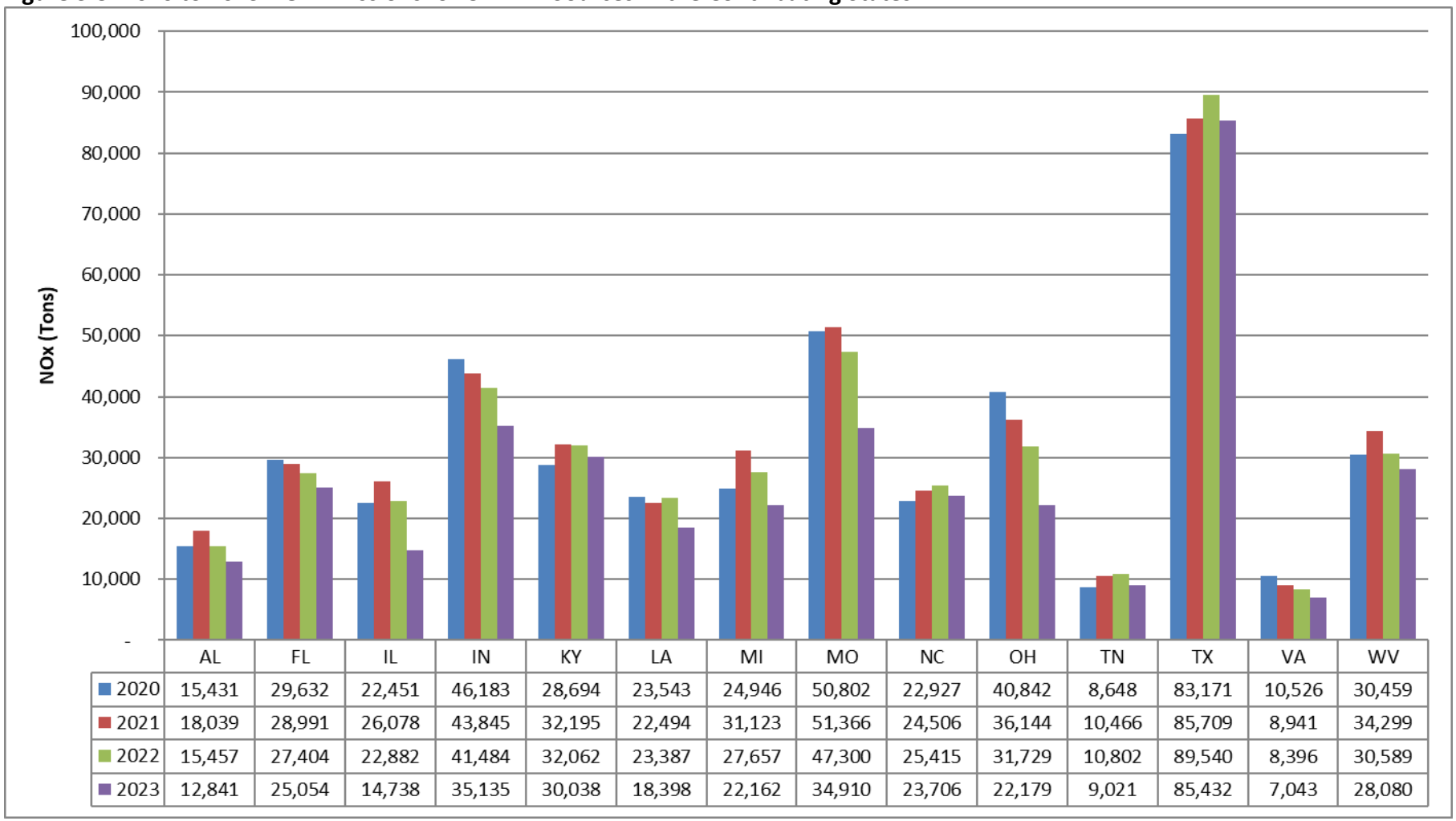
Figure 3-4 shows NOx emissions between 2020 and 2023 for those MANEVU sources that report to CAMPD. 2023 CAMPD NOx emissions are lower than prior years for almost every MANEVU state. Figure 3-5 shows 2020 to 2023 CAMPD source emissions for the contributing states. Like the MANEVU states, 2023 CAMPD NOx emissions are lower than prior years for almost every contributing state.

Figure 3-4: 2020 to 2023 NOx Emissions for CAMPD Sources in the MANEVU States



	CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT
2020	923	66	524	864	2,408	144	590	2,575	7,763	26,019	484	124
2021	1,043	62	708	826	3,513	208	845	2,687	8,748	28,786	543	149
2022	1,073	50	745	1,181	2,917	446	1,088	2,401	9,584	24,092	440	124
2023	887	54	583	857	2,171	255	763	1,853	7,488	14,067	618	109

Figure 3-5: 2020 to 2023 NOx Emissions for CAMPD Sources in the Contributing States

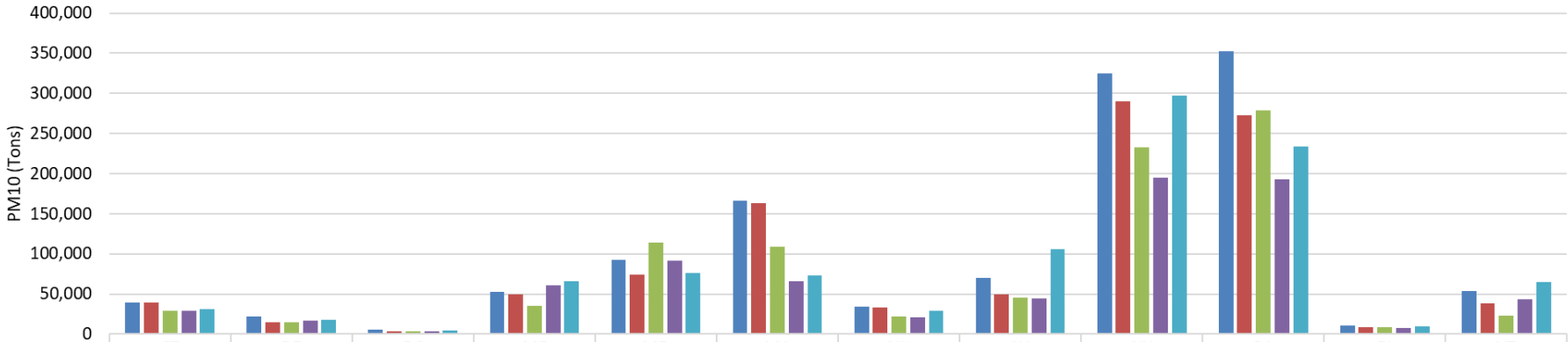


	AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV
2020	15,431	29,632	22,451	46,183	28,694	23,543	24,946	50,802	22,927	40,842	8,648	83,171	10,526	30,459
2021	18,039	28,991	26,078	43,845	32,195	22,494	31,123	51,366	24,506	36,144	10,466	85,709	8,941	34,299
2022	15,457	27,404	22,882	41,484	32,062	23,387	27,657	47,300	25,415	31,729	10,802	89,540	8,396	30,589
2023	12,841	25,054	14,738	35,135	30,038	18,398	22,162	34,910	23,706	22,179	9,021	85,432	7,043	28,080

4. Particulate Matter < 10 Microns (PM10)

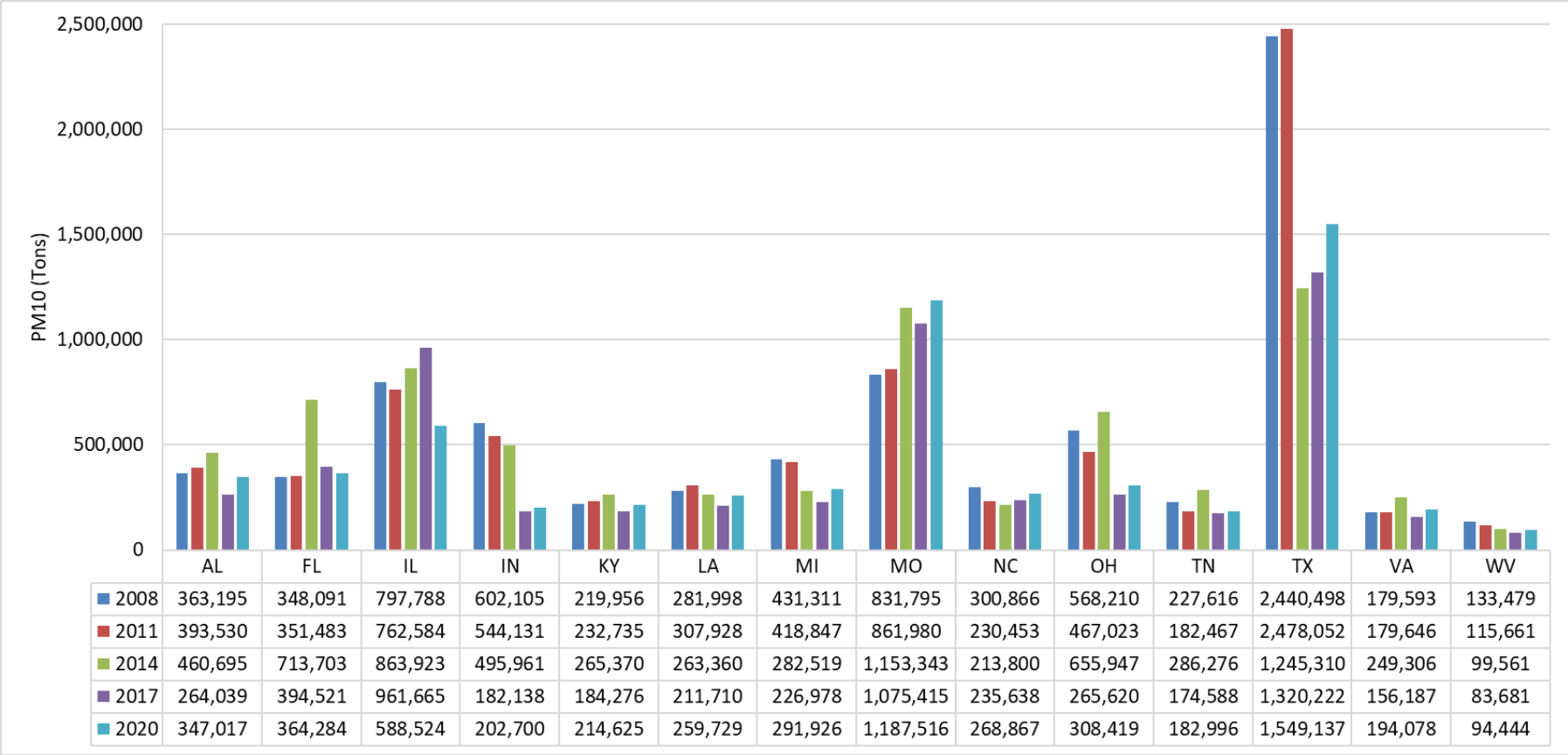
Figure 4-1 shows PM10 emissions by NEI year for the MANEVU states. Similarly, Figure 4-2 shows PM10 emissions by NEI year for the contributing states. Figure 4-3 shows PM10 emissions by NEI year and source category for the total MANEVU region. Tabulations and plots for individual MANEVU states are shown in Appendix A.

Figure 4-1: PM10 Emissions by NEI Year for the MANE-VU States



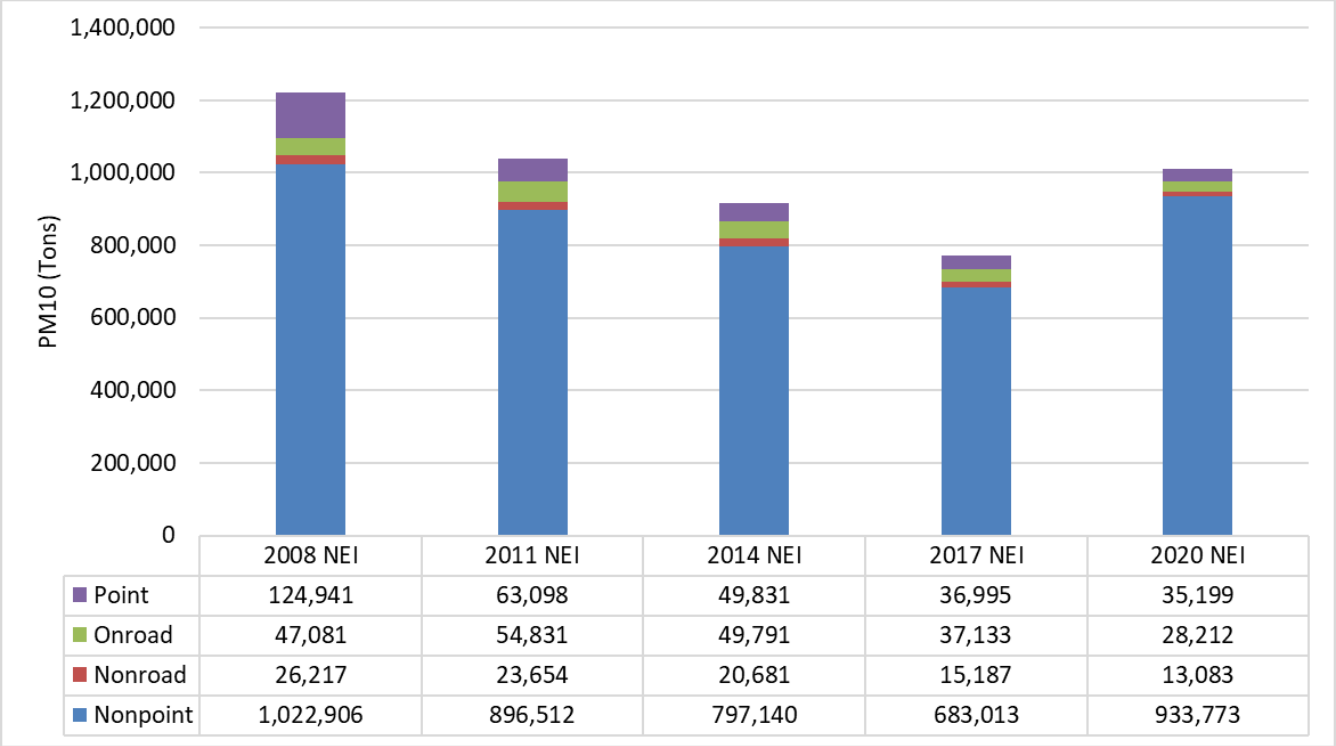
	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT
2008	39,048	21,544	5,211	52,311	92,156	165,801	33,814	70,431	325,041	352,392	10,267	53,130
2011	39,097	15,071	3,410	49,526	74,522	162,952	33,379	49,742	290,566	273,067	8,387	38,373
2014	28,842	14,896	3,865	35,606	114,097	109,218	21,985	45,946	232,441	278,725	8,400	23,422
2017	29,058	17,213	3,771	60,347	91,366	65,922	21,142	44,487	195,140	193,114	7,148	43,618
2020	31,279	17,567	4,525	65,977	75,977	73,575	29,167	106,187	297,593	234,247	9,141	65,031

Figure 4-2: PM10 Emissions by NEI Year for the Contributing States



	AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV
2008	363,195	348,091	797,788	602,105	219,956	281,998	431,311	831,795	300,866	568,210	227,616	2,440,498	179,593	133,479
2011	393,530	351,483	762,584	544,131	232,735	307,928	418,847	861,980	230,453	467,023	182,467	2,478,052	179,646	115,661
2014	460,695	713,703	863,923	495,961	265,370	263,360	282,519	1,153,343	213,800	655,947	286,276	1,245,310	249,306	99,561
2017	264,039	394,521	961,665	182,138	184,276	211,710	226,978	1,075,415	235,638	265,620	174,588	1,320,222	156,187	83,681
2020	347,017	364,284	588,524	202,700	214,625	259,729	291,926	1,187,516	268,867	308,419	182,996	1,549,137	194,078	94,444

Figure 4-3: PM10 Emissions by NEI Year and Source Category for the MANEVU Region



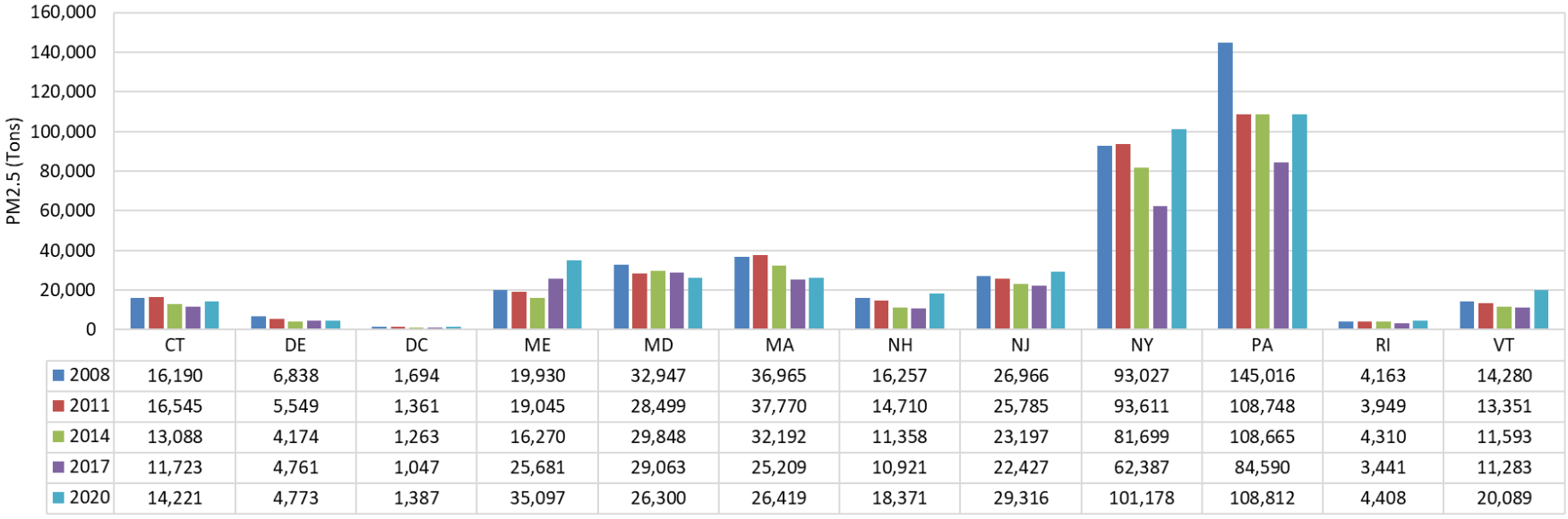
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	124,941	63,098	49,831	36,995	35,199
Onroad	47,081	54,831	49,791	37,133	28,212
Nonroad	26,217	23,654	20,681	15,187	13,083
Nonpoint	1,022,906	896,512	797,140	683,013	933,773

PM10 saw a steady decline in emissions between the 2008 and 2017 NEIs. For the 2020 NEI, the 2020 meteorological adjustment factor caused an increase in unpaved road dust estimates. Further, the Energy Information Administration State Energy Data System changed its wood consumption estimation methodology, which resulted in higher wood consumption estimates for northern states. Therefore, the change in 2020 nonpoint PM10 emissions is likely a result of these methodology revisions, and no definitive conclusions can be made on emissions trends during this time.

5. Particulate Matter < 2.5 Microns (PM2.5)

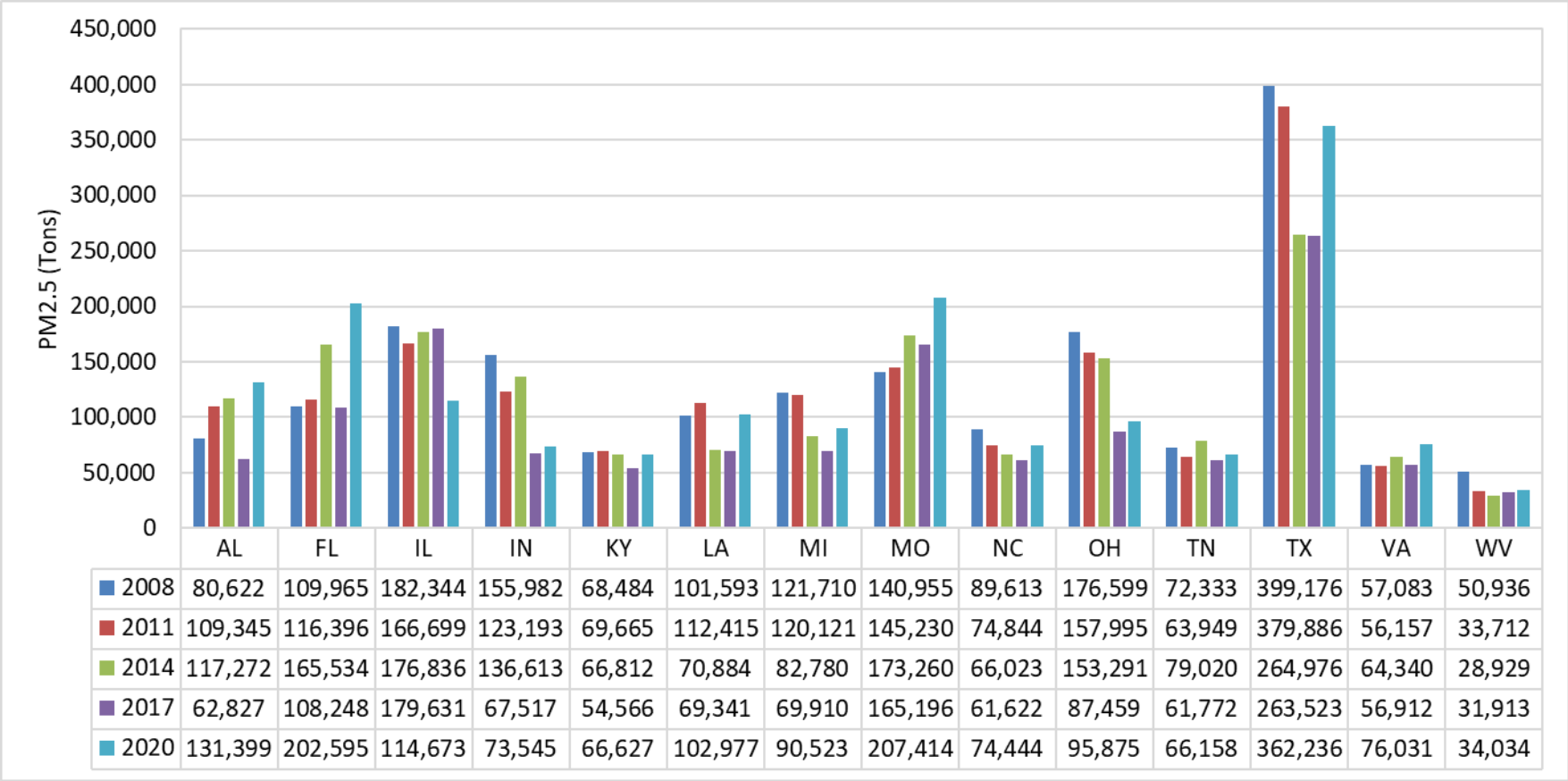
Figure 5-1 shows PM2.5 emissions by NEI year for the MANEVU states and Figure 5-2 shows PM2.5 emissions by NEI year for the contributing states. Figure 5-3 shows PM2.5 emissions by NEI year and source category for the total MANEVU region. Tabulations and plots for individual MANEVU states are shown in Appendix A.

Figure 5-1: PM2.5 Emissions by NEI Year for the MANE-VU States



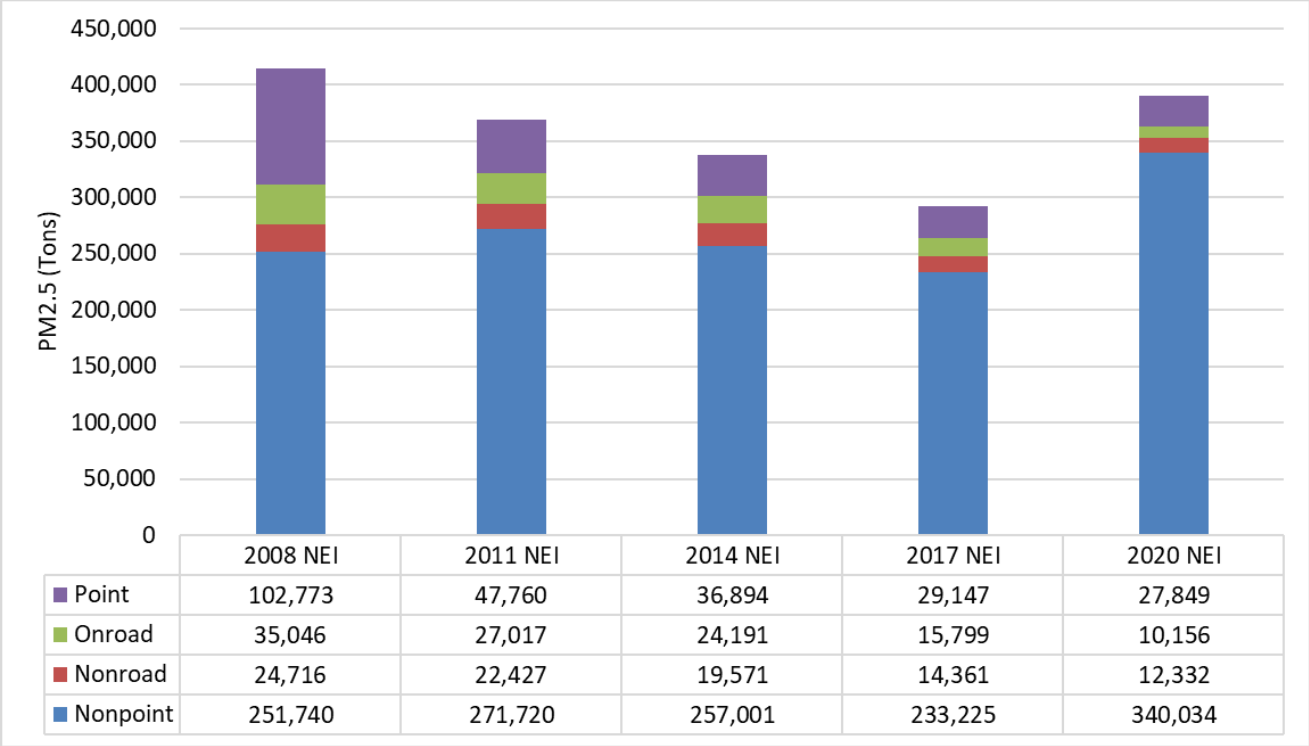
	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT
2008	16,190	6,838	1,694	19,930	32,947	36,965	16,257	26,966	93,027	145,016	4,163	14,280
2011	16,545	5,549	1,361	19,045	28,499	37,770	14,710	25,785	93,611	108,748	3,949	13,351
2014	13,088	4,174	1,263	16,270	29,848	32,192	11,358	23,197	81,699	108,665	4,310	11,593
2017	11,723	4,761	1,047	25,681	29,063	25,209	10,921	22,427	62,387	84,590	3,441	11,283
2020	14,221	4,773	1,387	35,097	26,300	26,419	18,371	29,316	101,178	108,812	4,408	20,089

Figure 5-2: PM2.5 Emissions by NEI Year for the Contributing States



	AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV
2008	80,622	109,965	182,344	155,982	68,484	101,593	121,710	140,955	89,613	176,599	72,333	399,176	57,083	50,936
2011	109,345	116,396	166,699	123,193	69,665	112,415	120,121	145,230	74,844	157,995	63,949	379,886	56,157	33,712
2014	117,272	165,534	176,836	136,613	66,812	70,884	82,780	173,260	66,023	153,291	79,020	264,976	64,340	28,929
2017	62,827	108,248	179,631	67,517	54,566	69,341	69,910	165,196	61,622	87,459	61,772	263,523	56,912	31,913
2020	131,399	202,595	114,673	73,545	66,627	102,977	90,523	207,414	74,444	95,875	66,158	362,236	76,031	34,034

Figure 5-3: PM2.5 Emissions by NEI Year and Source Category for the MANEVU Region



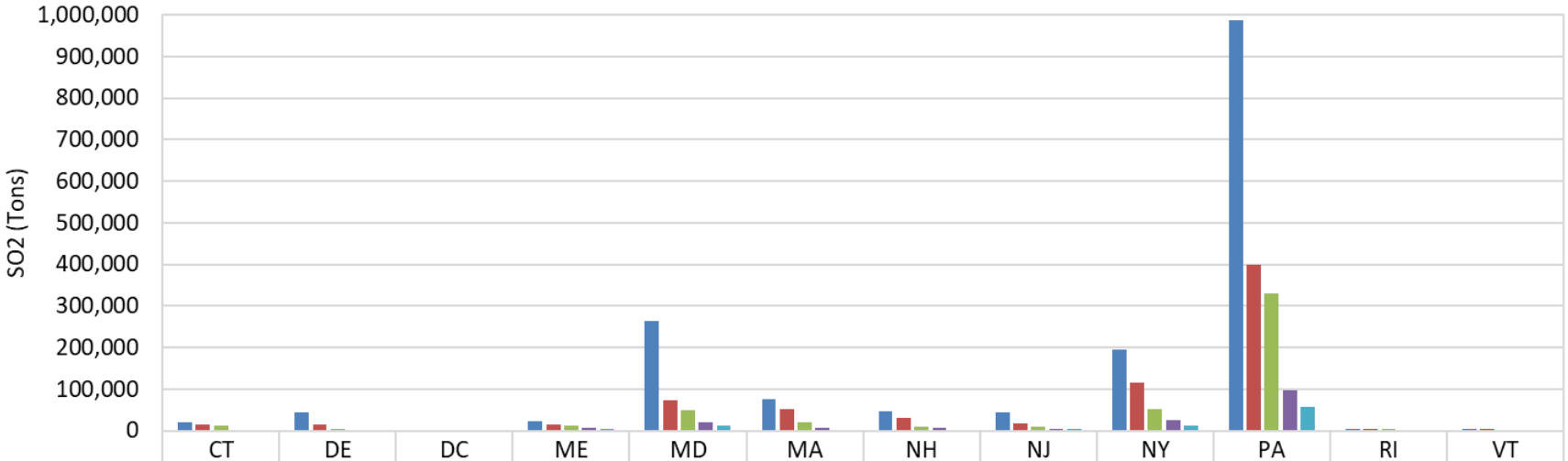
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	102,773	47,760	36,894	29,147	27,849
Onroad	35,046	27,017	24,191	15,799	10,156
Nonroad	24,716	22,427	19,571	14,361	12,332
Nonpoint	251,740	271,720	257,001	233,225	340,034

Like the discussion above for PM10, PM2.5 saw a steady decline in emissions between the 2008 and 2017 NEIs, and the increase in 2020 nonpoint PM2.5 emissions is heavily influenced by the meteorological adjustment and wood consumption methodology change.

6. Sulfur Dioxide (SO_2)

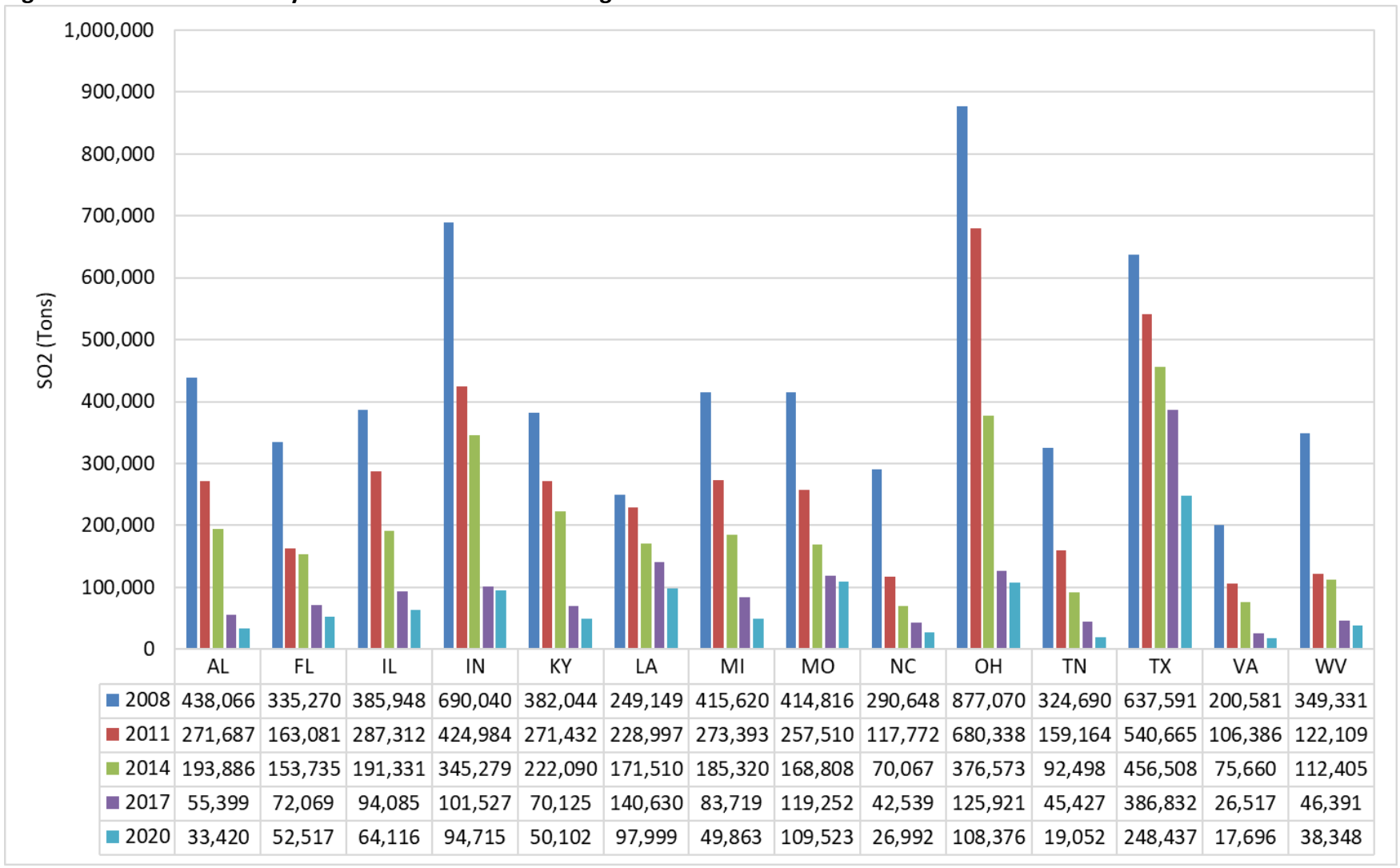
Figure 6-1 shows SO_2 emissions by NEI year for the MANEVU states and Figure 6-2 shows SO_2 emissions by NEI year for the contributing states. Figure 6-3 shows SO_2 emissions by NEI year and source category for the total MANEVU region. Tabulations and plots for individual MANEVU states are shown in Appendix A.

Figure 6-1: SO_2 Emissions by NEI Year for the MANE-VU States



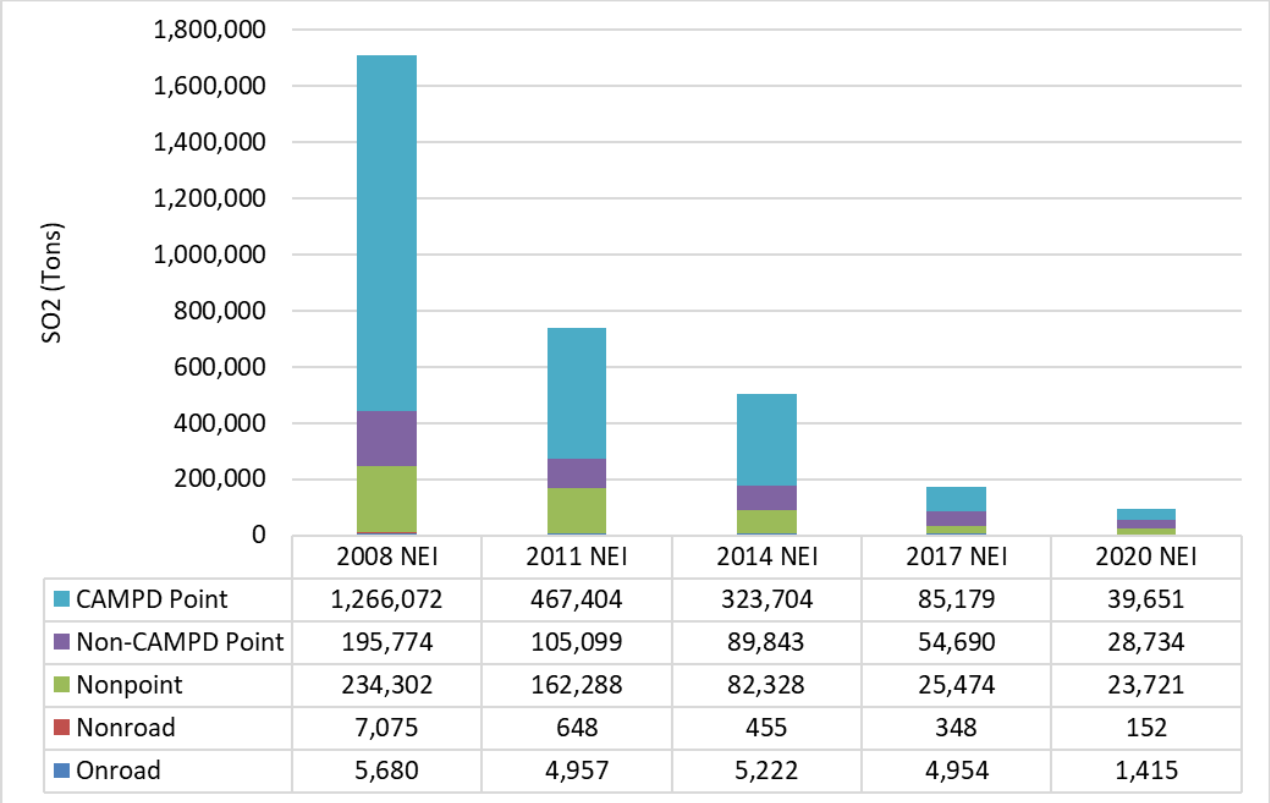
	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT
2008	19,443	44,282	1,273	23,362	264,487	76,256	45,666	44,370	193,703	987,671	4,345	4,044
2011	15,334	13,883	1,829	15,528	71,751	51,338	31,257	17,907	114,940	398,497	4,689	3,445
2014	12,445	4,330	252	11,242	48,490	18,890	8,554	9,781	52,857	329,804	3,406	1,503
2017	2,692	1,448	90	5,762	20,130	6,256	5,972	4,483	25,988	96,263	816	743
2020	923	973	39	4,175	12,290	2,095	1,398	2,965	11,436	56,330	396	655

Figure 6-2: SO_2 Emissions by NEI Year for the Contributing States



	AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV
2008	438,066	335,270	385,948	690,040	382,044	249,149	415,620	414,816	290,648	877,070	324,690	637,591	200,581	349,331
2011	271,687	163,081	287,312	424,984	271,432	228,997	273,393	257,510	117,772	680,338	159,164	540,665	106,386	122,109
2014	193,886	153,735	191,331	345,279	222,090	171,510	185,320	168,808	70,067	376,573	92,498	456,508	75,660	112,405
2017	55,399	72,069	94,085	101,527	70,125	140,630	83,719	119,252	42,539	125,921	45,427	386,832	26,517	46,391
2020	33,420	52,517	64,116	94,715	50,102	97,999	49,863	109,523	26,992	108,376	19,052	248,437	17,696	38,348

Figure 6-3: SO_2 Emissions by NEI Year and Source Category for the MANEVU Region

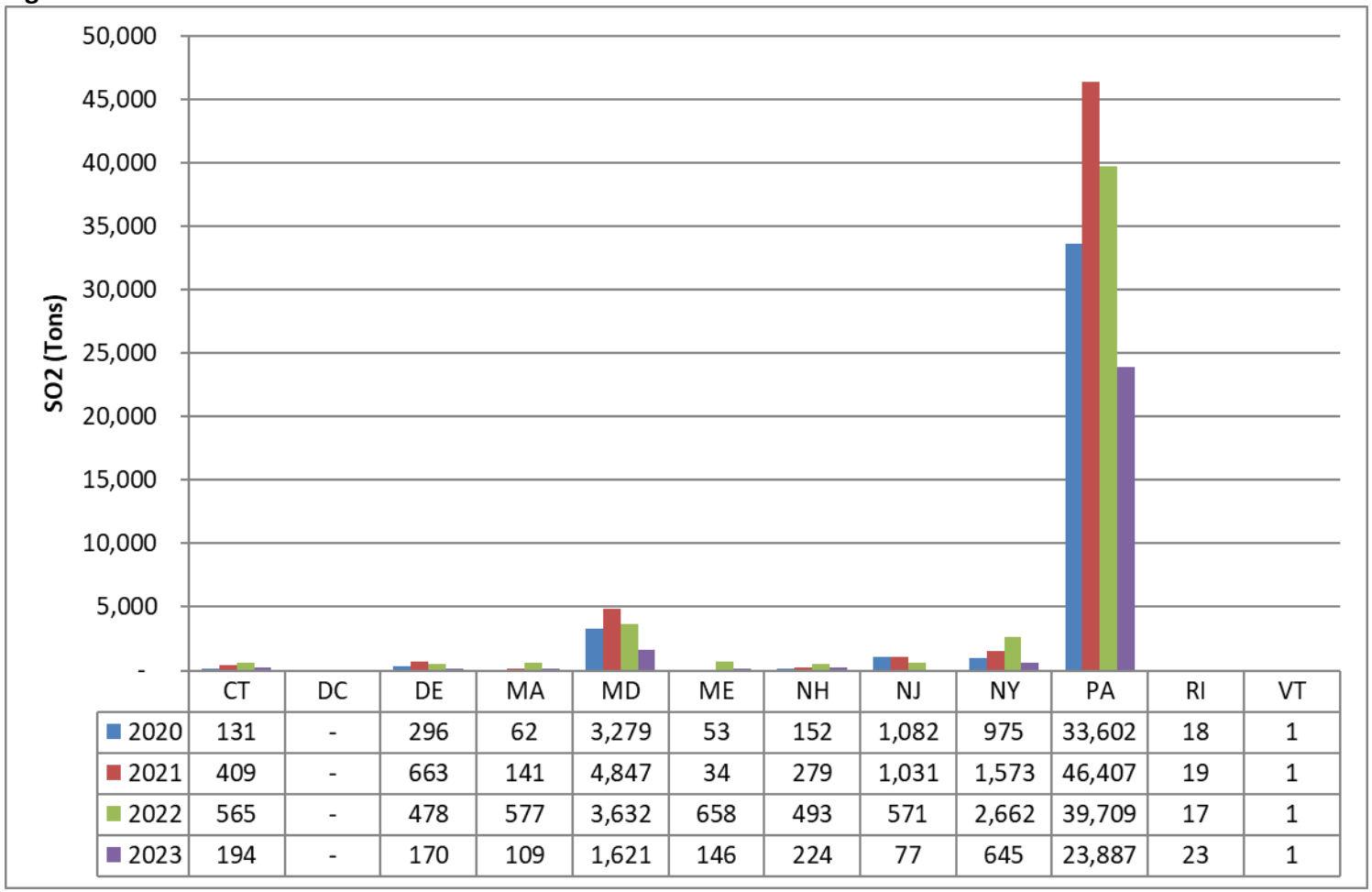


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	1,266,072	467,404	323,704	85,179	39,651
Non-CAMPD Point	195,774	105,099	89,843	54,690	28,734
Nonpoint	234,302	162,288	82,328	25,474	23,721
Nonroad	7,075	648	455	348	152
Onroad	5,680	4,957	5,222	4,954	1,415

For all the MANEVU and contributing states, SO_2 emissions have declined significantly between the 2008 and 2020 NEIs. Figure 6-3 shows that many of these reductions have come from the point source sector, particularly the sources that report to CAMPD. These reductions are largely the result of add-on SO_2 controls for coal-fired power plants, retirements of coal-fired power plants, and market forces that have led to more natural gas use in the electric generating sector. There has also been a decline in nonpoint SO_2 emissions (green bars) that has come about as more and more MANEVU states adopted low sulfur fuel standards.

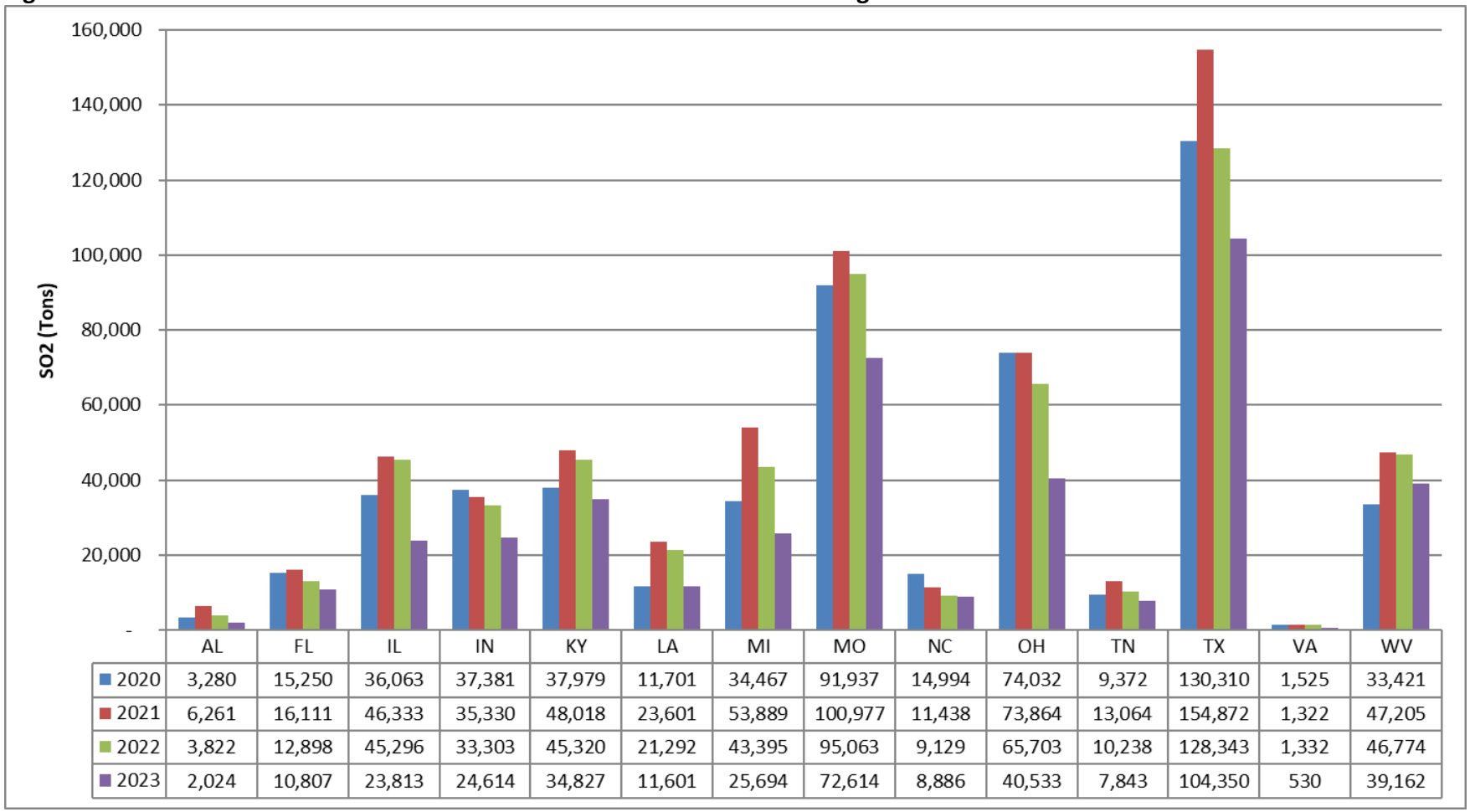
Figure 6-4 shows SO_2 emissions between 2020 and 2023 for those MANEVU sources that report to CAMPD. 2023 CAMPD SO_2 emissions were lower than 2022 for all MANEVU states and lower than all previous years shown for many of the MANEVU states. Figure 6-5 shows 2020 to 2023 CAMPD source emissions for the contributing states. Like the MANEVU states, 2023 SO_2 emissions were lower than 2022 for all the contributing states. 2023 emissions were lower than all previous years shown for every contributing state except one.

Figure 6-4: 2020 to 2023 SO_2 Emissions for CAMPD Sources in the MANEVU States



	CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT
2020	131	-	296	62	3,279	53	152	1,082	975	33,602	18	1
2021	409	-	663	141	4,847	34	279	1,031	1,573	46,407	19	1
2022	565	-	478	577	3,632	658	493	571	2,662	39,709	17	1
2023	194	-	170	109	1,621	146	224	77	645	23,887	23	1

Figure 6-5: 2020 to 2023 SO_2 Emissions for CAMPD Sources in the Contributing States

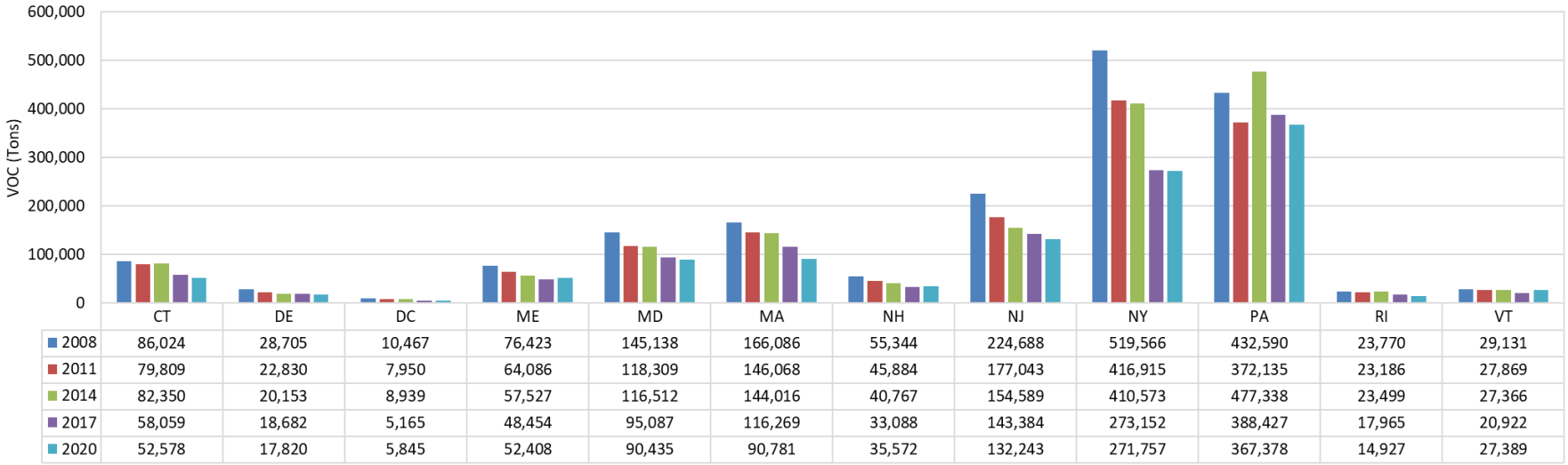


	AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV
2020	3,280	15,250	36,063	37,381	37,979	11,701	34,467	91,937	14,994	74,032	9,372	130,310	1,525	33,421
2021	6,261	16,111	46,333	35,330	48,018	23,601	53,889	100,977	11,438	73,864	13,064	154,872	1,322	47,205
2022	3,822	12,898	45,296	33,303	45,320	21,292	43,395	95,063	9,129	65,703	10,238	128,343	1,332	46,774
2023	2,024	10,807	23,813	24,614	34,827	11,601	25,694	72,614	8,886	40,533	7,843	104,350	530	39,162

7. Volatile Organic Compounds (VOC)

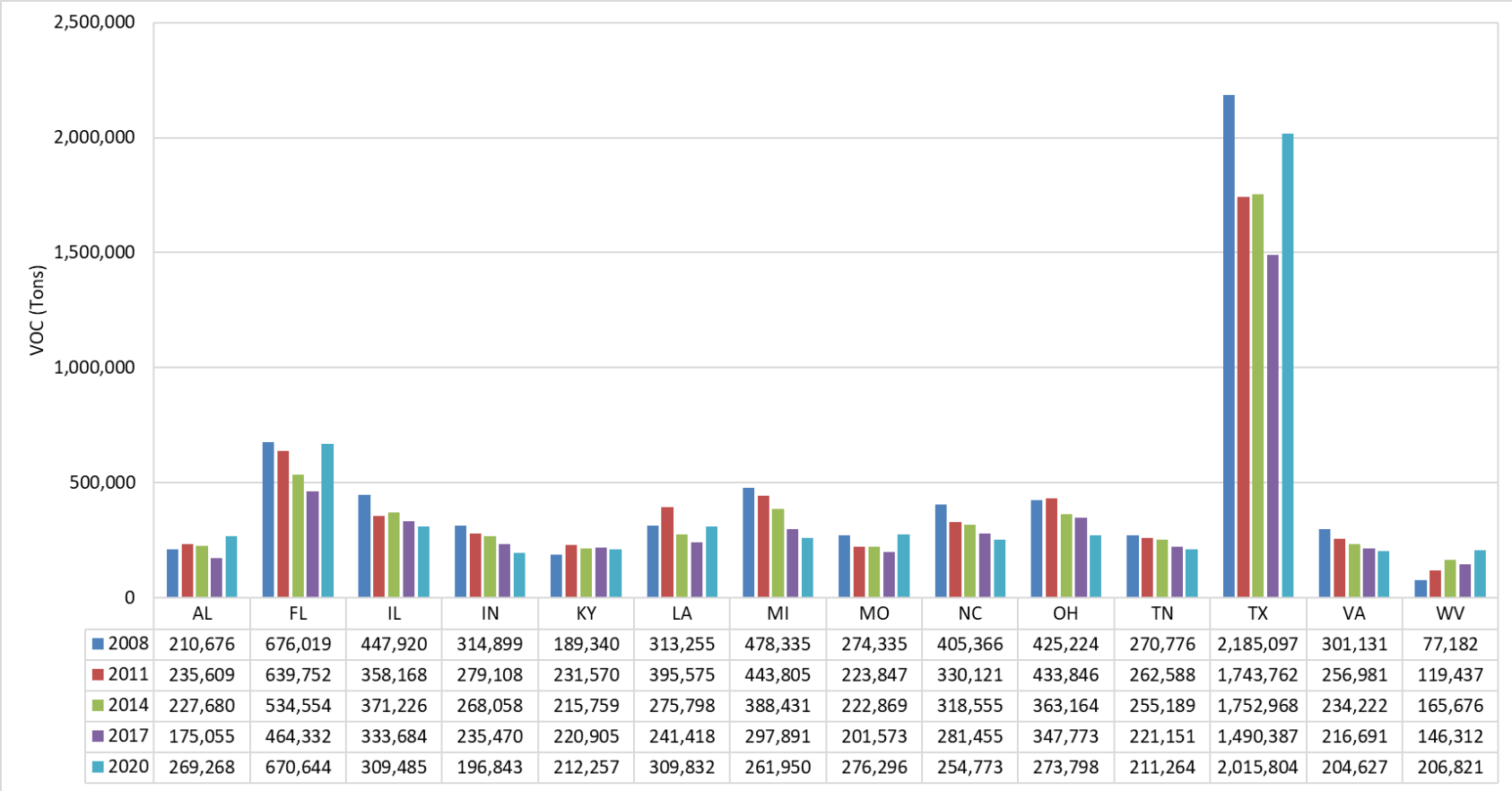
Figure 7-1 shows VOC emissions by NEI year for the MANEVU states. Similarly, Figure 7-2 shows VOC emissions by NEI year for the contributing states. Figure 7-3 shows VOC emissions by NEI year and source category for the total MANEVU region. Tabulations and plots for individual MANEVU states are shown in Appendix A.

Figure 7-1: VOC Emissions by NEI Year for the MANE-VU States



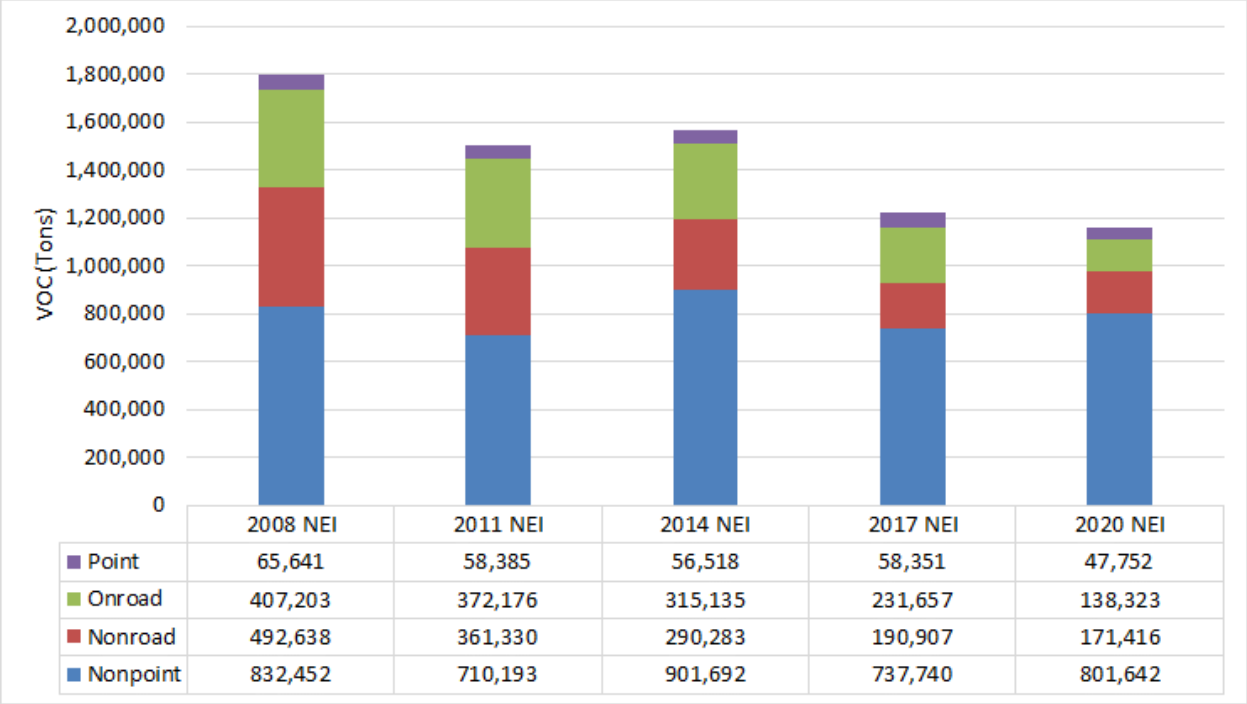
	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT
2008	86,024	28,705	10,467	76,423	145,138	166,086	55,344	224,688	519,566	432,590	23,770	29,131
2011	79,809	22,830	7,950	64,086	118,309	146,068	45,884	177,043	416,915	372,135	23,186	27,869
2014	82,350	20,153	8,939	57,527	116,512	144,016	40,767	154,589	410,573	477,338	23,499	27,366
2017	58,059	18,682	5,165	48,454	95,087	116,269	33,088	143,384	273,152	388,427	17,965	20,922
2020	52,578	17,820	5,845	52,408	90,435	90,781	35,572	132,243	271,757	367,378	14,927	27,389

Figure 7-2: VOC Emissions by NEI Year for the Contributing States



	AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV
2008	210,676	676,019	447,920	314,899	189,340	313,255	478,335	274,335	405,366	425,224	270,776	2,185,097	301,131	77,182
2011	235,609	639,752	358,168	279,108	231,570	395,575	443,805	223,847	330,121	433,846	262,588	1,743,762	256,981	119,437
2014	227,680	534,554	371,226	268,058	215,759	275,798	388,431	222,869	318,555	363,164	255,189	1,752,968	234,222	165,676
2017	175,055	464,332	333,684	235,470	220,905	241,418	297,891	201,573	281,455	347,773	221,151	1,490,387	216,691	146,312
2020	269,268	670,644	309,485	196,843	212,257	309,832	261,950	276,296	254,773	273,798	211,264	2,015,804	204,627	206,821

Figure 7-3: VOC Emissions by NEI Year and Source Category for the MANEVU Region

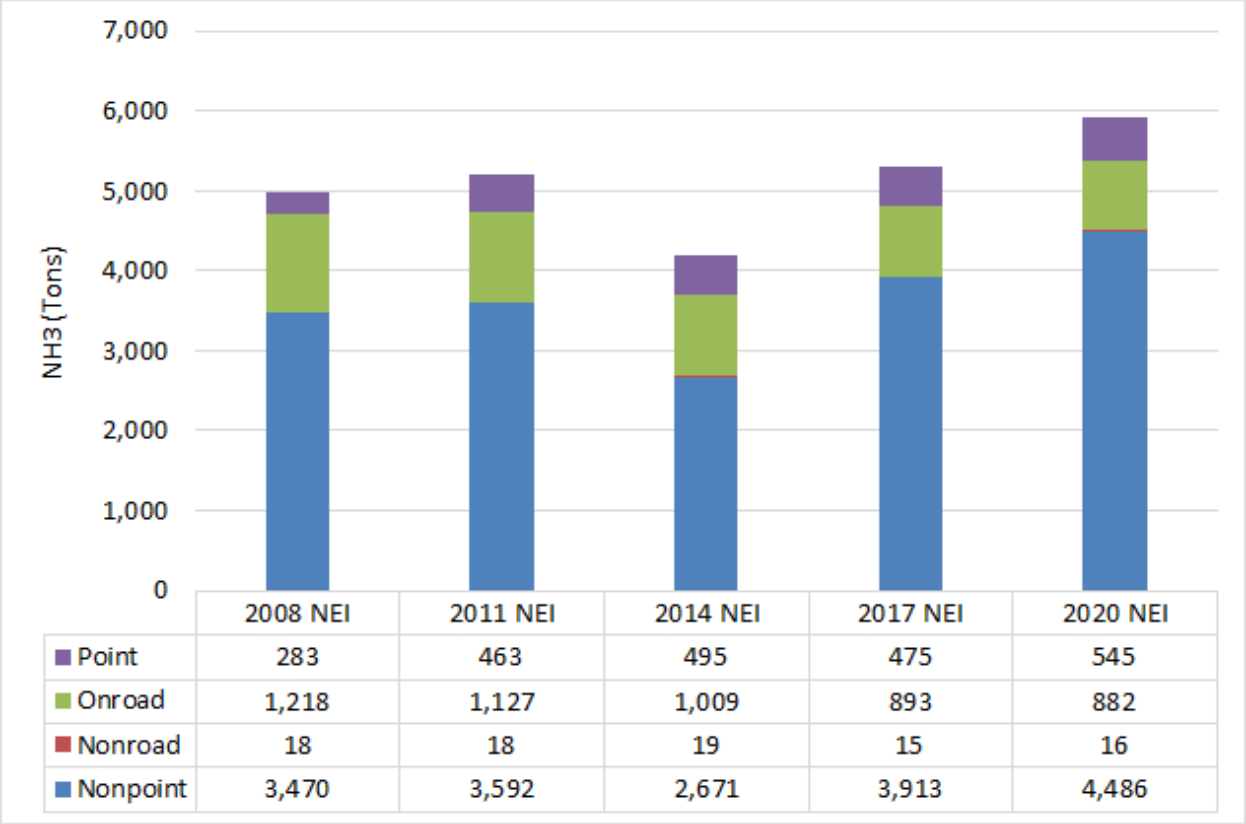


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	65,641	58,385	56,518	58,351	47,752
Onroad	407,203	372,176	315,135	231,657	138,323
Nonroad	492,638	361,330	290,283	190,907	171,416
Nonpoint	832,452	710,193	901,692	737,740	801,642

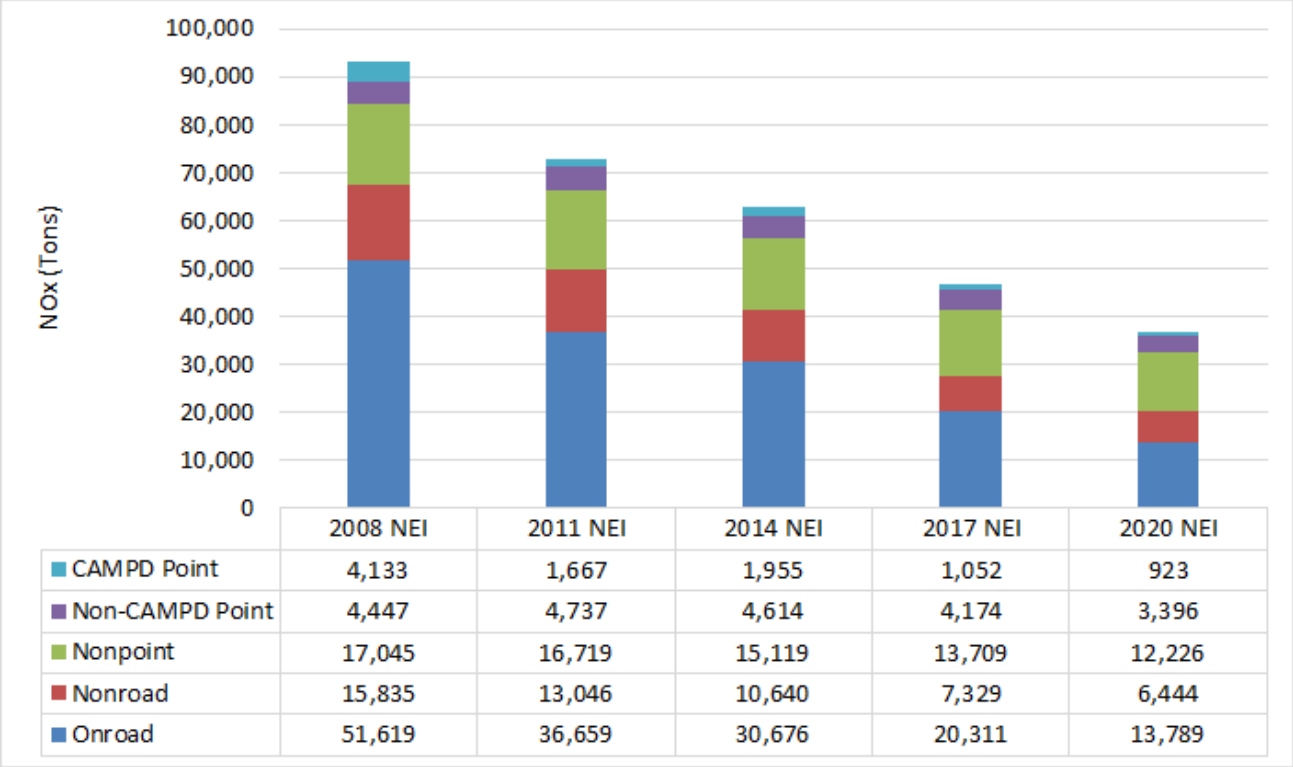
Figures 7-1 through 7-3 show a general downward trend in VOC emissions with some year-to-year variability. It is likely that some of this variability in emissions is caused by estimation methodology changes. For most of the MANEVU and contributing states, 2020 VOC emissions are lower than at least one of the previous NEI years. For many states, 2020 VOC emissions are lower than all the previous NEI years.

APPENDIX A: EMISSIONS BY SOURCE CATEGORY AND NEI YEAR FOR INDIVIDUAL MANEVU STATES

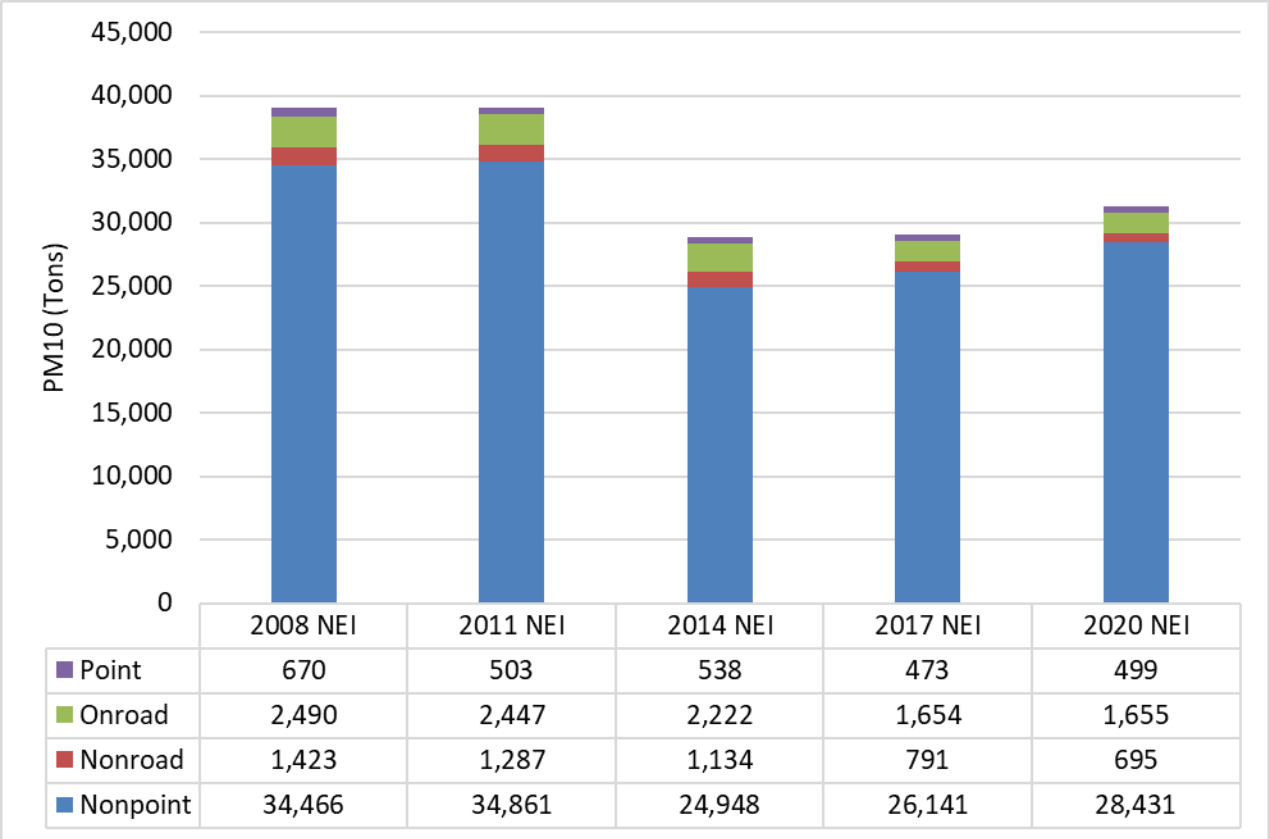
Connecticut



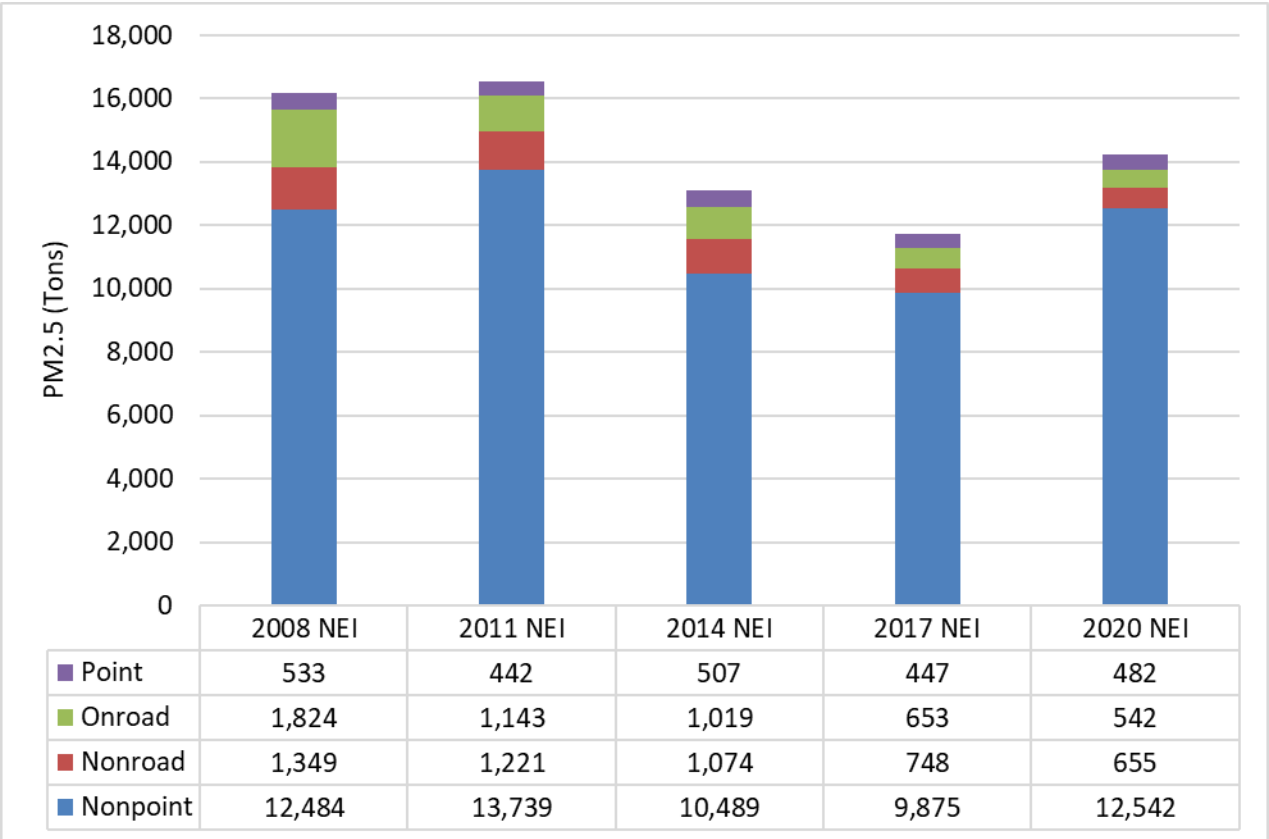
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	283	463	495	475	545
Onroad	1,218	1,127	1,009	893	882
Nonroad	18	18	19	15	16
Nonpoint	3,470	3,592	2,671	3,913	4,486



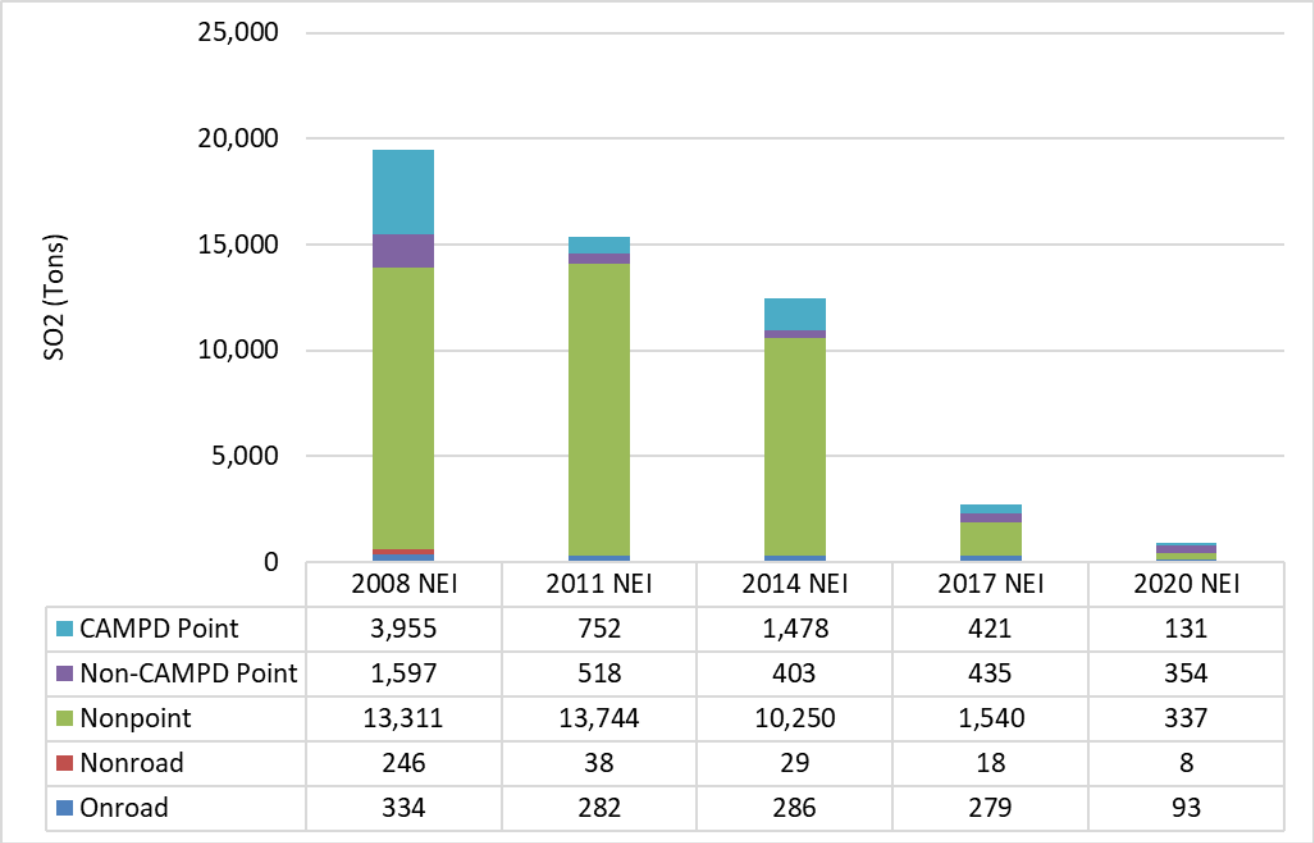
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	4,133	1,667	1,955	1,052	923
Non-CAMPD Point	4,447	4,737	4,614	4,174	3,396
Nonpoint	17,045	16,719	15,119	13,709	12,226
Nonroad	15,835	13,046	10,640	7,329	6,444
Onroad	51,619	36,659	30,676	20,311	13,789



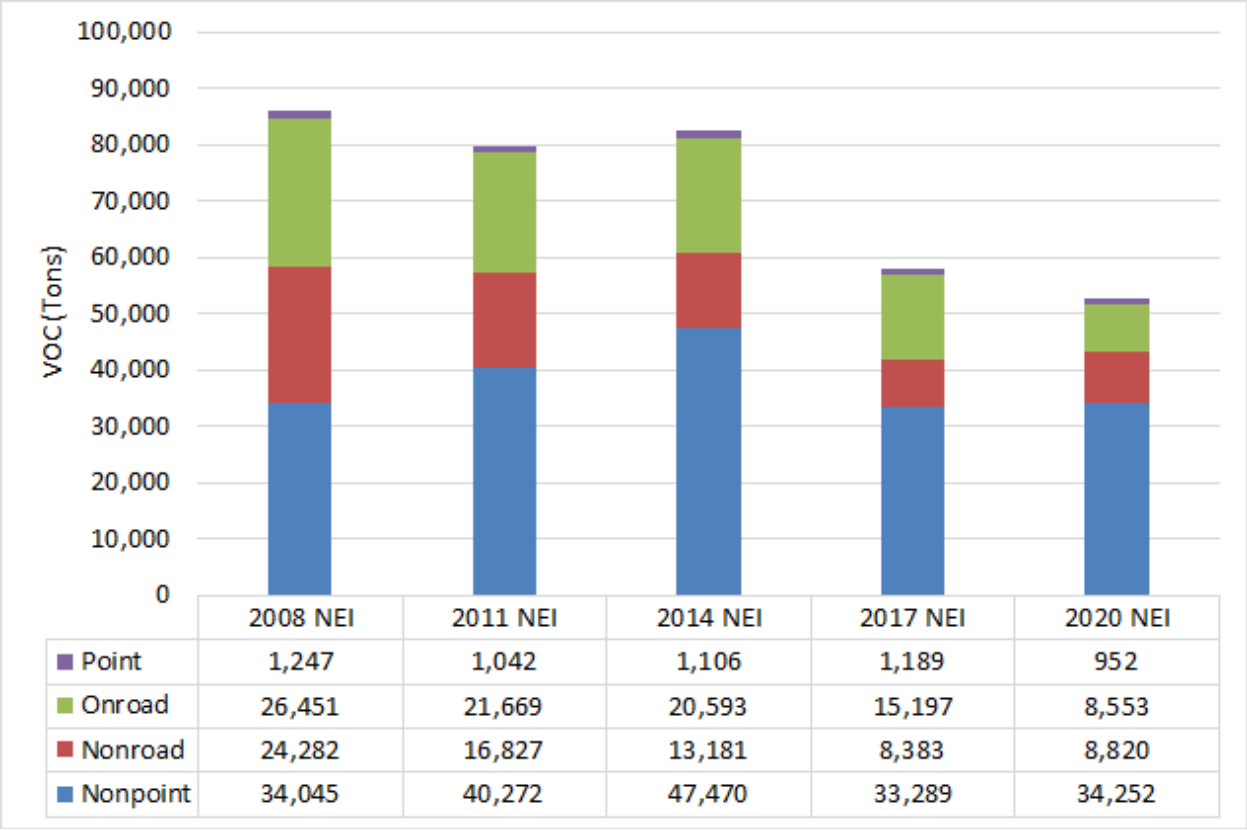
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	670	503	538	473	499
Onroad	2,490	2,447	2,222	1,654	1,655
Nonroad	1,423	1,287	1,134	791	695
Nonpoint	34,466	34,861	24,948	26,141	28,431



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	533	442	507	447	482
Onroad	1,824	1,143	1,019	653	542
Nonroad	1,349	1,221	1,074	748	655
Nonpoint	12,484	13,739	10,489	9,875	12,542

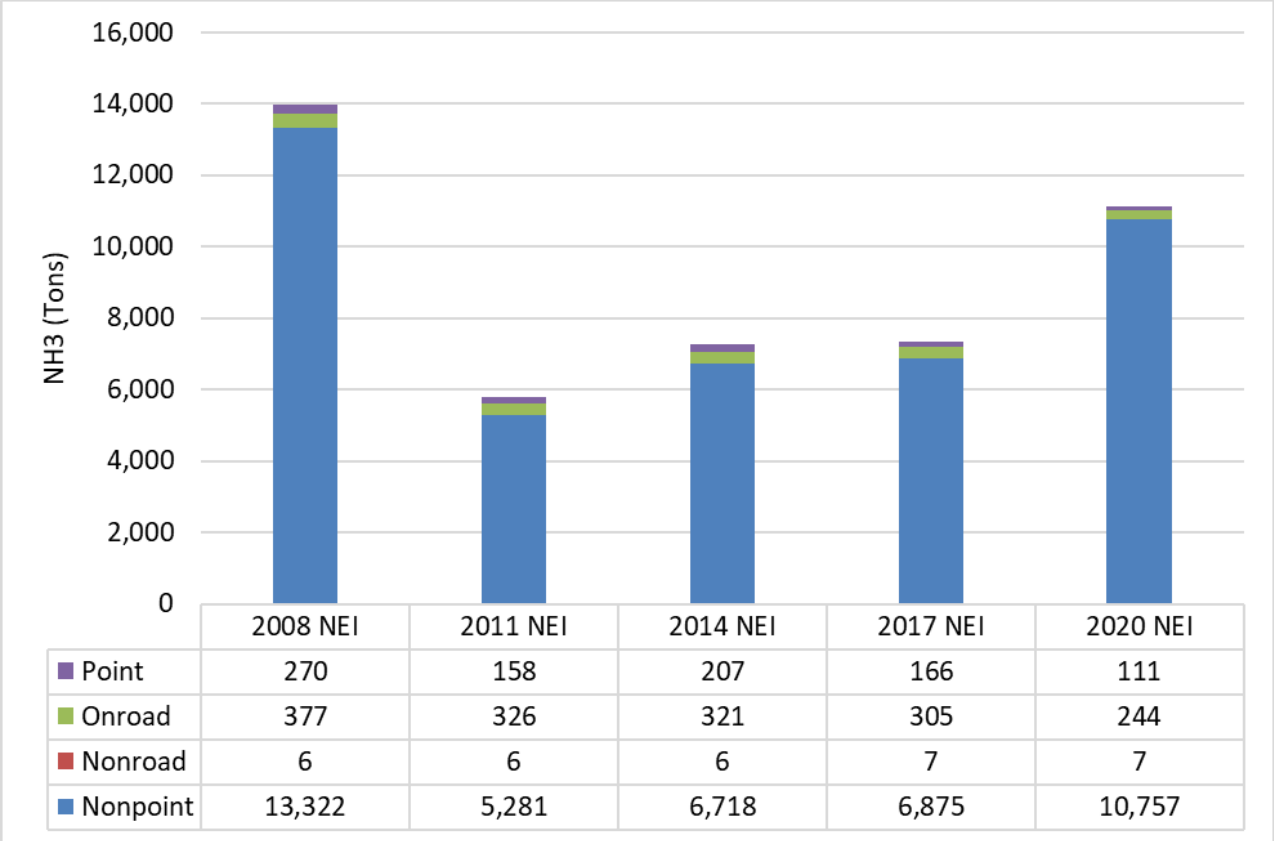


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	3,955	752	1,478	421	131
Non-CAMPD Point	1,597	518	403	435	354
Nonpoint	13,311	13,744	10,250	1,540	337
Nonroad	246	38	29	18	8
Onroad	334	282	286	279	93

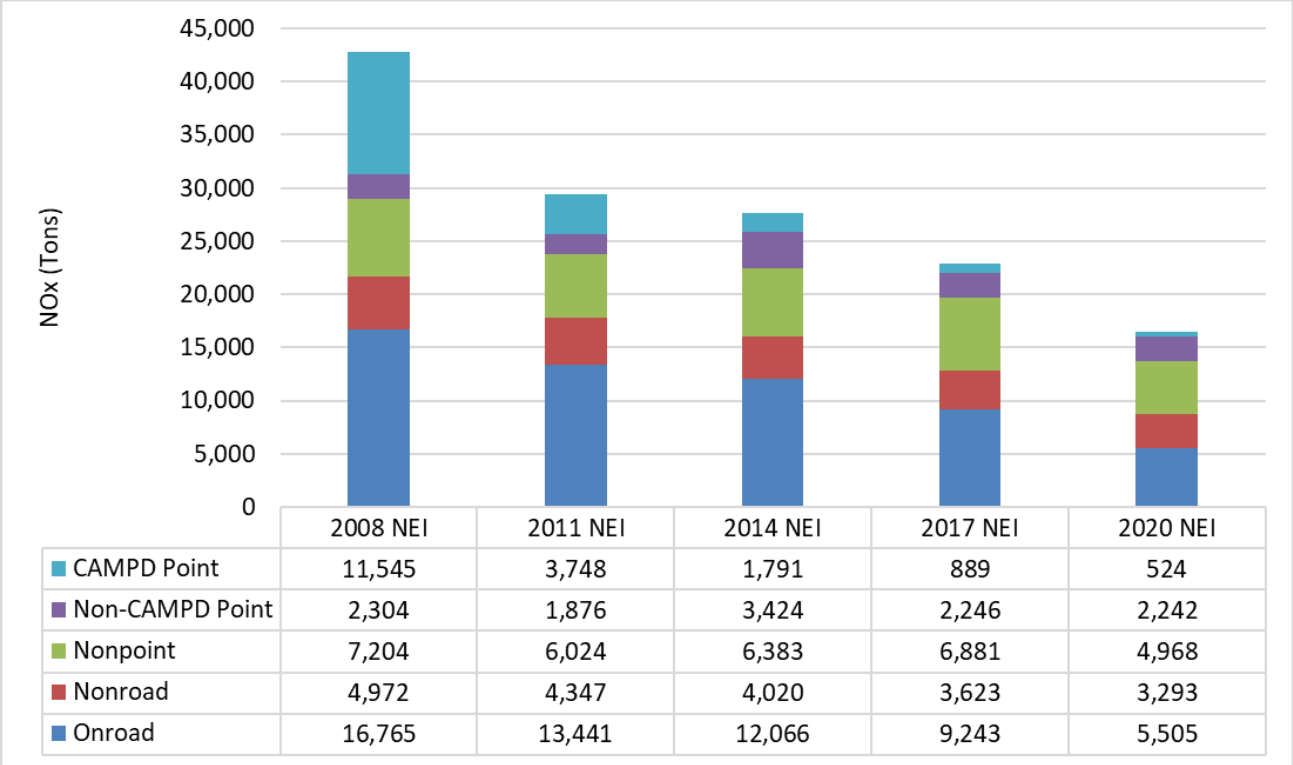


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	1,247	1,042	1,106	1,189	952
Onroad	26,451	21,669	20,593	15,197	8,553
Nonroad	24,282	16,827	13,181	8,383	8,820
Nonpoint	34,045	40,272	47,470	33,289	34,252

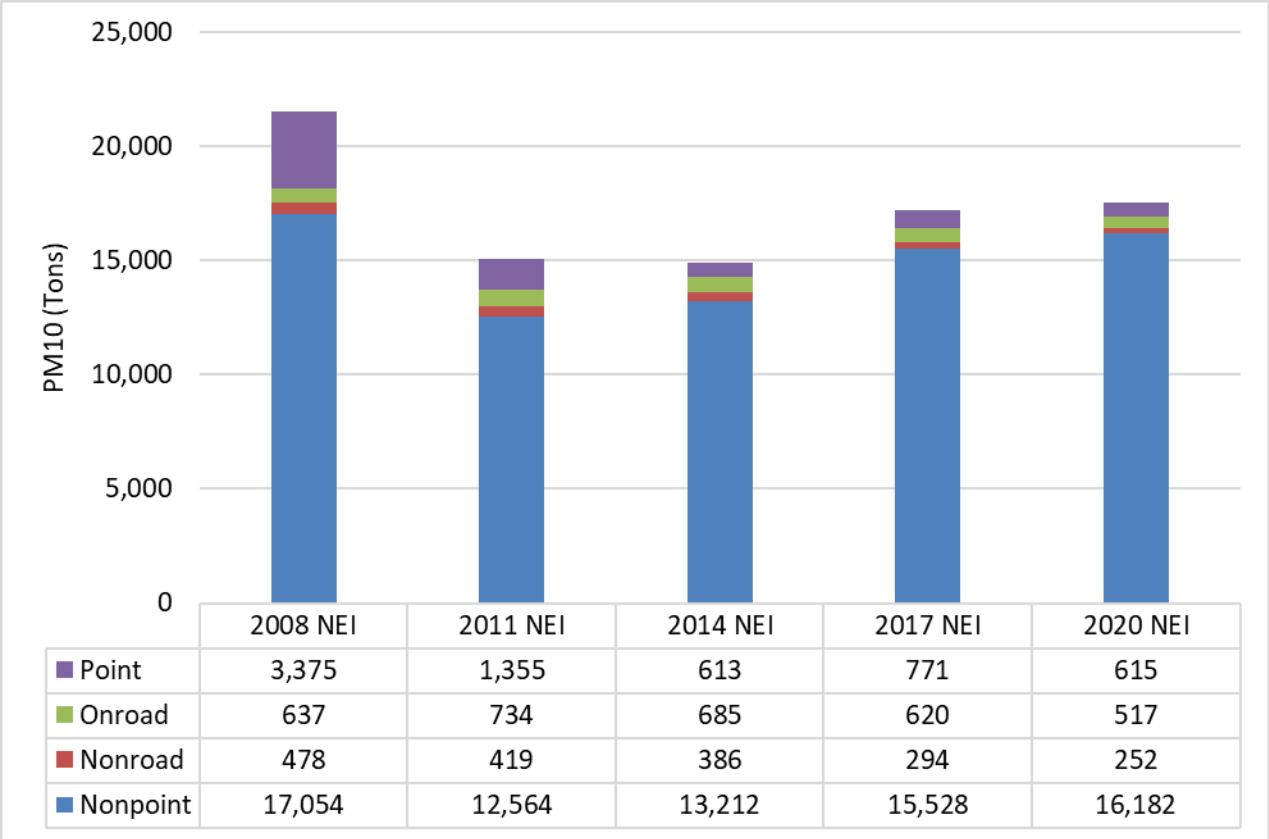
Delaware



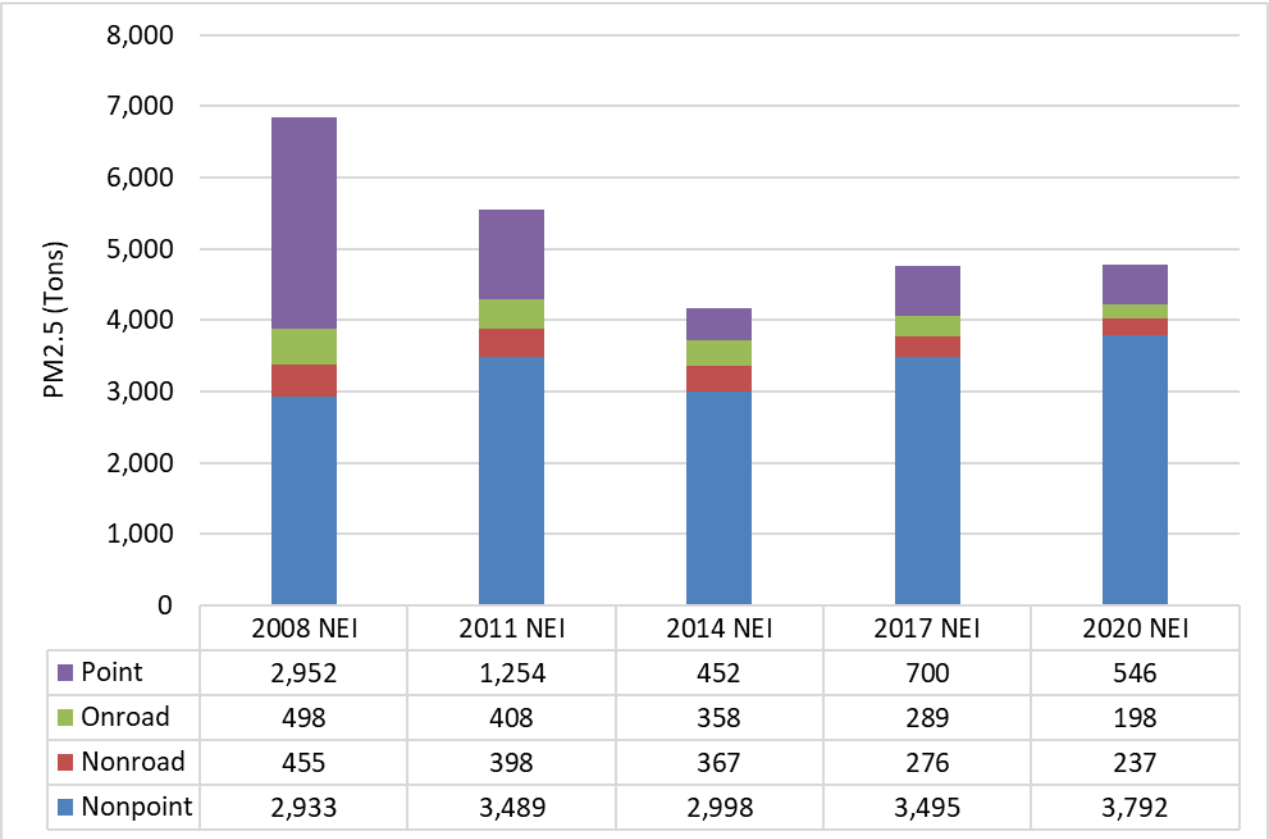
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	270	158	207	166	111
Onroad	377	326	321	305	244
Nonroad	6	6	6	7	7
Nonpoint	13,322	5,281	6,718	6,875	10,757



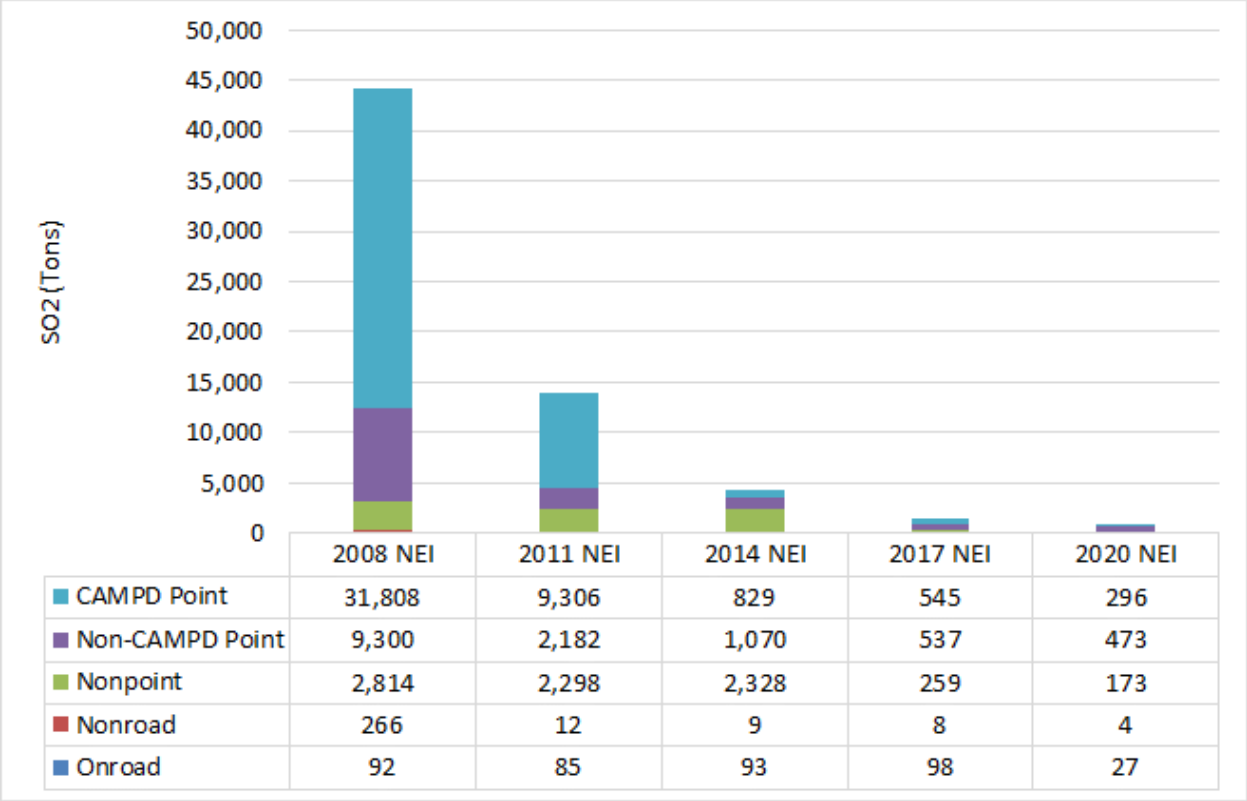
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	11,545	3,748	1,791	889	524
Non-CAMPD Point	2,304	1,876	3,424	2,246	2,242
Nonpoint	7,204	6,024	6,383	6,881	4,968
Nonroad	4,972	4,347	4,020	3,623	3,293
Onroad	16,765	13,441	12,066	9,243	5,505



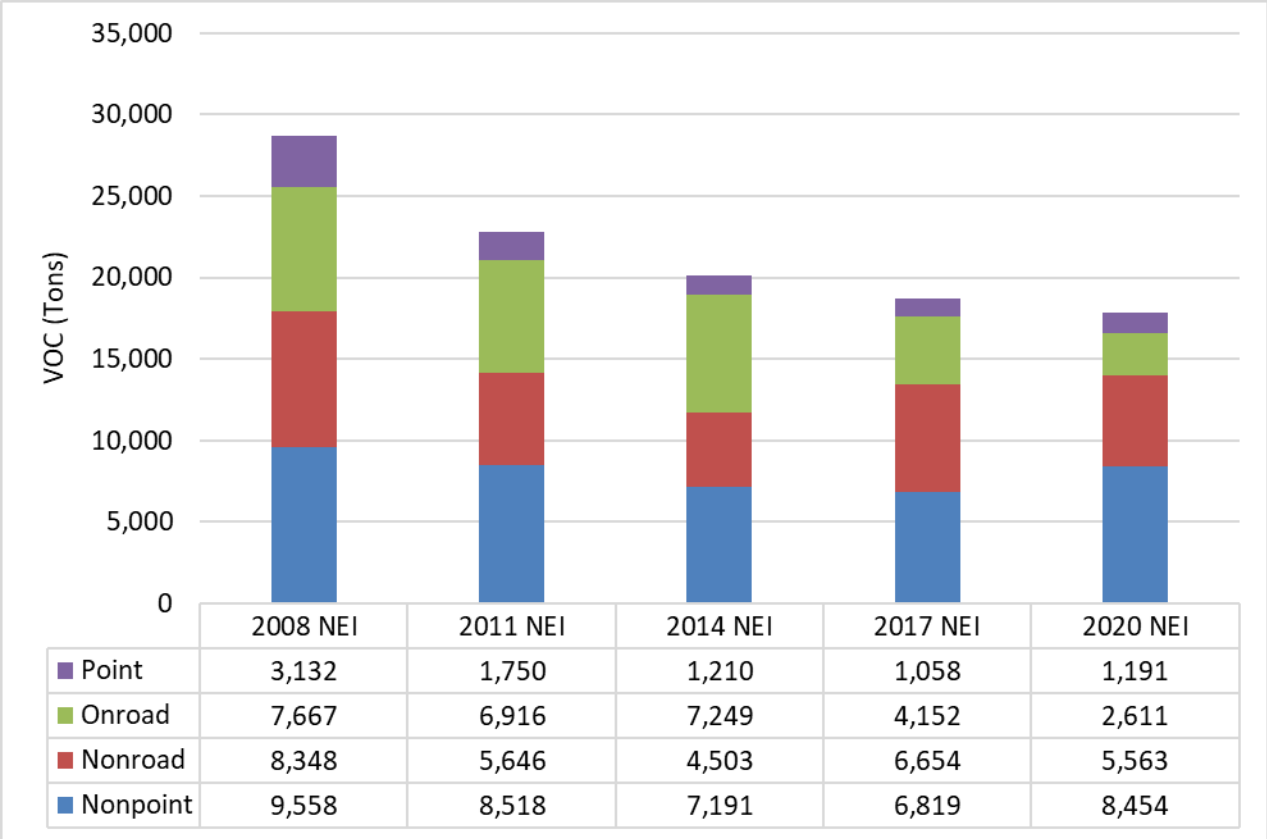
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	3,375	1,355	613	771	615
Onroad	637	734	685	620	517
Nonroad	478	419	386	294	252
Nonpoint	17,054	12,564	13,212	15,528	16,182



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	2,952	1,254	452	700	546
Onroad	498	408	358	289	198
Nonroad	455	398	367	276	237
Nonpoint	2,933	3,489	2,998	3,495	3,792

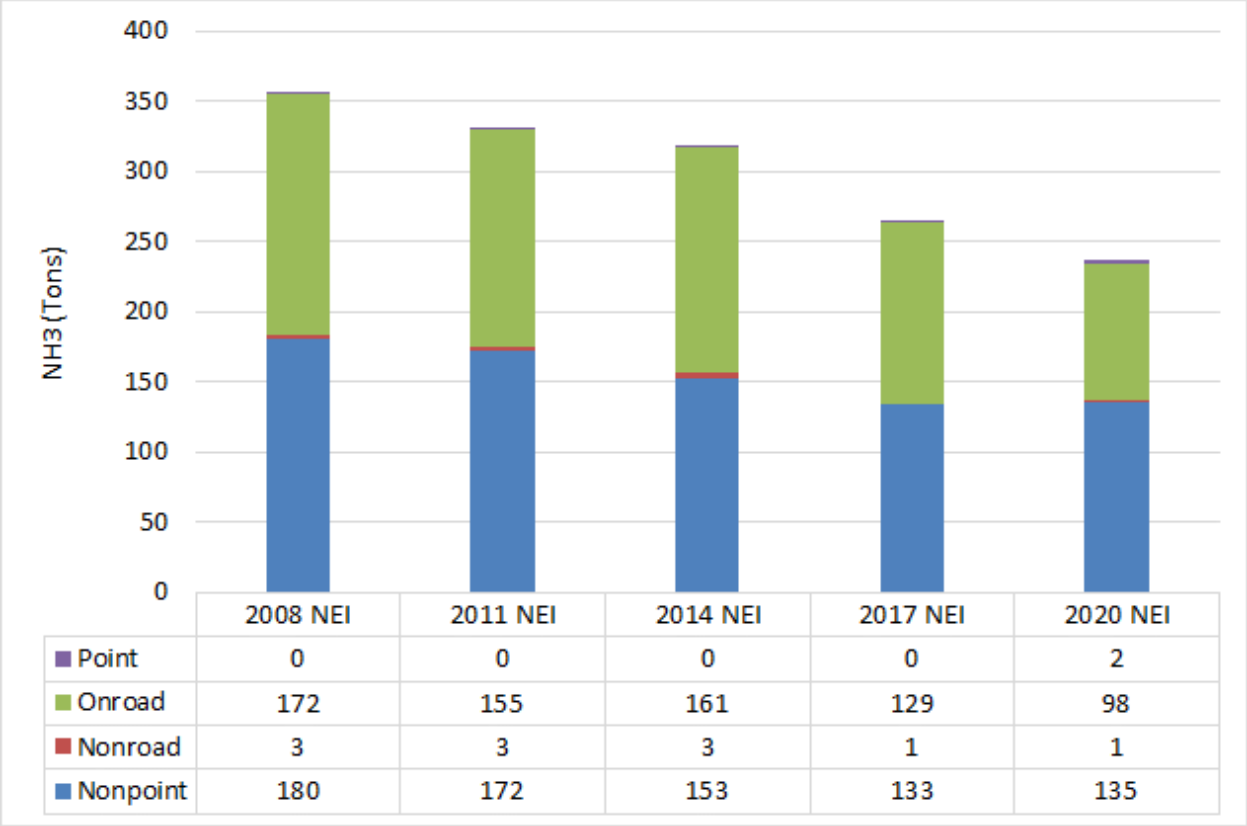


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	31,808	9,306	829	545	296
Non-CAMPD Point	9,300	2,182	1,070	537	473
Nonpoint	2,814	2,298	2,328	259	173
Nonroad	266	12	9	8	4
Onroad	92	85	93	98	27

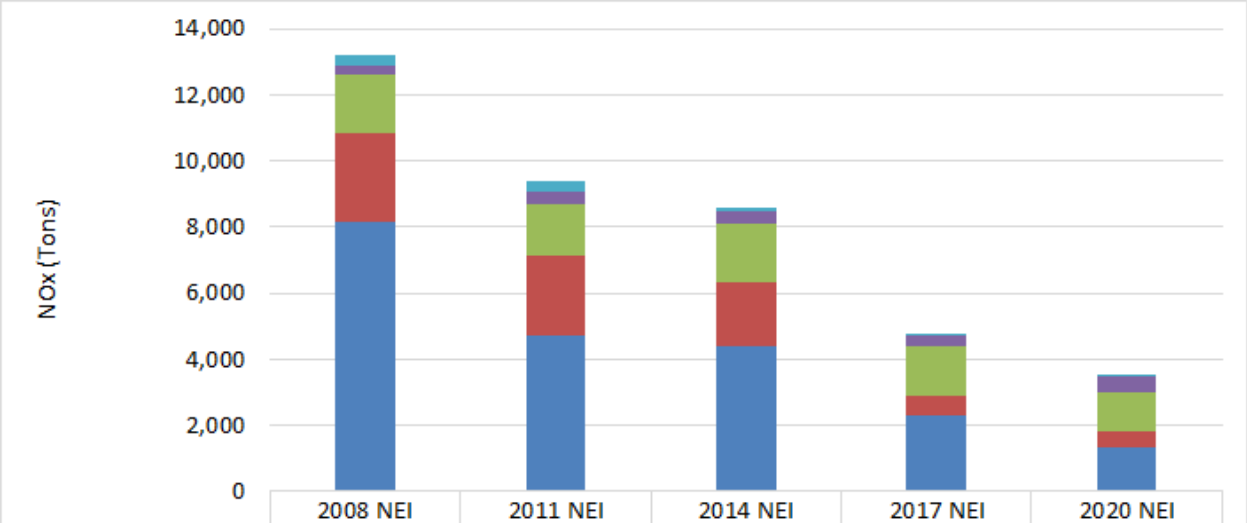


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	3,132	1,750	1,210	1,058	1,191
Onroad	7,667	6,916	7,249	4,152	2,611
Nonroad	8,348	5,646	4,503	6,654	5,563
Nonpoint	9,558	8,518	7,191	6,819	8,454

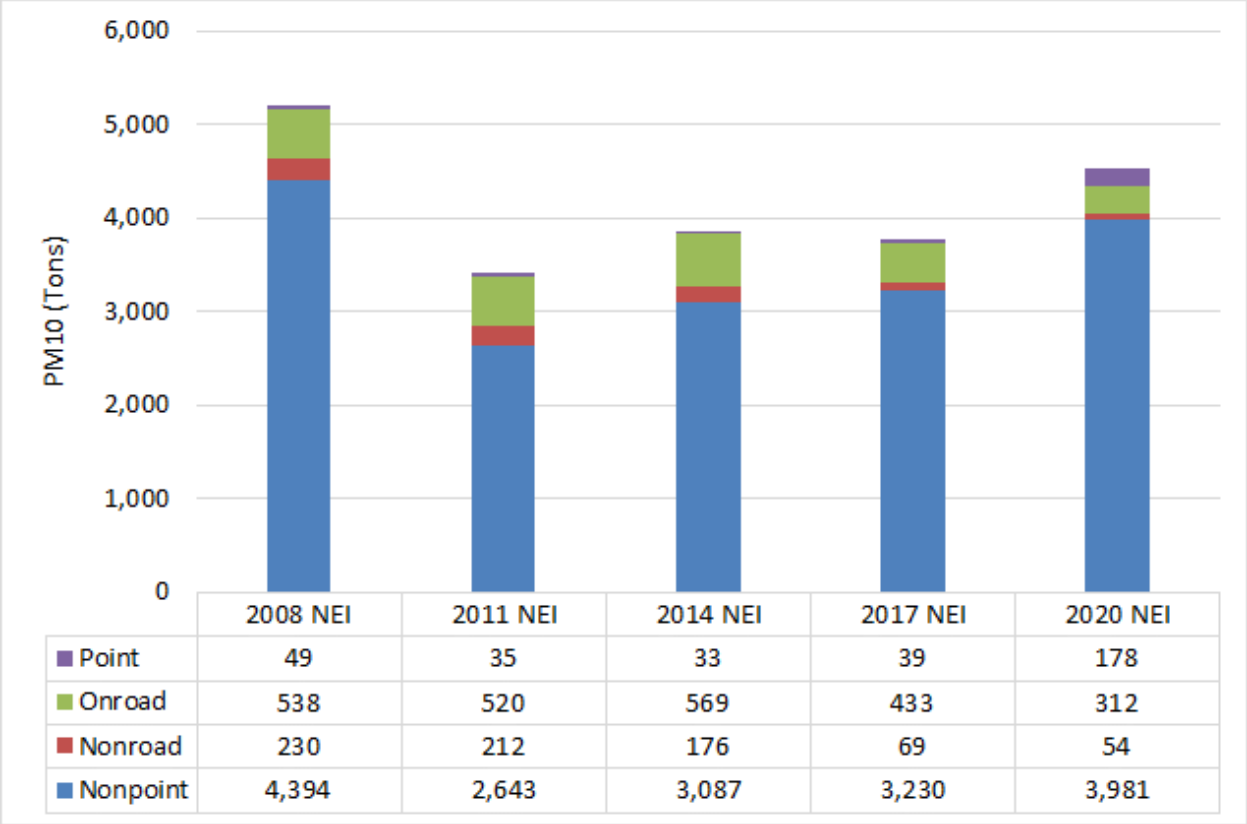
District of Columbia



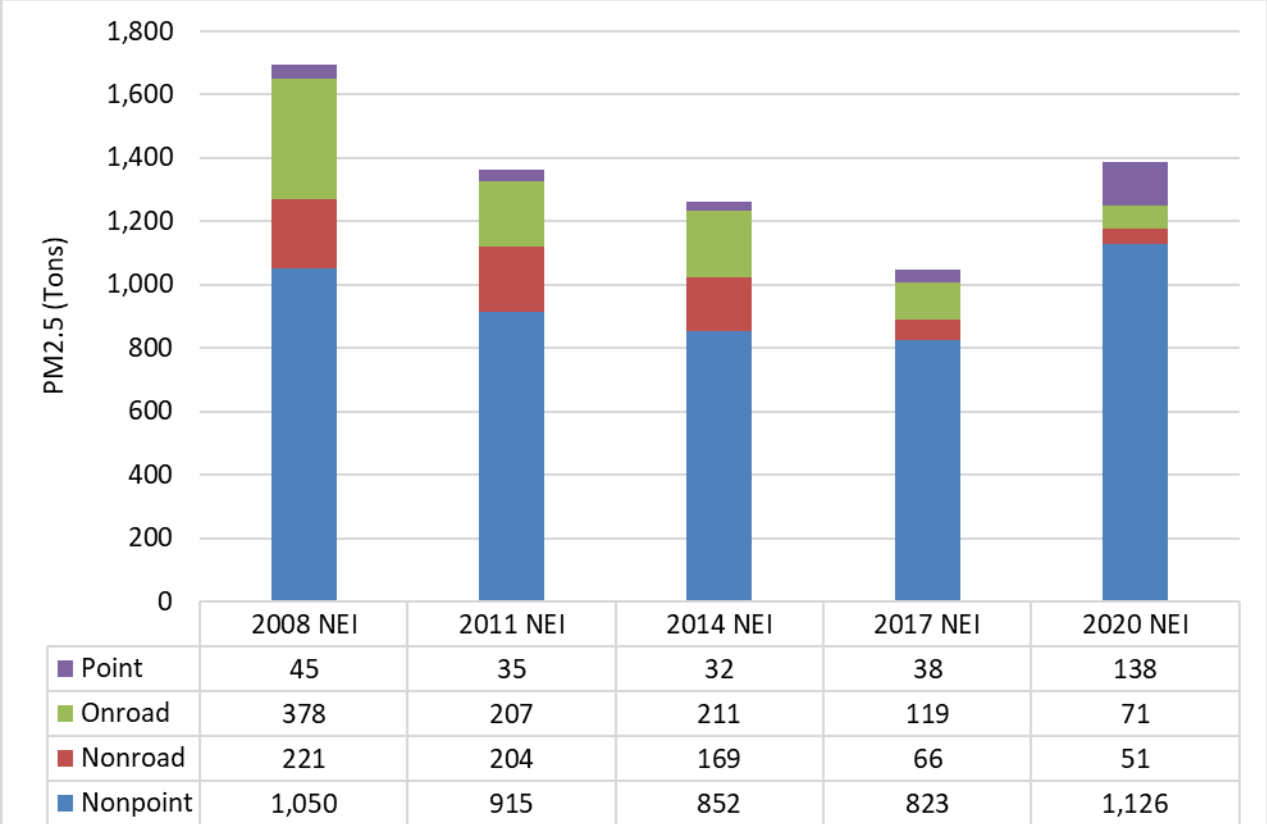
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	0	0	0	0	2
Onroad	172	155	161	129	98
Nonroad	3	3	3	1	1
Nonpoint	180	172	153	133	135



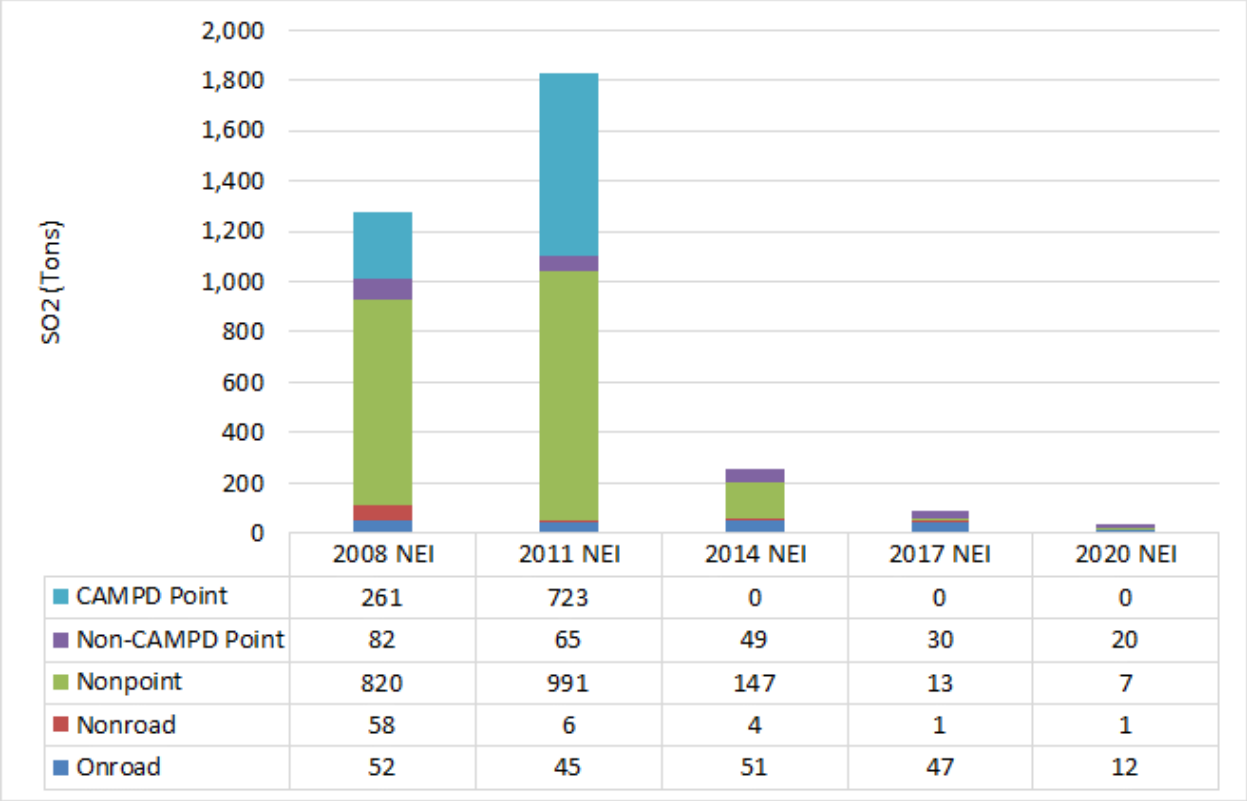
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	291	320	108	67	66
Non-CAMPD Point	306	372	340	323	482
Nonpoint	1,734	1,607	1,801	1,497	1,204
Nonroad	2,686	2,364	1,934	606	476
Onroad	8,173	4,739	4,384	2,287	1,326



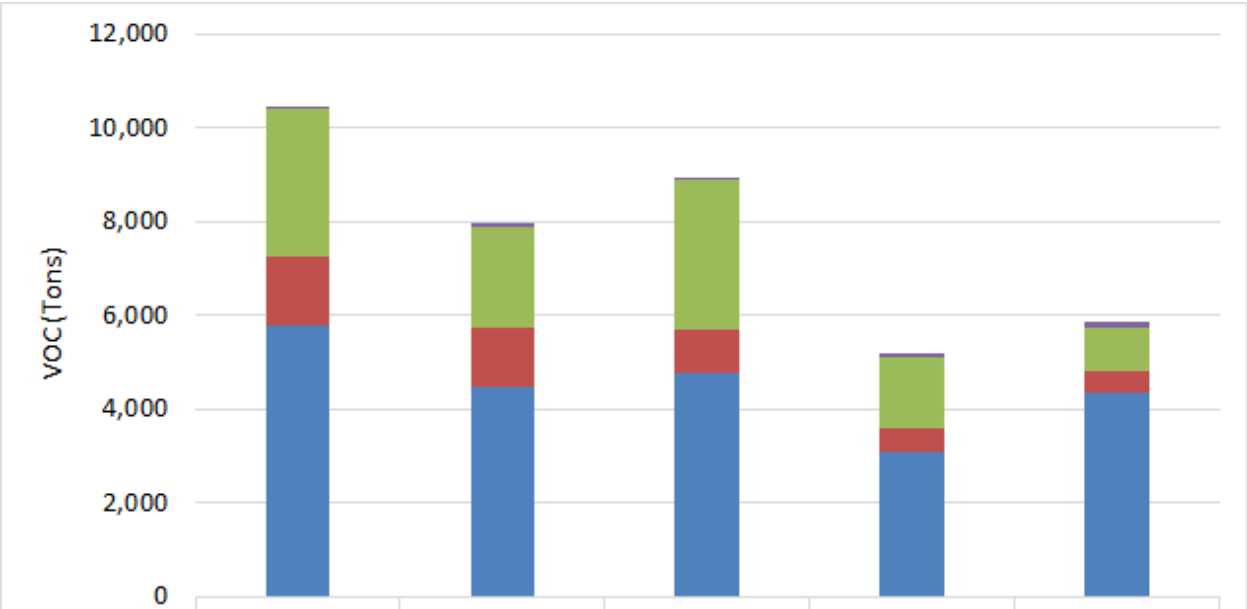
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	49	35	33	39	178
Onroad	538	520	569	433	312
Nonroad	230	212	176	69	54
Nonpoint	4,394	2,643	3,087	3,230	3,981



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	45	35	32	38	138
Onroad	378	207	211	119	71
Nonroad	221	204	169	66	51
Nonpoint	1,050	915	852	823	1,126

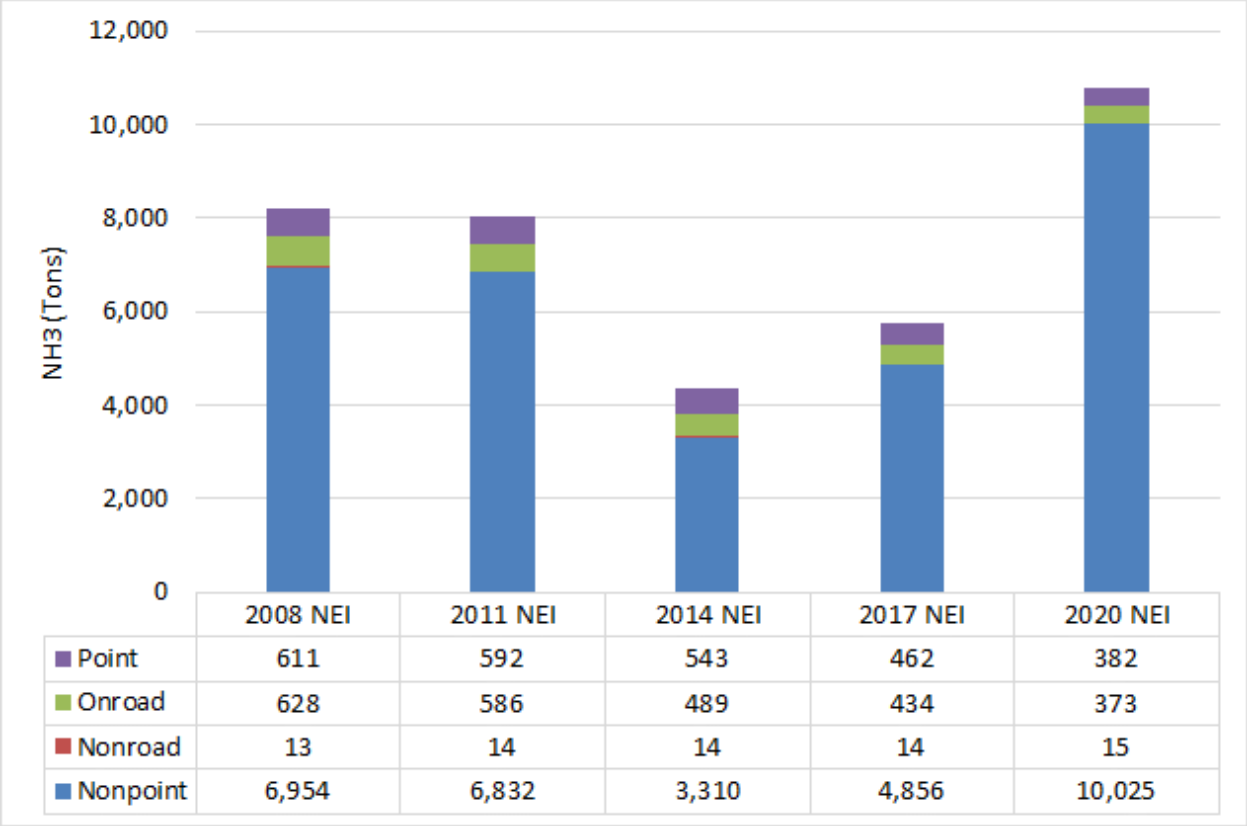


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	261	723	0	0	0
Non-CAMPD Point	82	65	49	30	20
Nonpoint	820	991	147	13	7
Nonroad	58	6	4	1	1
Onroad	52	45	51	47	12

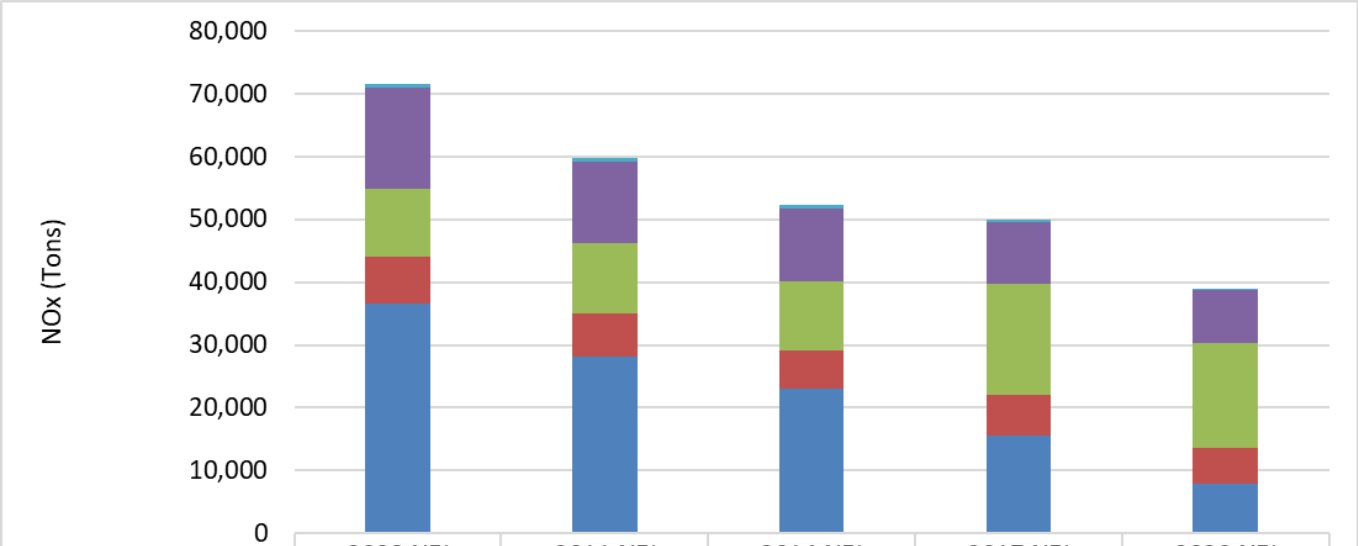


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	69	68	42	63	103
Onroad	3,143	2,146	3,194	1,508	920
Nonroad	1,460	1,250	950	511	471
Nonpoint	5,795	4,485	4,753	3,083	4,351

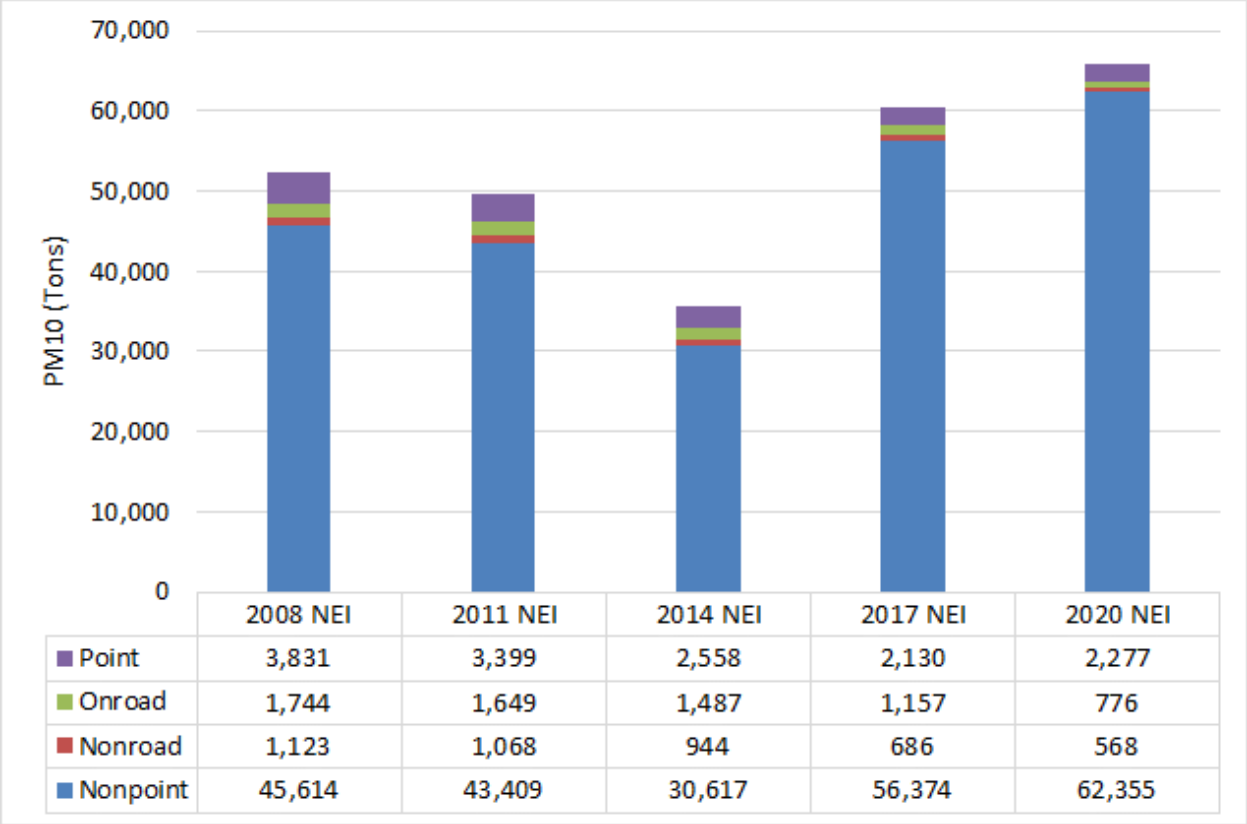
Maine



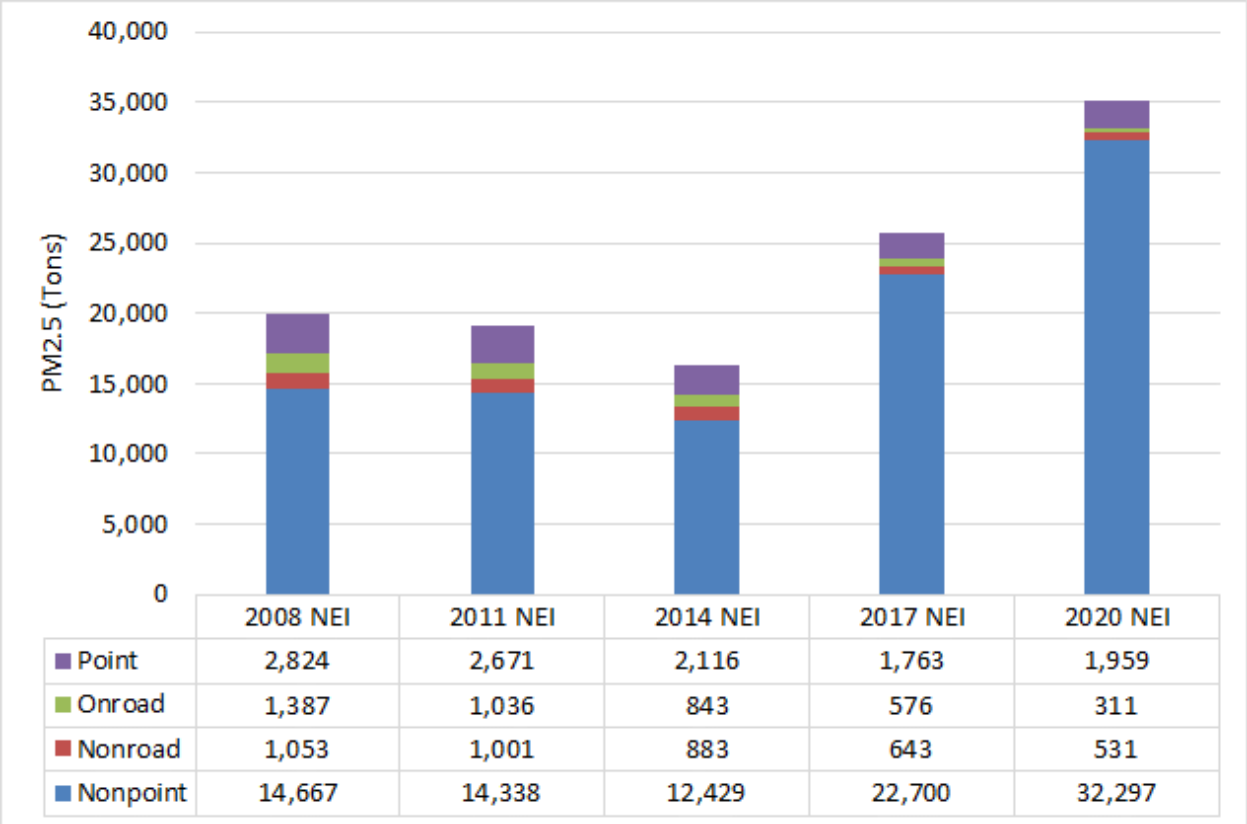
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	611	592	543	462	382
Onroad	628	586	489	434	373
Nonroad	13	14	14	14	15
Nonpoint	6,954	6,832	3,310	4,856	10,025



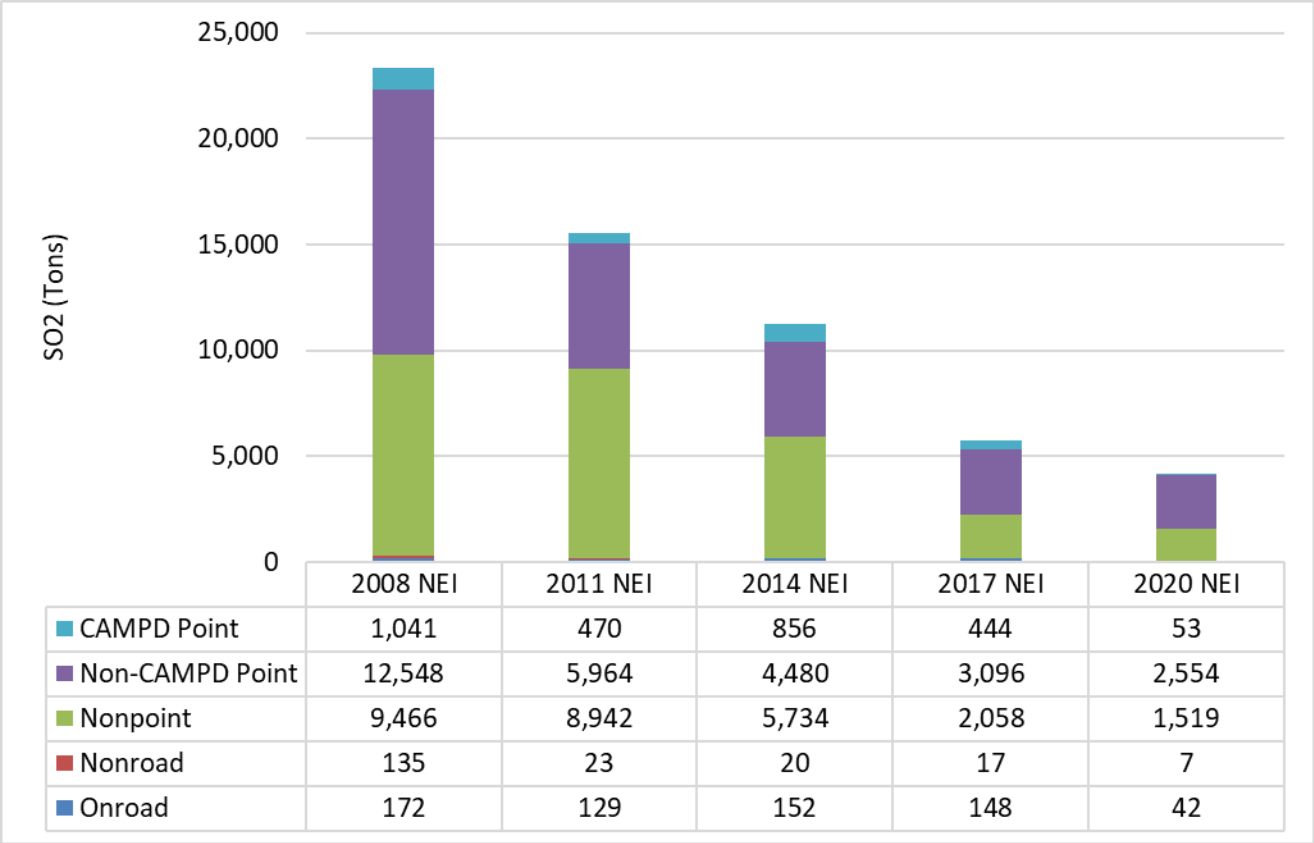
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	680	575	539	263	144
Non-CAMPD Point	16,081	12,963	11,729	9,931	8,412
Nonpoint	10,864	11,281	11,007	17,699	16,748
Nonroad	7,316	6,759	5,977	6,352	5,652
Onroad	36,666	28,207	23,094	15,646	7,979



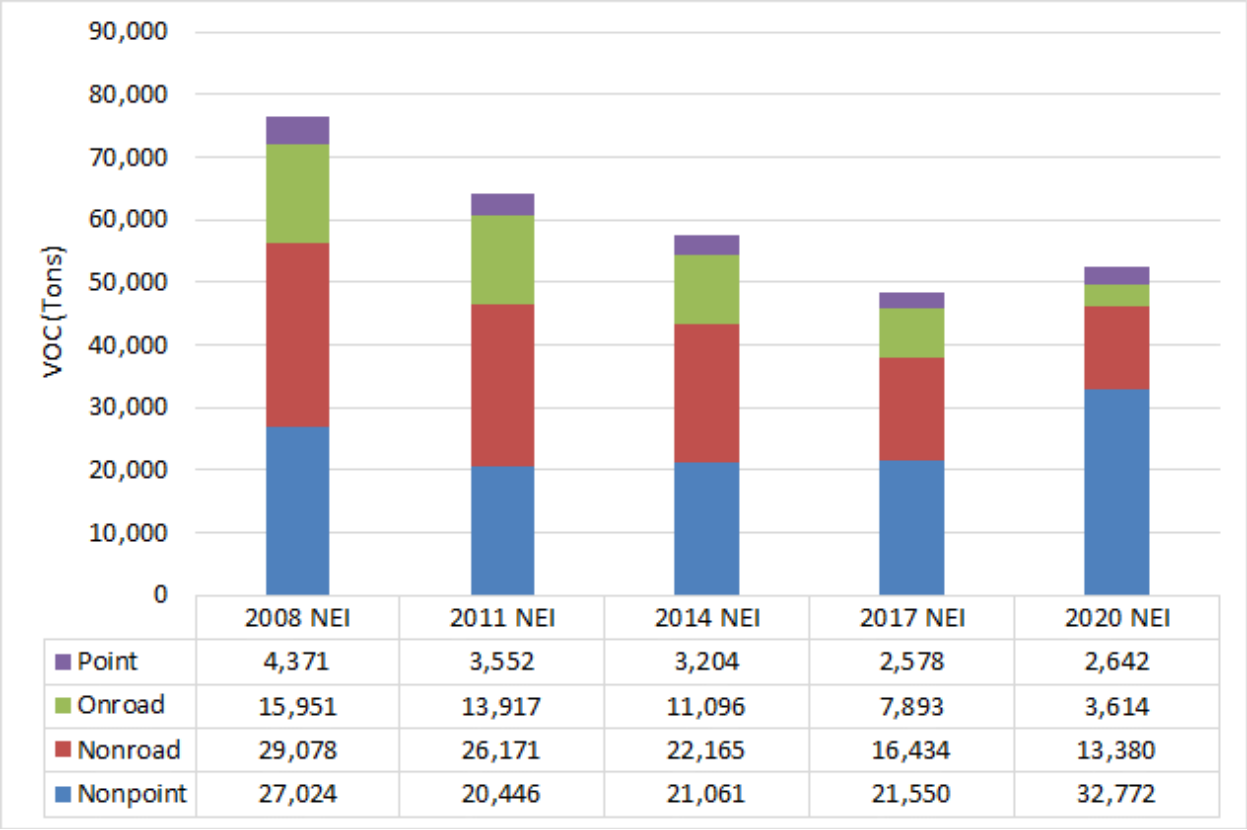
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	3,831	3,399	2,558	2,130	2,277
Onroad	1,744	1,649	1,487	1,157	776
Nonroad	1,123	1,068	944	686	568
Nonpoint	45,614	43,409	30,617	56,374	62,355



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	2,824	2,671	2,116	1,763	1,959
Onroad	1,387	1,036	843	576	311
Nonroad	1,053	1,001	883	643	531
Nonpoint	14,667	14,338	12,429	22,700	32,297

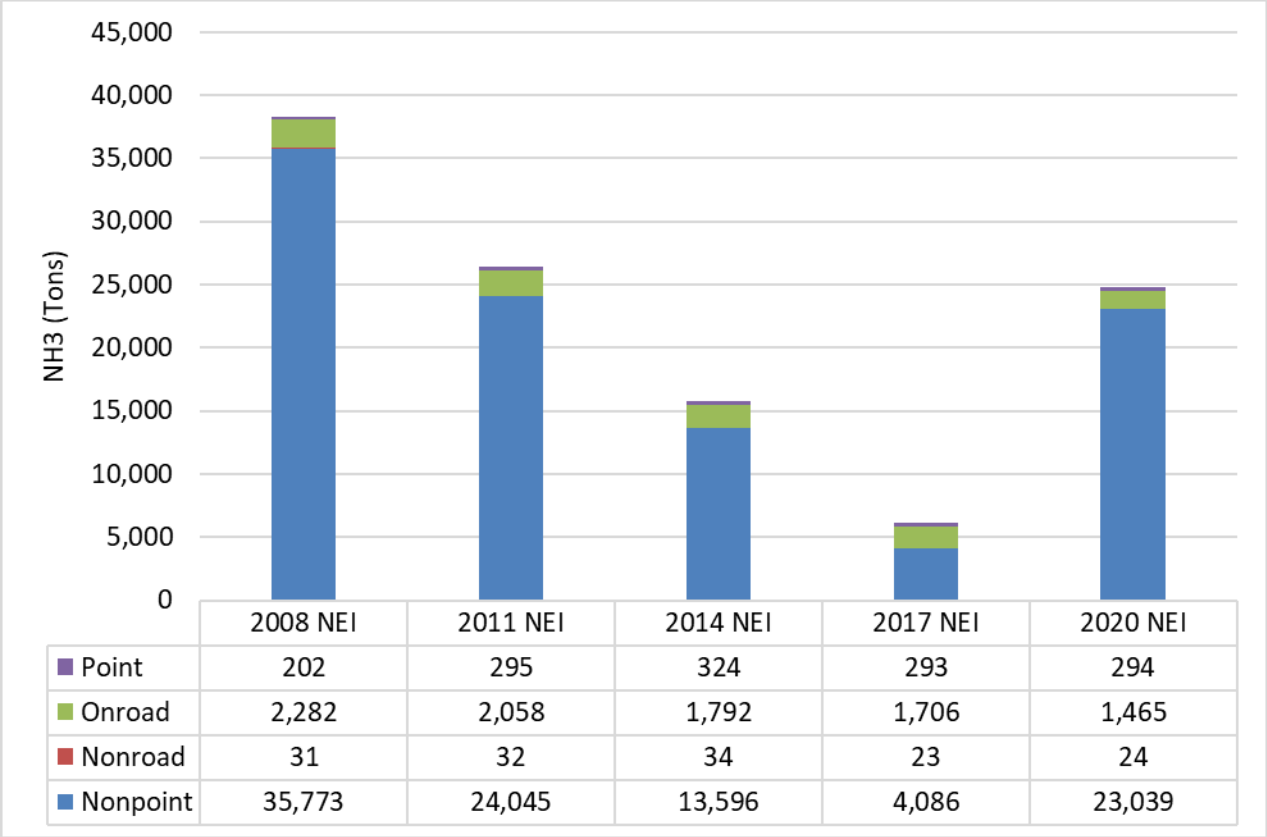


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	1,041	470	856	444	53
Non-CAMPD Point	12,548	5,964	4,480	3,096	2,554
Nonpoint	9,466	8,942	5,734	2,058	1,519
Nonroad	135	23	20	17	7
Onroad	172	129	152	148	42

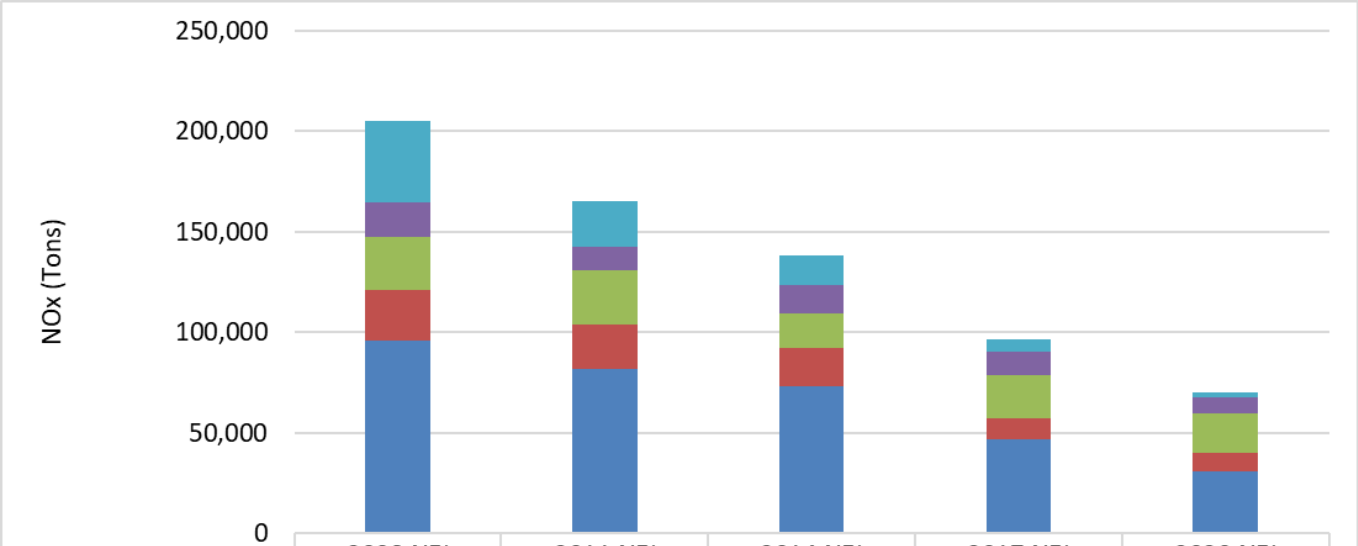


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	4,371	3,552	3,204	2,578	2,642
Onroad	15,951	13,917	11,096	7,893	3,614
Nonroad	29,078	26,171	22,165	16,434	13,380
Nonpoint	27,024	20,446	21,061	21,550	32,772

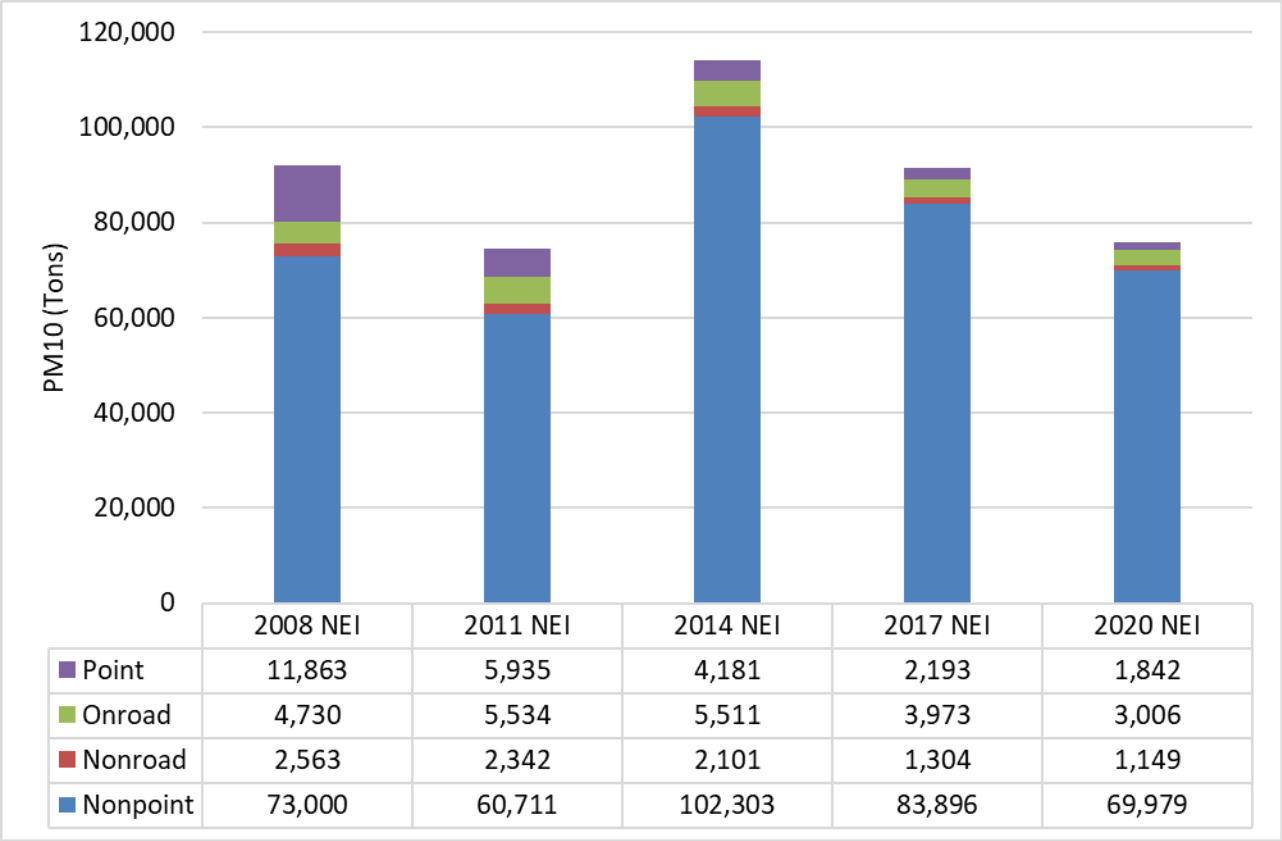
Maryland



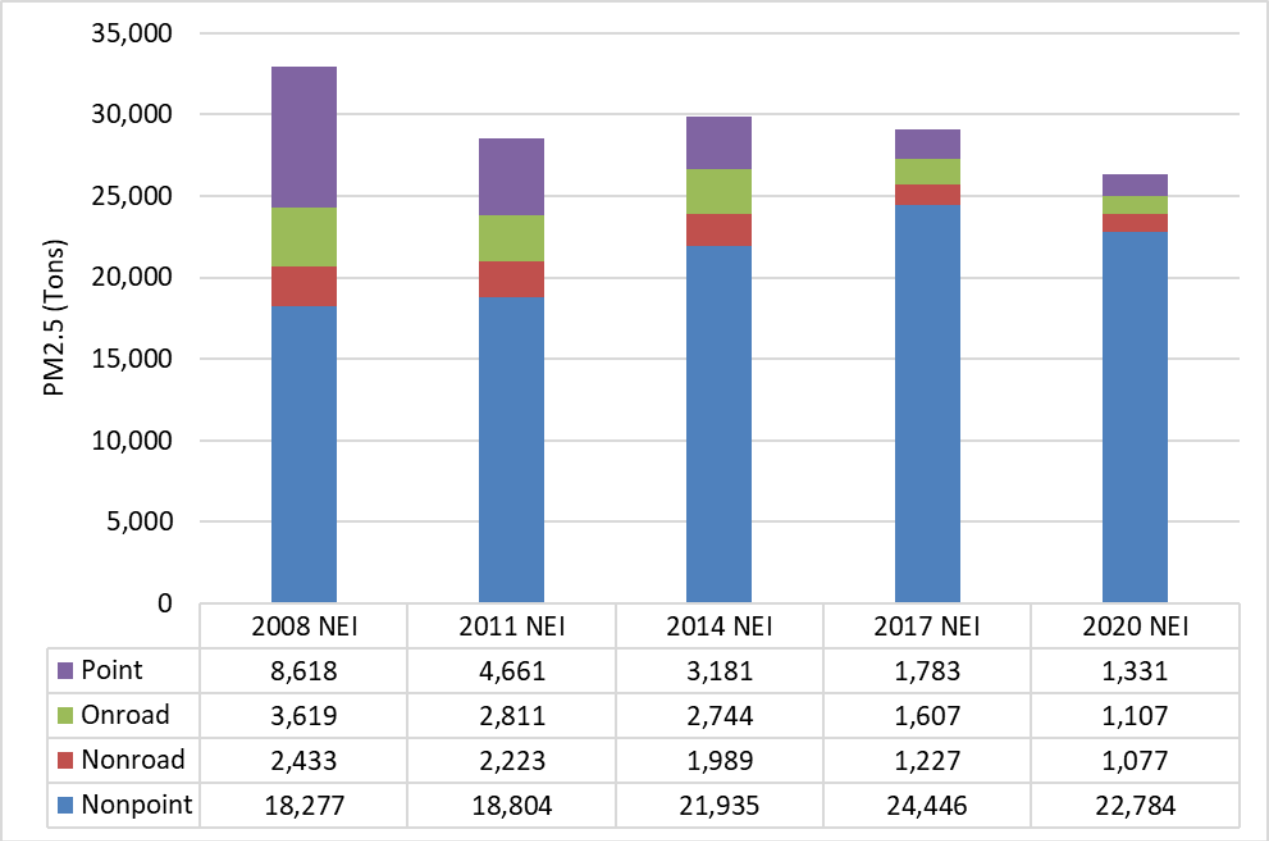
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	202	295	324	293	294
Onroad	2,282	2,058	1,792	1,706	1,465
Nonroad	31	32	34	23	24
Nonpoint	35,773	24,045	13,596	4,086	23,039



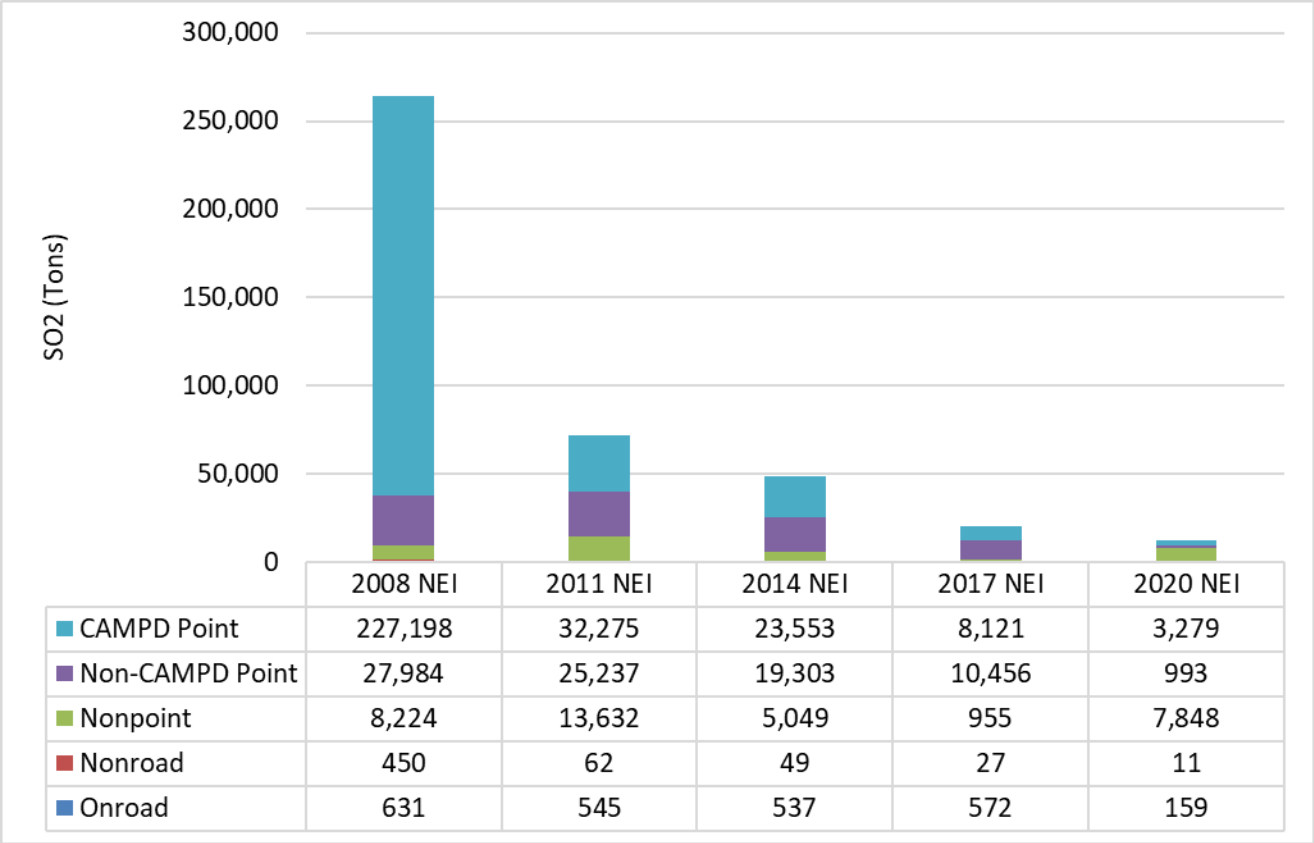
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	40,327	22,536	15,053	6,127	2,408
Non-CAMPD Point	17,521	11,898	13,771	11,207	8,239
Nonpoint	26,542	27,128	17,700	22,043	19,796
Nonroad	25,064	22,050	18,740	10,317	8,866
Onroad	95,785	81,572	73,232	46,616	30,919



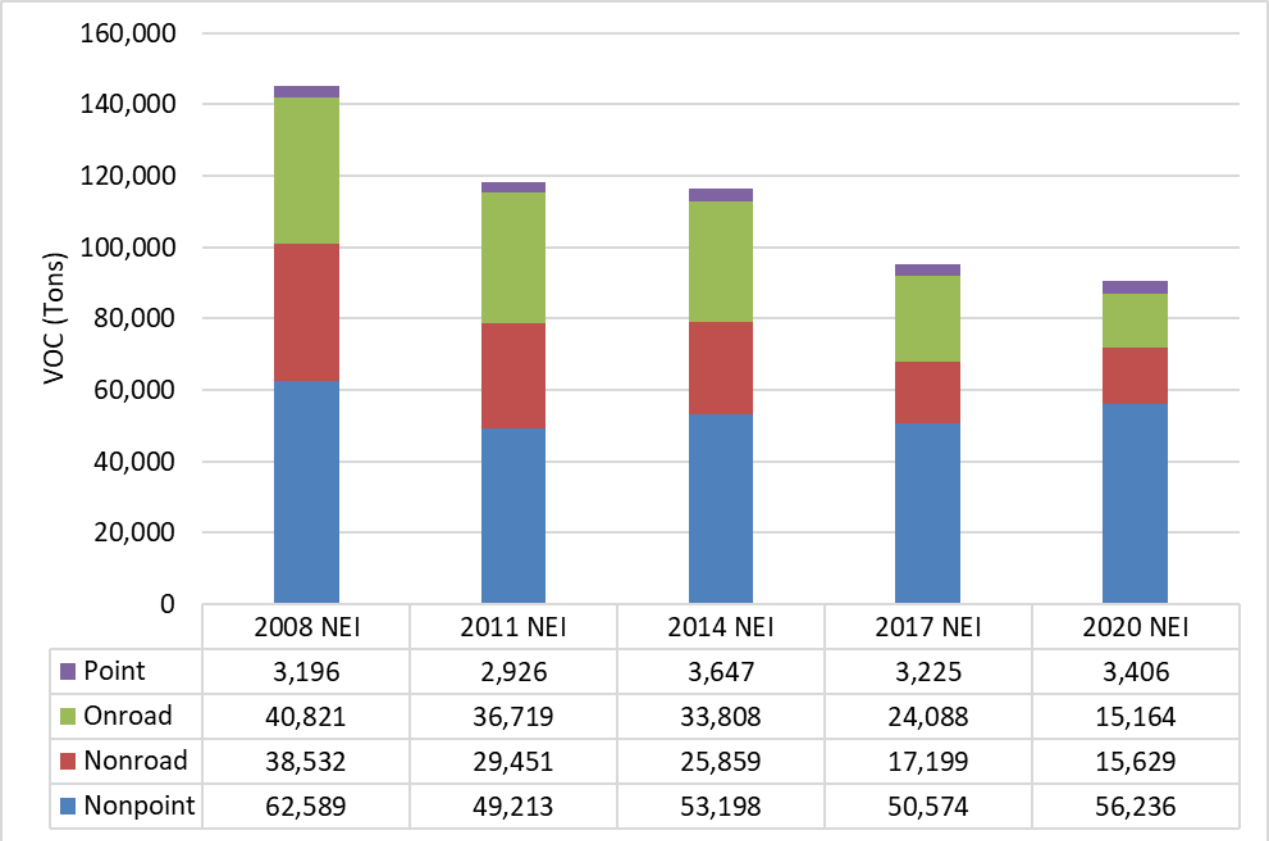
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	11,863	5,935	4,181	2,193	1,842
Onroad	4,730	5,534	5,511	3,973	3,006
Nonroad	2,563	2,342	2,101	1,304	1,149
Nonpoint	73,000	60,711	102,303	83,896	69,979



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	8,618	4,661	3,181	1,783	1,331
Onroad	3,619	2,811	2,744	1,607	1,107
Nonroad	2,433	2,223	1,989	1,227	1,077
Nonpoint	18,277	18,804	21,935	24,446	22,784

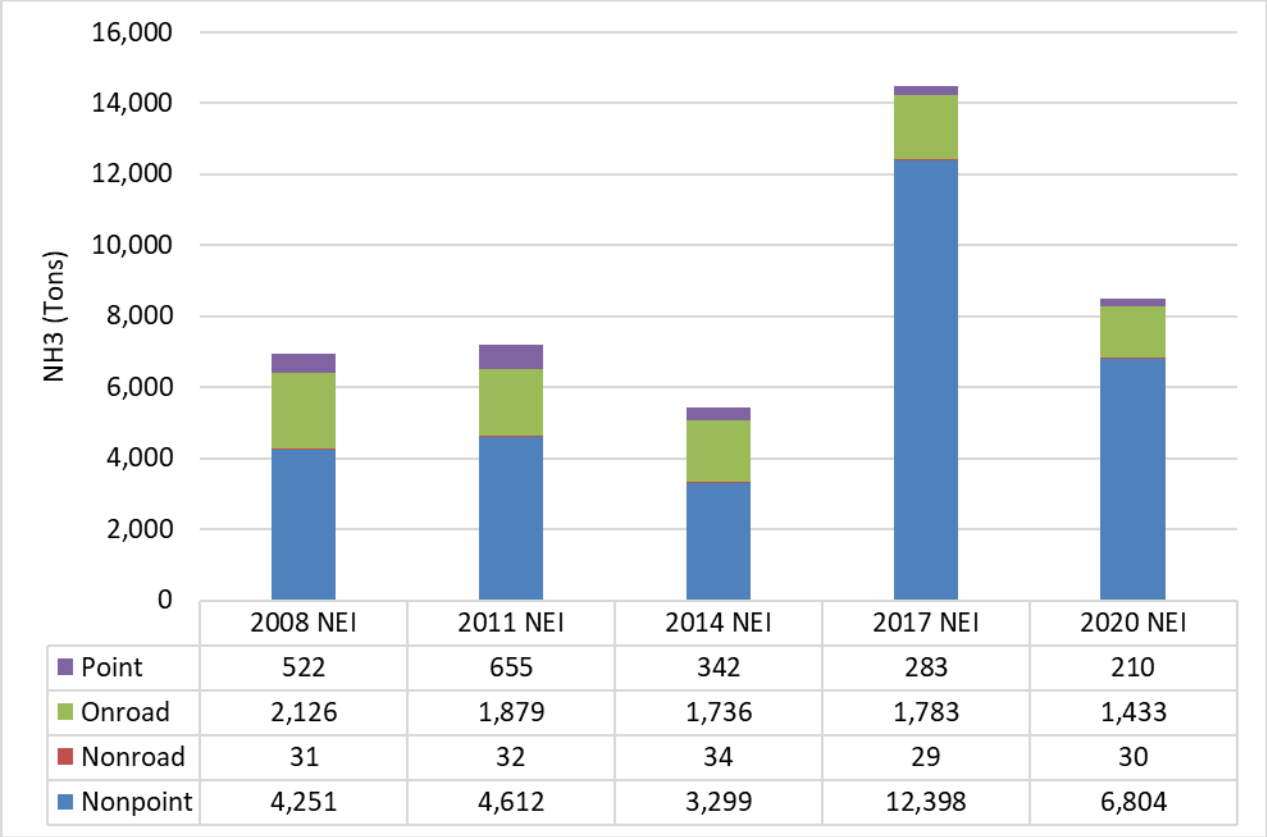


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	227,198	32,275	23,553	8,121	3,279
Non-CAMPD Point	27,984	25,237	19,303	10,456	993
Nonpoint	8,224	13,632	5,049	955	7,848
Nonroad	450	62	49	27	11
Onroad	631	545	537	572	159

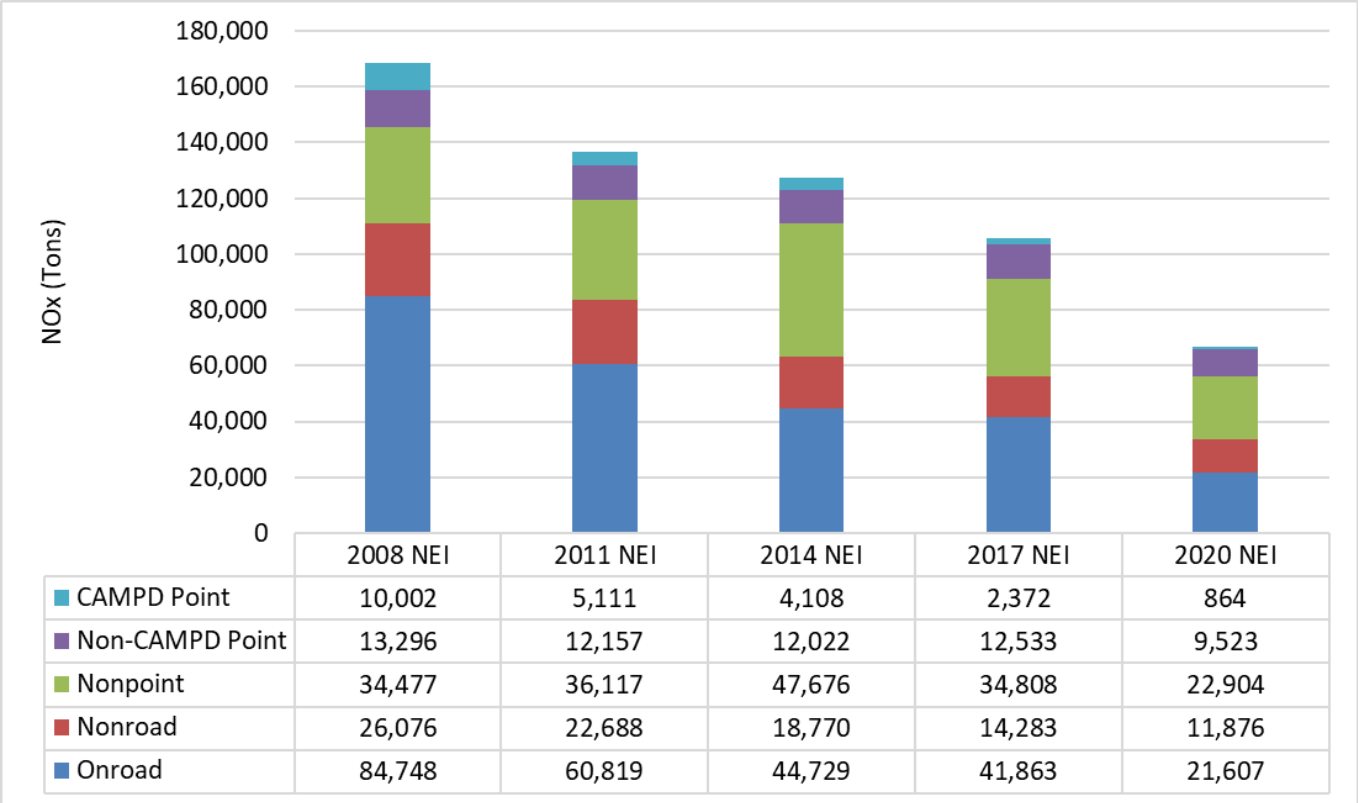


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	3,196	2,926	3,647	3,225	3,406
Onroad	40,821	36,719	33,808	24,088	15,164
Nonroad	38,532	29,451	25,859	17,199	15,629
Nonpoint	62,589	49,213	53,198	50,574	56,236

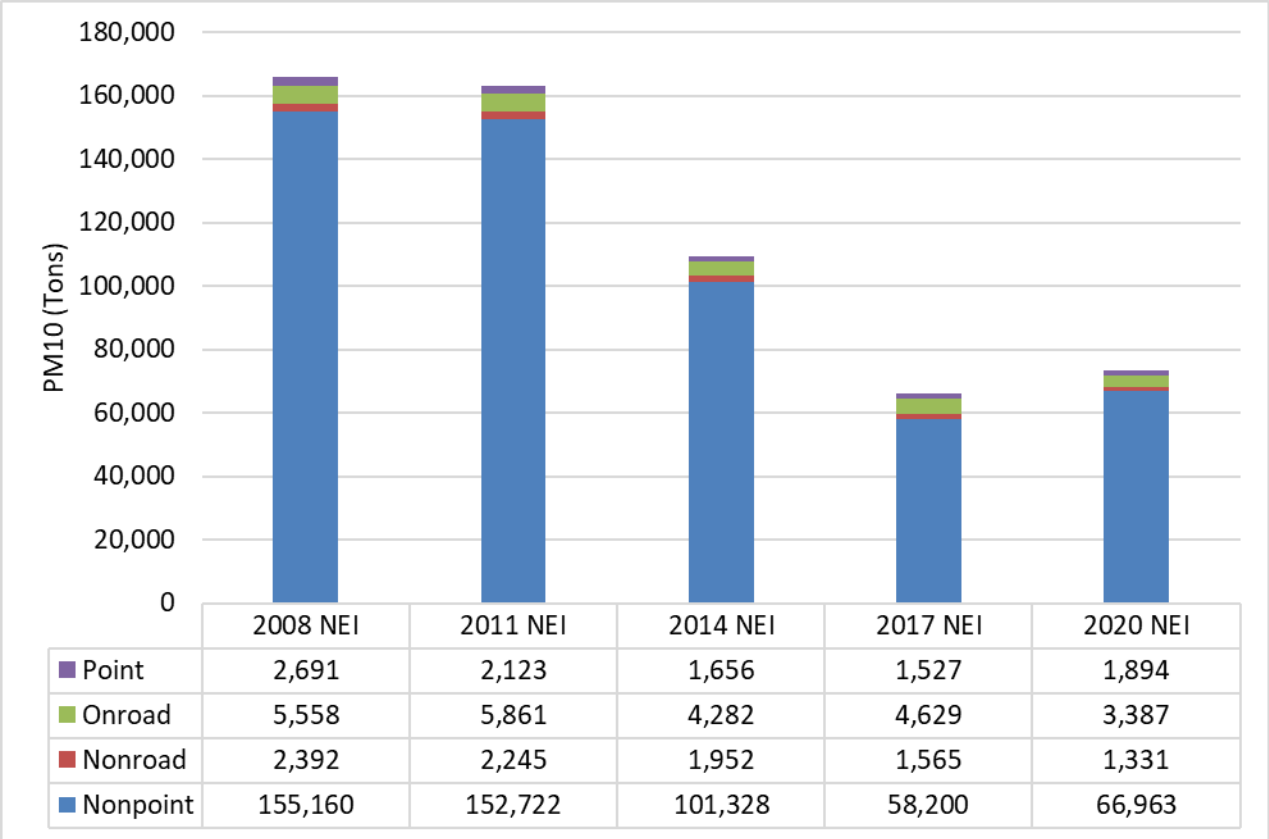
Massachusetts



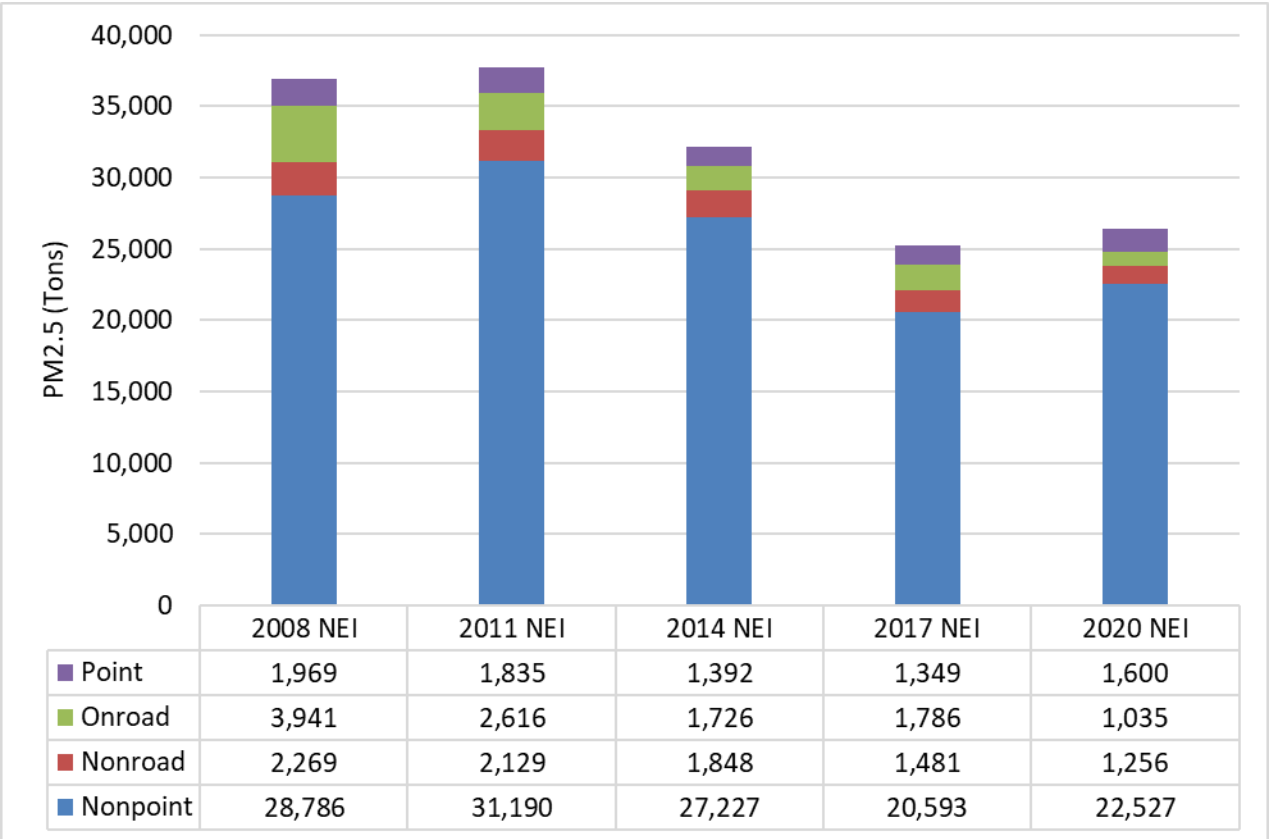
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	522	655	342	283	210
Onroad	2,126	1,879	1,736	1,783	1,433
Nonroad	31	32	34	29	30
Nonpoint	4,251	4,612	3,299	12,398	6,804



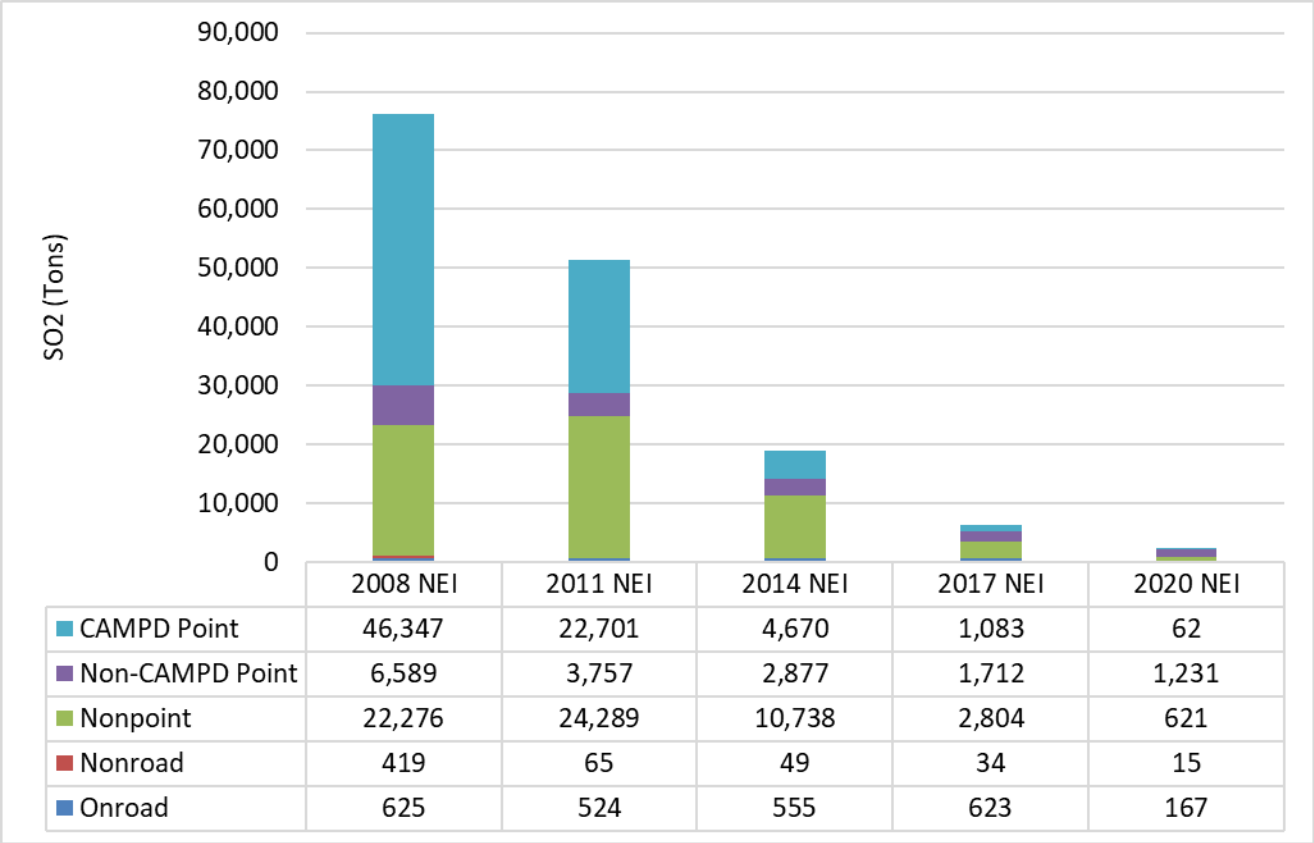
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	10,002	5,111	4,108	2,372	864
Non-CAMPD Point	13,296	12,157	12,022	12,533	9,523
Nonpoint	34,477	36,117	47,676	34,808	22,904
Nonroad	26,076	22,688	18,770	14,283	11,876
Onroad	84,748	60,819	44,729	41,863	21,607



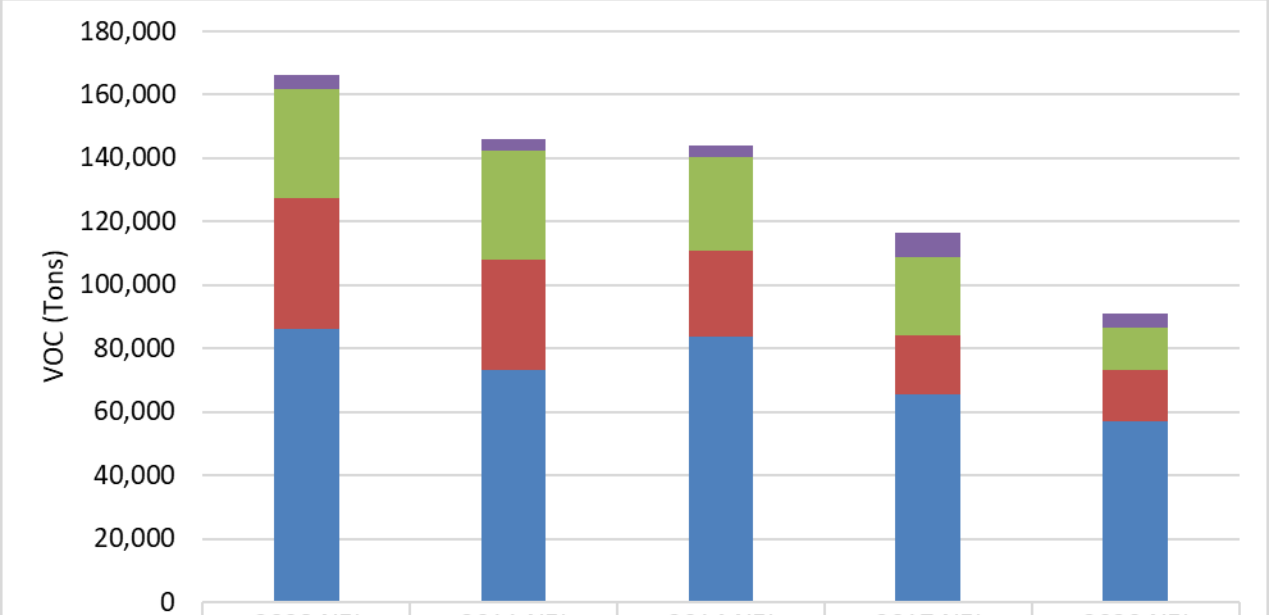
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	2,691	2,123	1,656	1,527	1,894
Onroad	5,558	5,861	4,282	4,629	3,387
Nonroad	2,392	2,245	1,952	1,565	1,331
Nonpoint	155,160	152,722	101,328	58,200	66,963



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	1,969	1,835	1,392	1,349	1,600
Onroad	3,941	2,616	1,726	1,786	1,035
Nonroad	2,269	2,129	1,848	1,481	1,256
Nonpoint	28,786	31,190	27,227	20,593	22,527

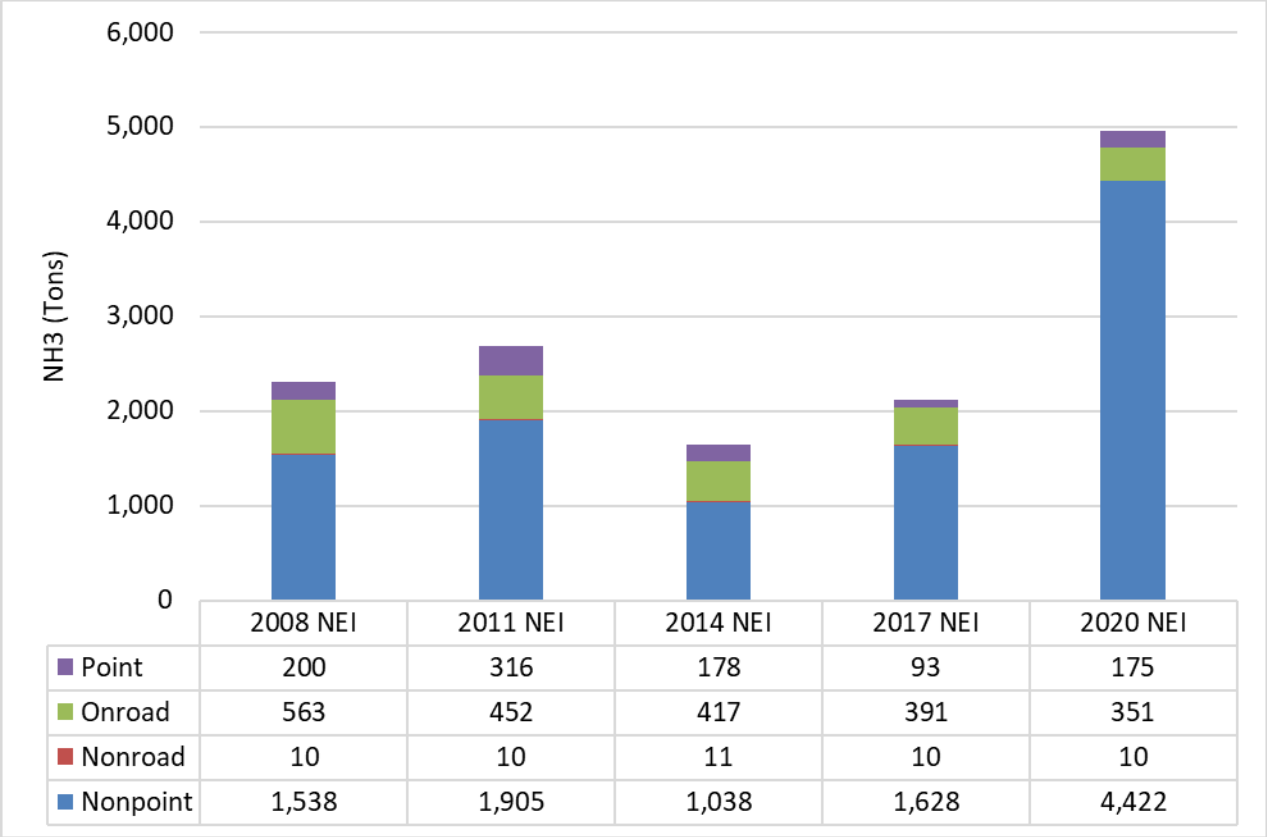


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	46,347	22,701	4,670	1,083	62
Non-CAMPD Point	6,589	3,757	2,877	1,712	1,231
Nonpoint	22,276	24,289	10,738	2,804	621
Nonroad	419	65	49	34	15
Onroad	625	524	555	623	167

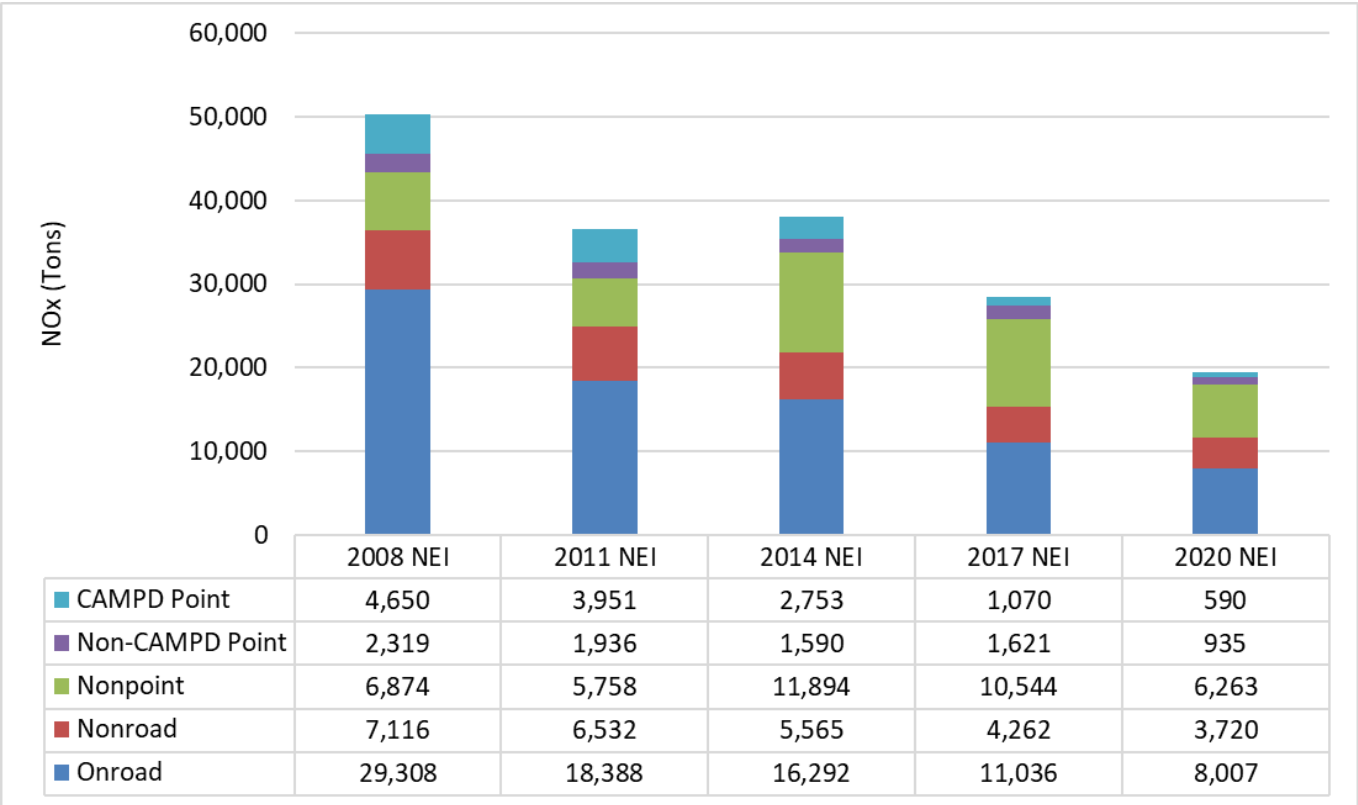


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	4,394	3,919	3,875	7,617	4,204
Onroad	34,481	34,311	29,365	24,742	13,361
Nonroad	41,066	34,756	26,895	18,215	16,195
Nonpoint	86,145	73,081	83,880	65,694	57,021

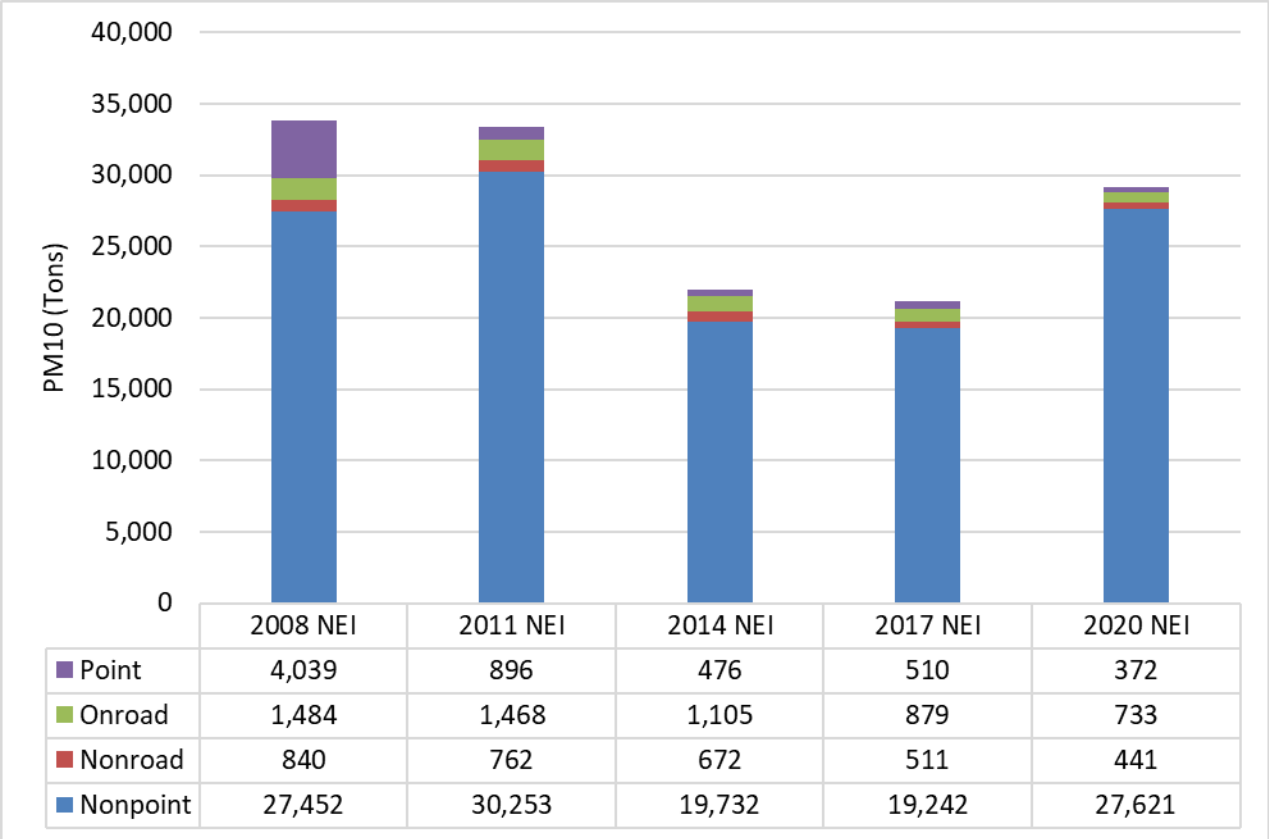
New Hampshire



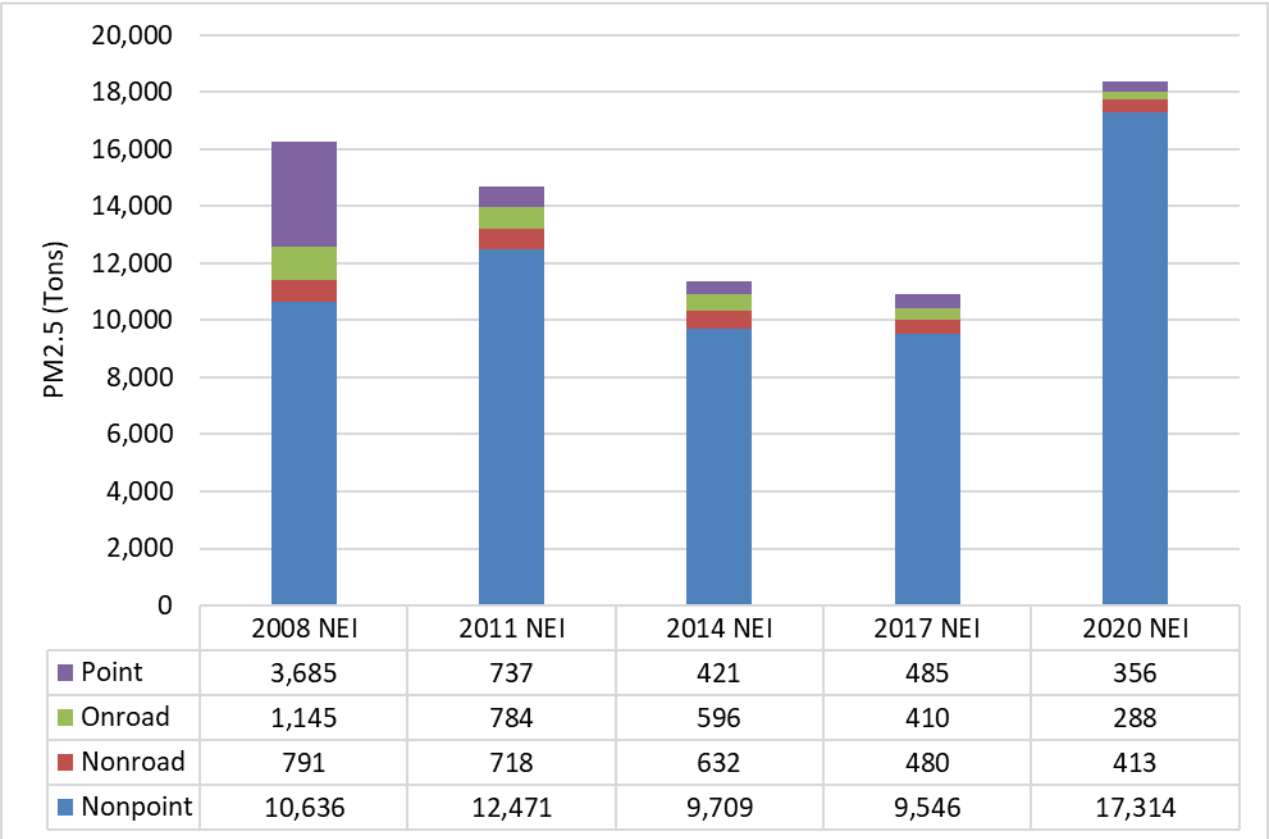
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	200	316	178	93	175
Onroad	563	452	417	391	351
Nonroad	10	10	11	10	10
Nonpoint	1,538	1,905	1,038	1,628	4,422



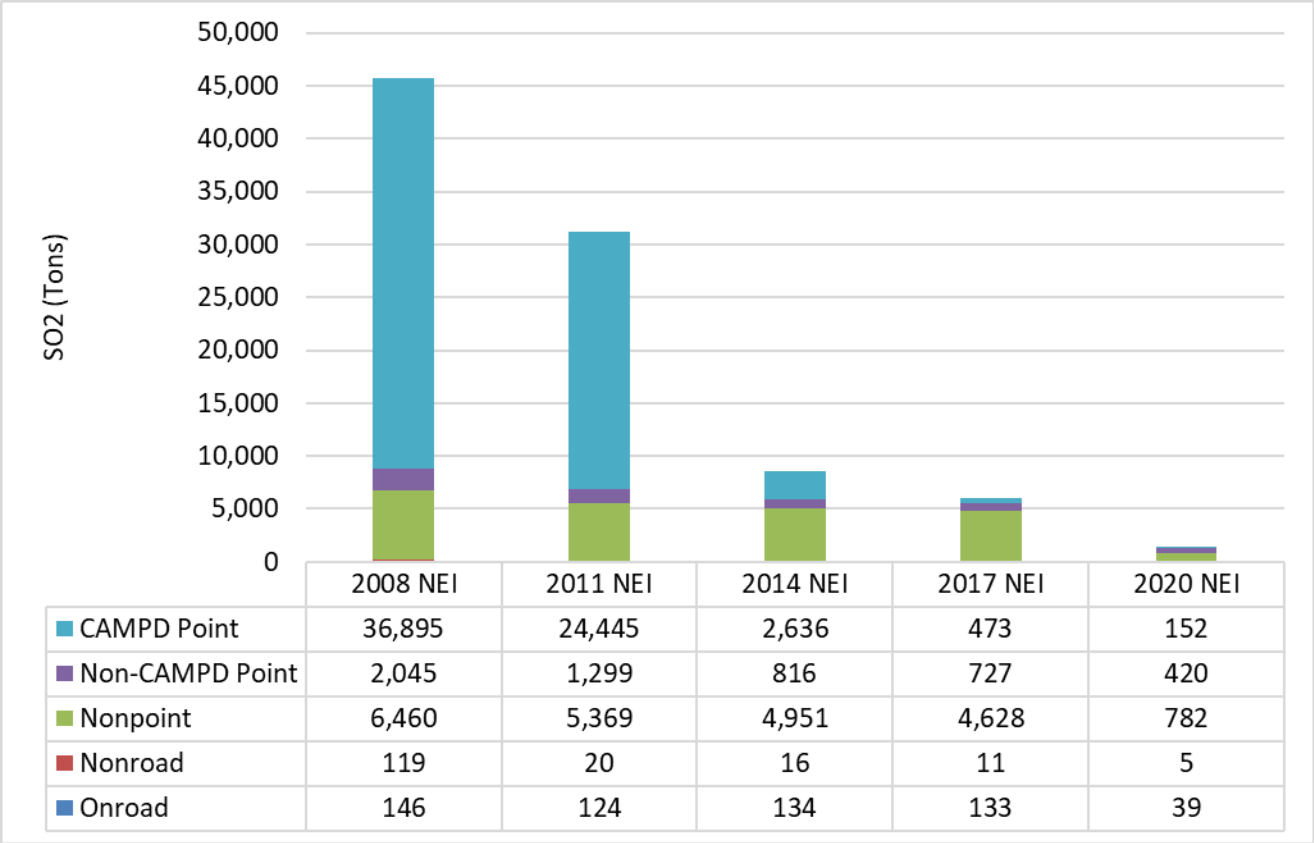
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	4,650	3,951	2,753	1,070	590
Non-CAMPD Point	2,319	1,936	1,590	1,621	935
Nonpoint	6,874	5,758	11,894	10,544	6,263
Nonroad	7,116	6,532	5,565	4,262	3,720
Onroad	29,308	18,388	16,292	11,036	8,007



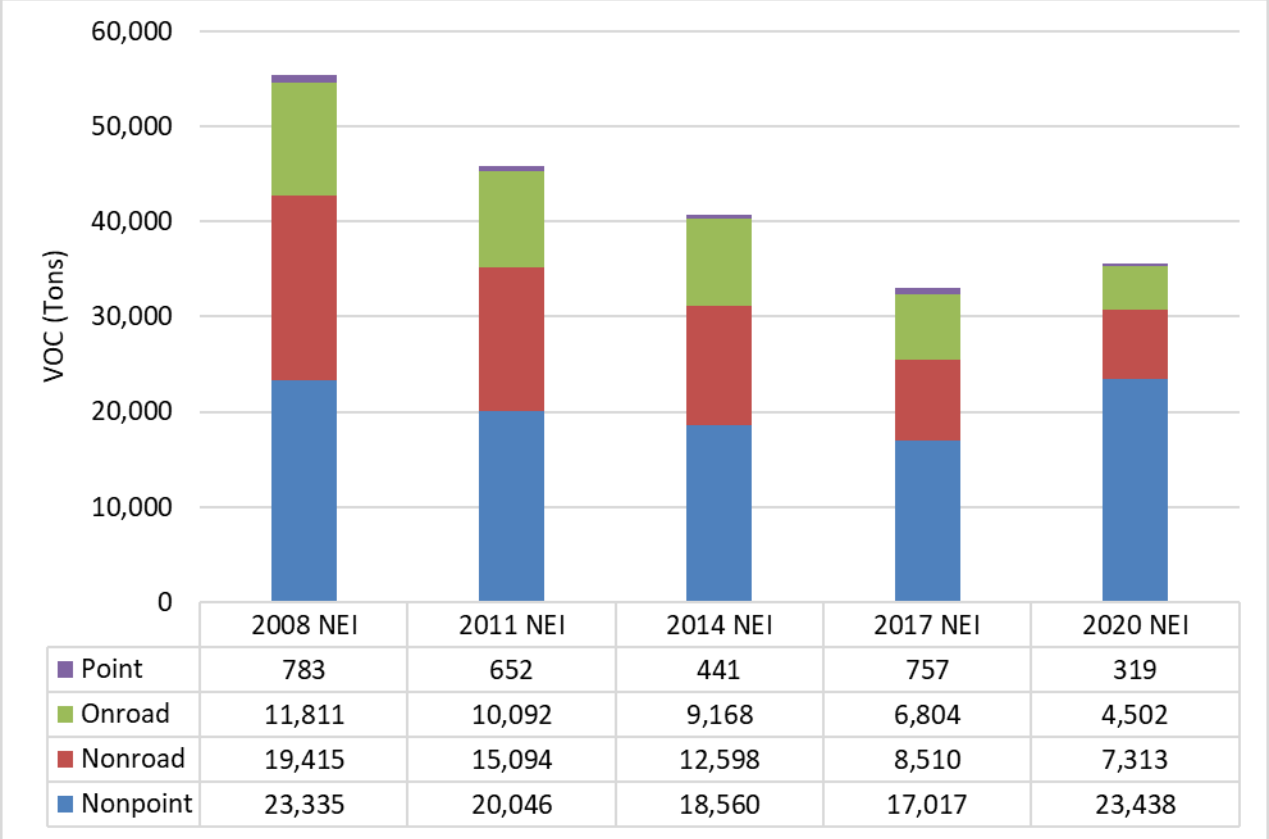
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	4,039	896	476	510	372
Onroad	1,484	1,468	1,105	879	733
Nonroad	840	762	672	511	441
Nonpoint	27,452	30,253	19,732	19,242	27,621



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	3,685	737	421	485	356
Onroad	1,145	784	596	410	288
Nonroad	791	718	632	480	413
Nonpoint	10,636	12,471	9,709	9,546	17,314

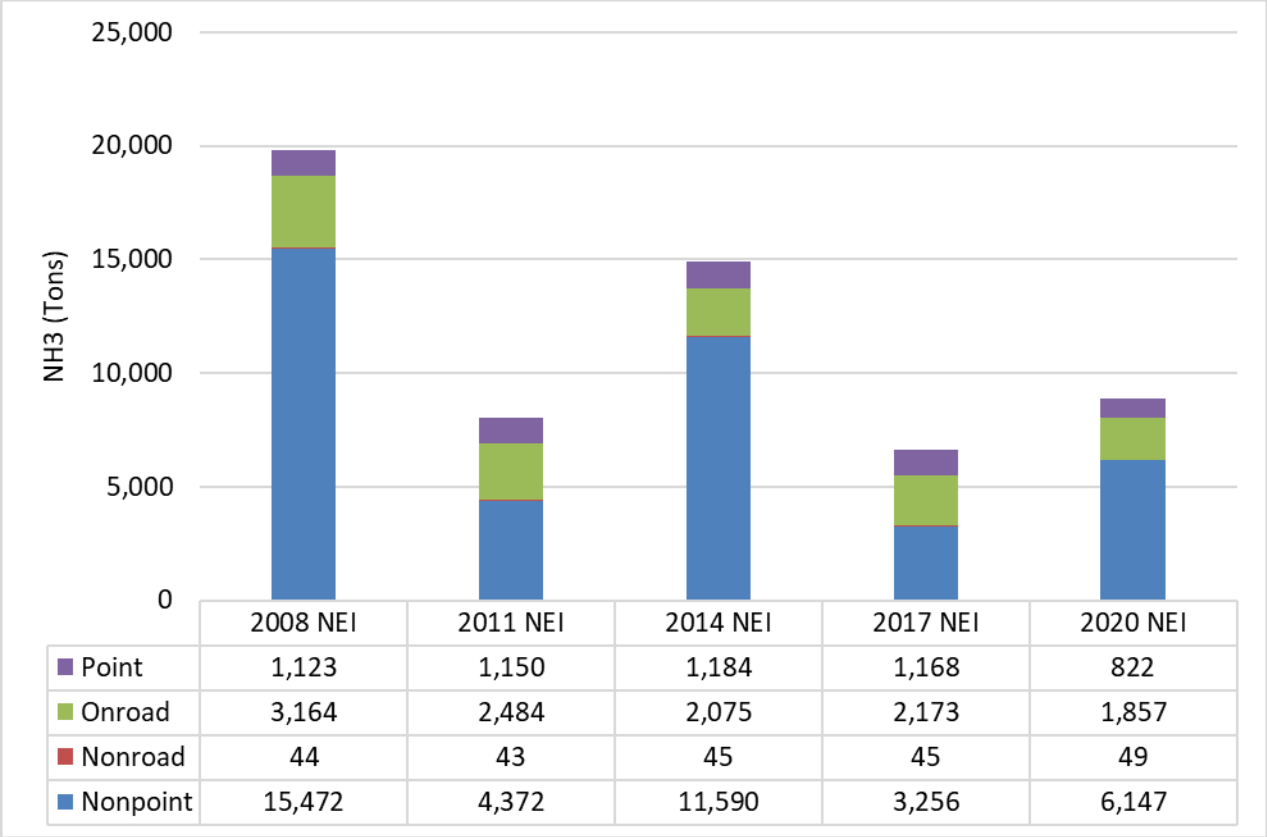


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	36,895	24,445	2,636	473	152
Non-CAMPD Point	2,045	1,299	816	727	420
Nonpoint	6,460	5,369	4,951	4,628	782
Nonroad	119	20	16	11	5
Onroad	146	124	134	133	39

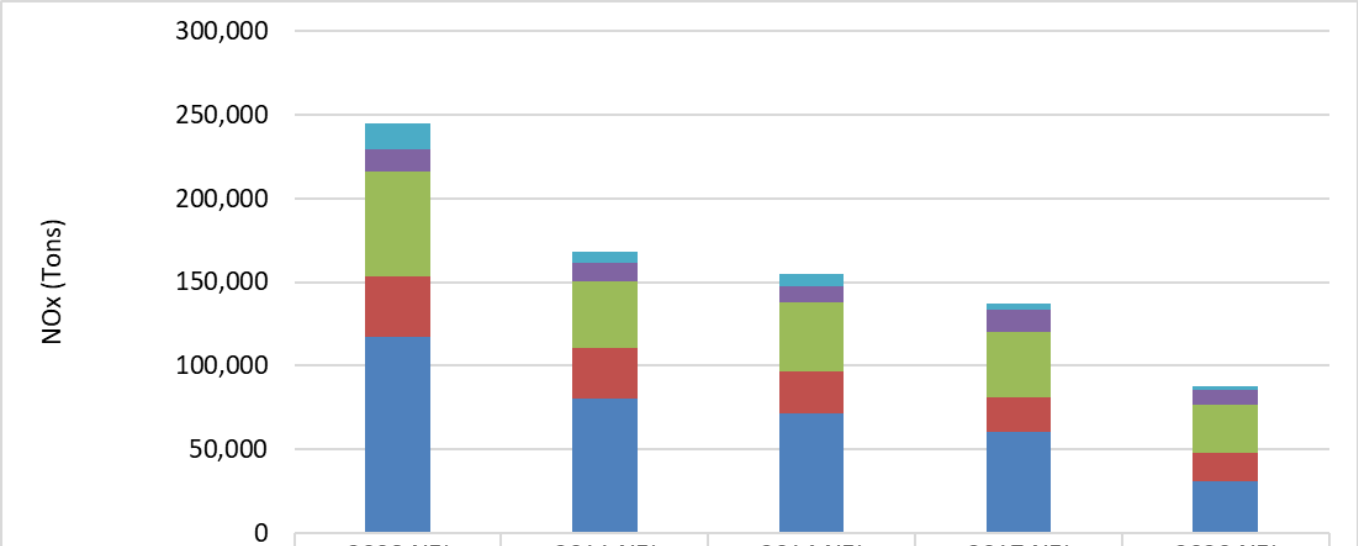


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	783	652	441	757	319
Onroad	11,811	10,092	9,168	6,804	4,502
Nonroad	19,415	15,094	12,598	8,510	7,313
Nonpoint	23,335	20,046	18,560	17,017	23,438

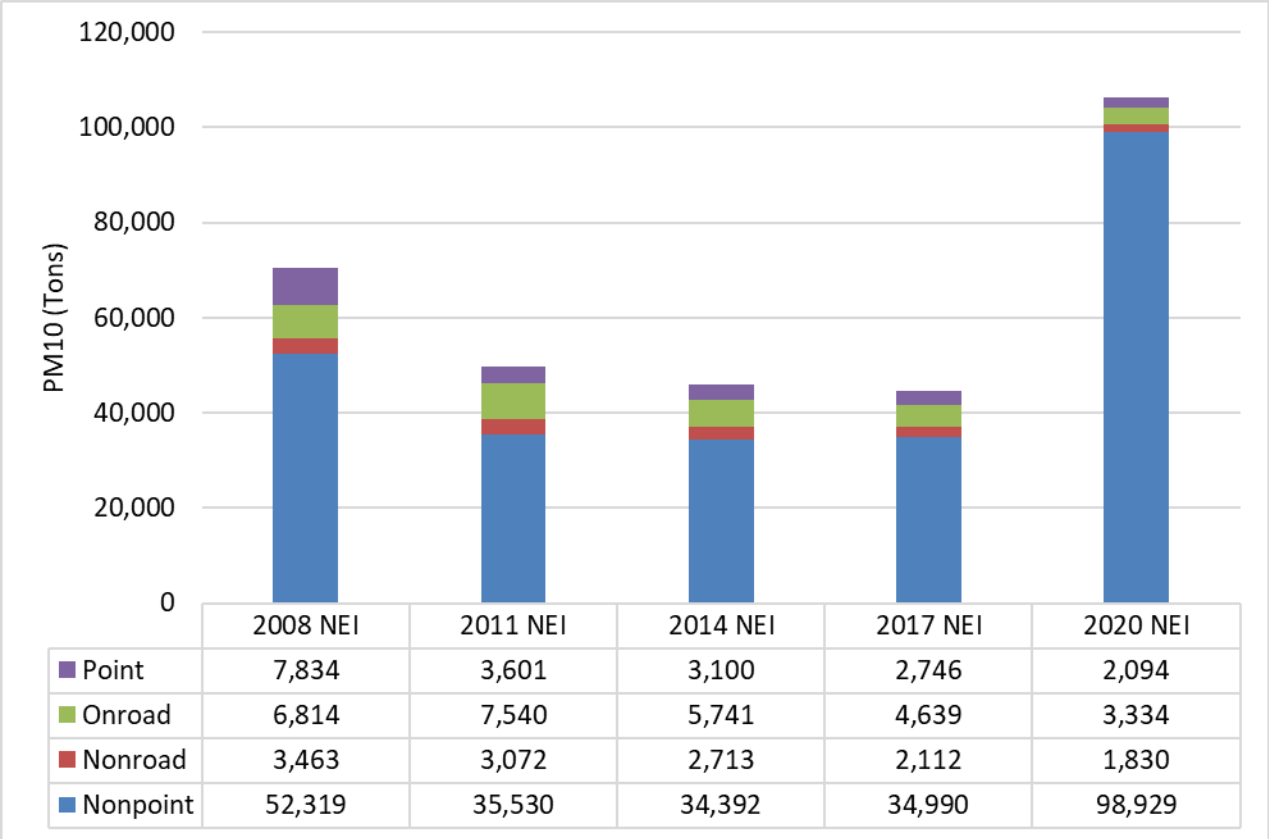
New Jersey



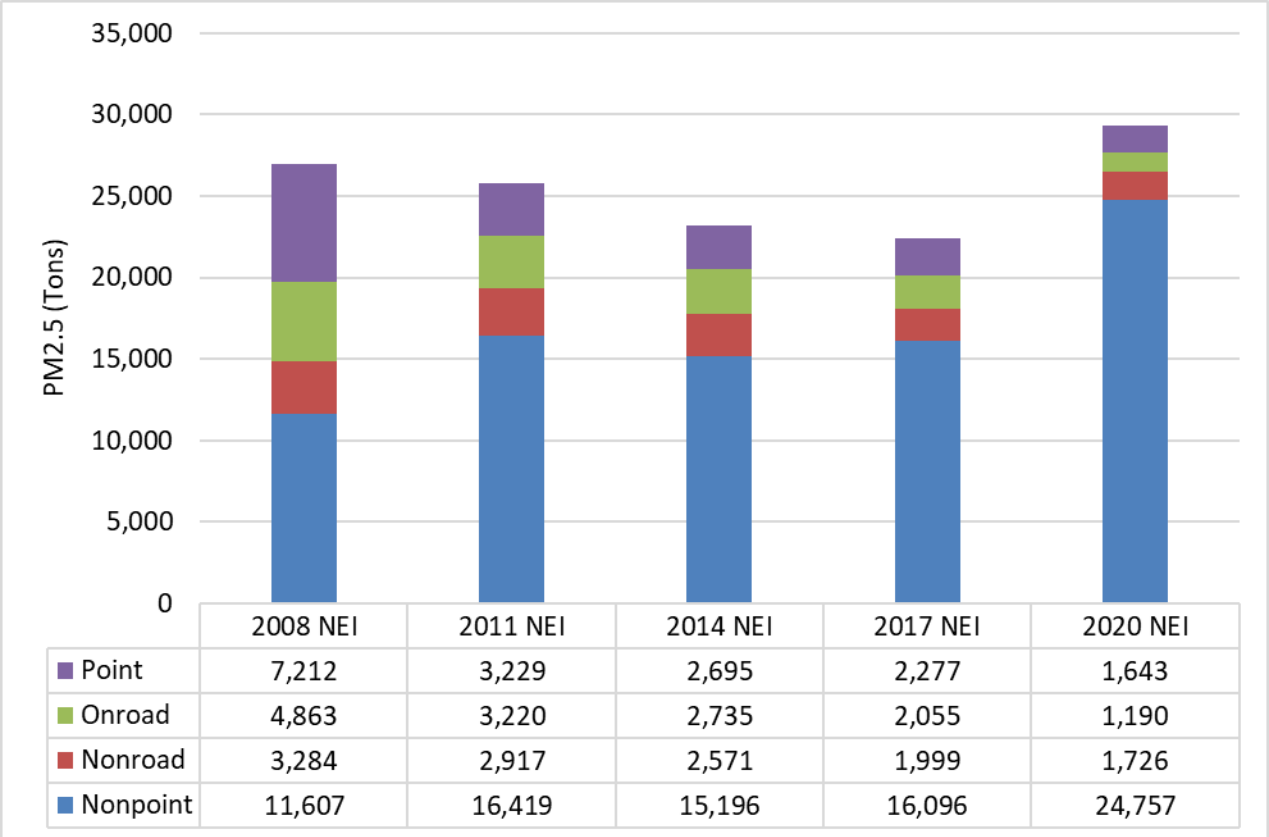
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	1,123	1,150	1,184	1,168	822
Onroad	3,164	2,484	2,075	2,173	1,857
Nonroad	44	43	45	45	49
Nonpoint	15,472	4,372	11,590	3,256	6,147



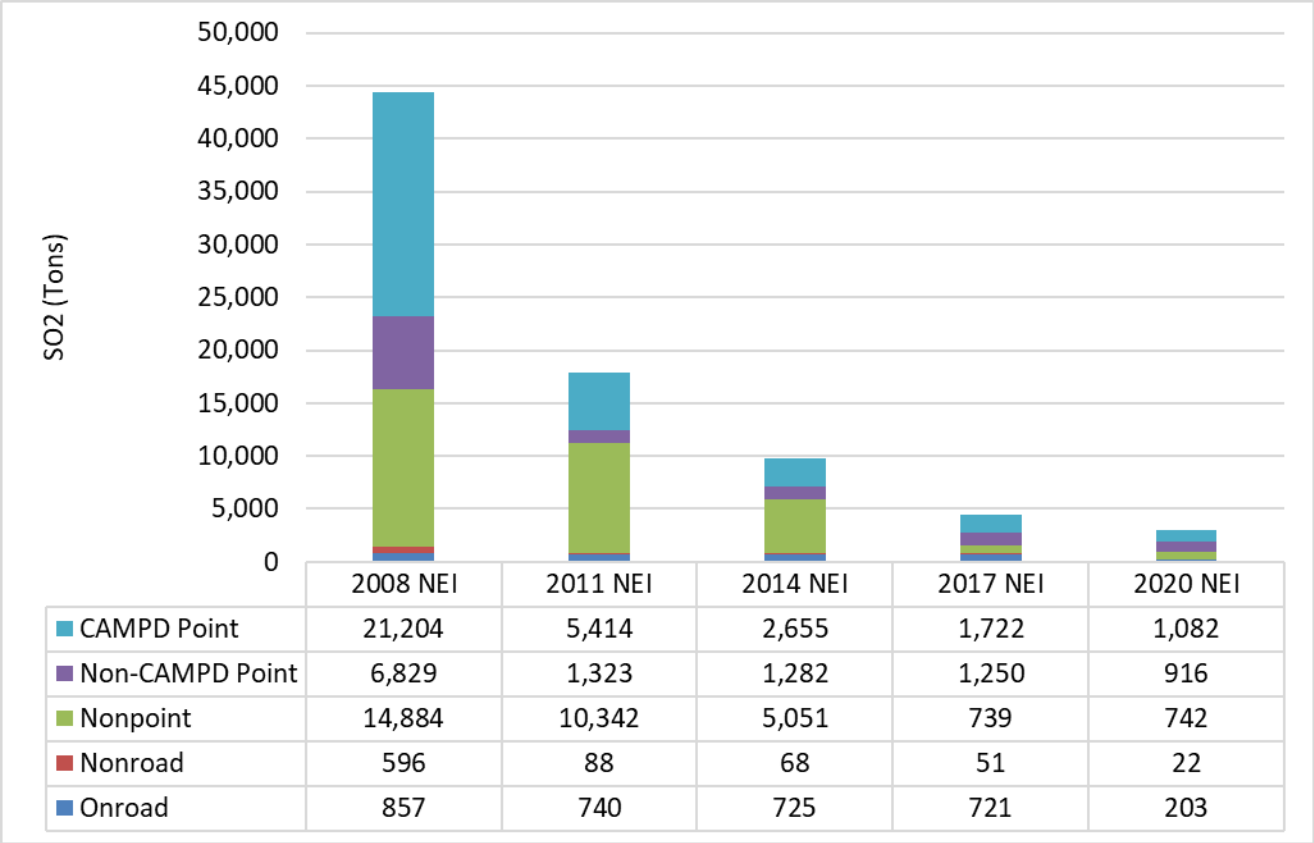
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	15,147	7,040	7,096	3,443	2,575
Non-CAMPD Point	13,591	10,882	9,778	13,487	8,508
Nonpoint	62,264	39,373	41,292	39,178	28,936
Nonroad	36,342	30,303	25,055	20,172	17,397
Onroad	117,208	80,699	71,433	60,681	30,746



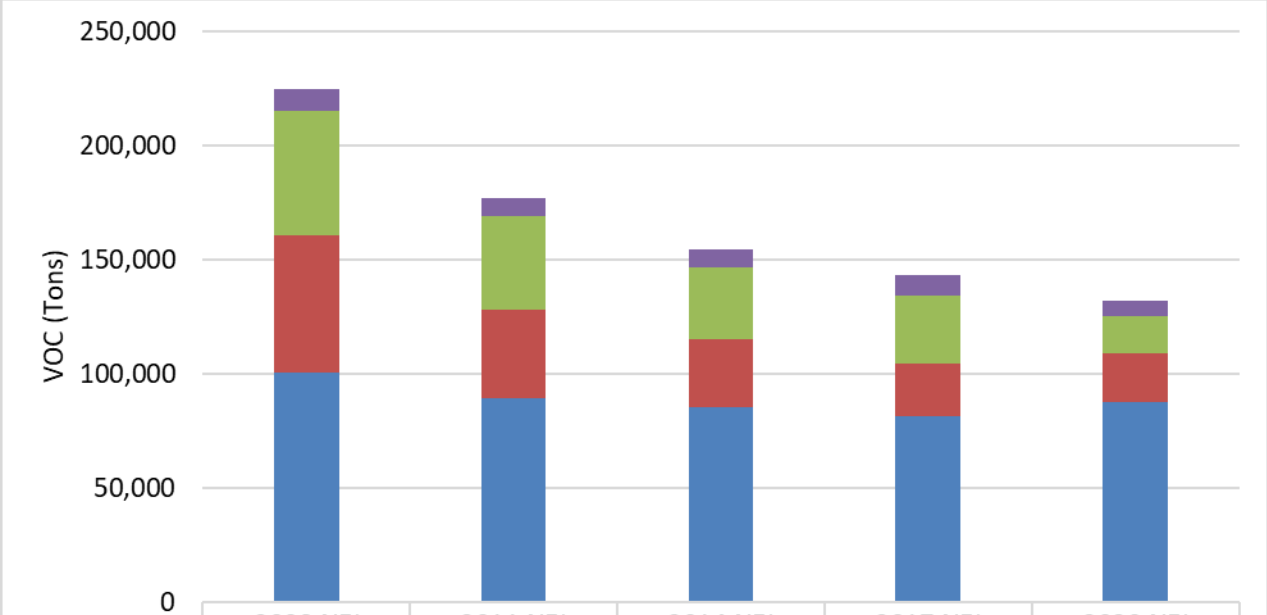
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	7,834	3,601	3,100	2,746	2,094
Onroad	6,814	7,540	5,741	4,639	3,334
Nonroad	3,463	3,072	2,713	2,112	1,830
Nonpoint	52,319	35,530	34,392	34,990	98,929



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	7,212	3,229	2,695	2,277	1,643
Onroad	4,863	3,220	2,735	2,055	1,190
Nonroad	3,284	2,917	2,571	1,999	1,726
Nonpoint	11,607	16,419	15,196	16,096	24,757

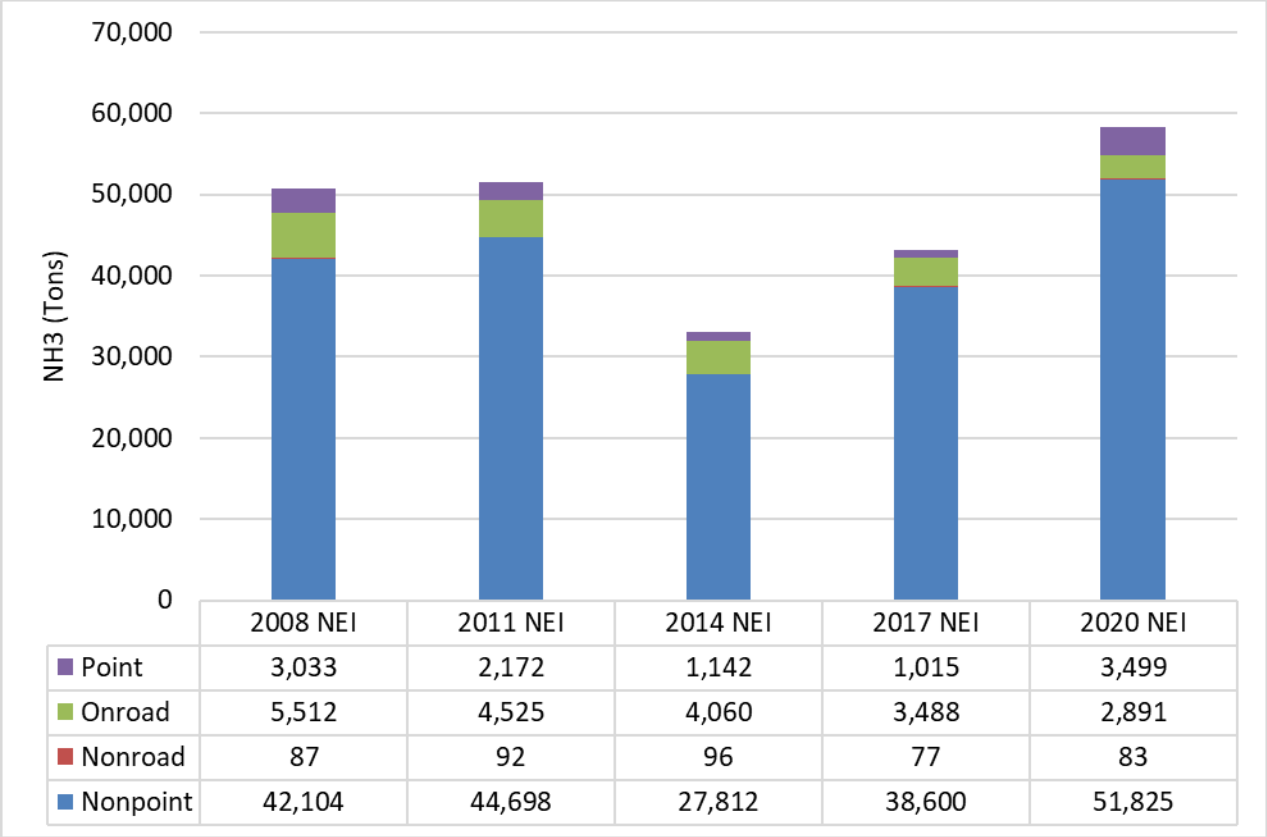


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	21,204	5,414	2,655	1,722	1,082
Non-CAMPD Point	6,829	1,323	1,282	1,250	916
Nonpoint	14,884	10,342	5,051	739	742
Nonroad	596	88	68	51	22
Onroad	857	740	725	721	203

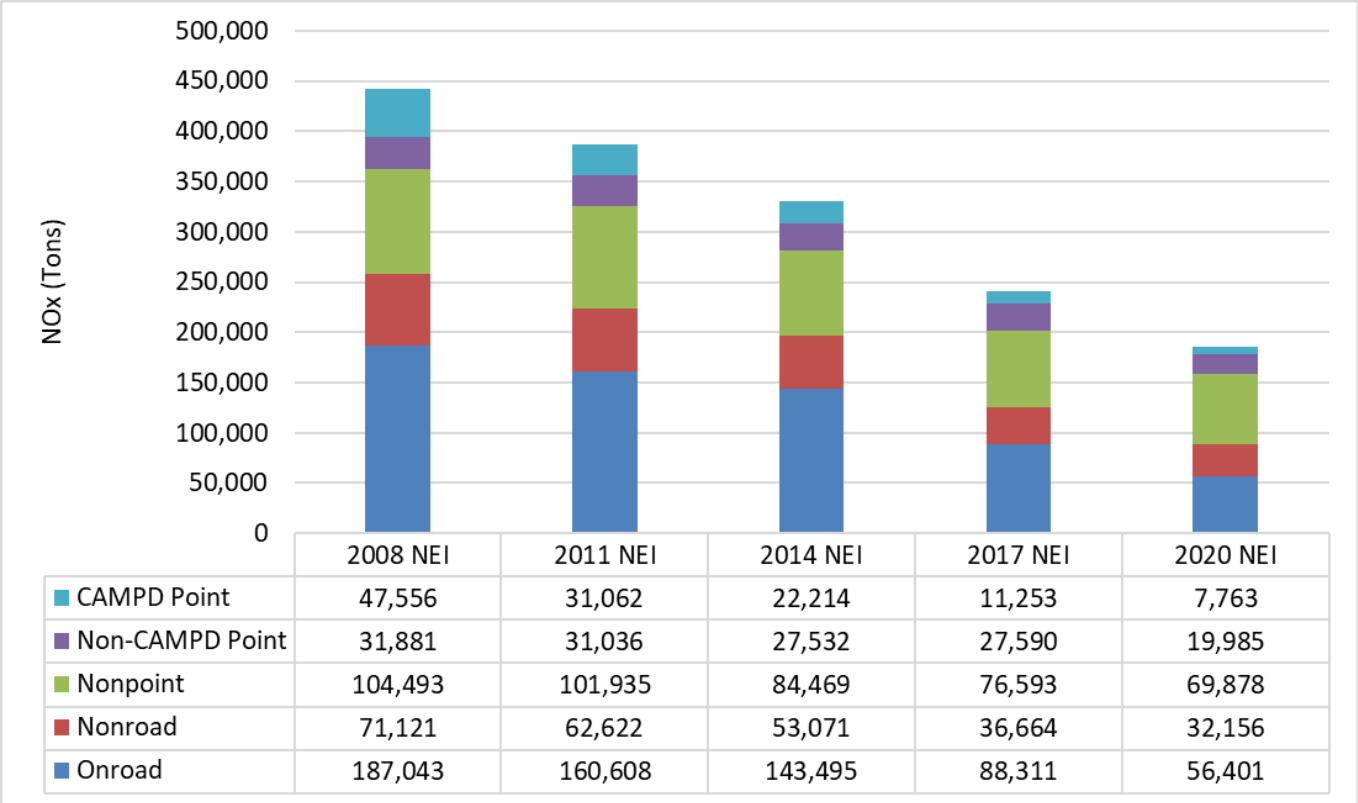


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	9,778	7,800	7,956	8,965	7,142
Onroad	54,069	41,294	31,234	29,694	16,302
Nonroad	60,034	38,698	30,068	23,461	20,921
Nonpoint	100,807	89,250	85,331	81,263	87,878

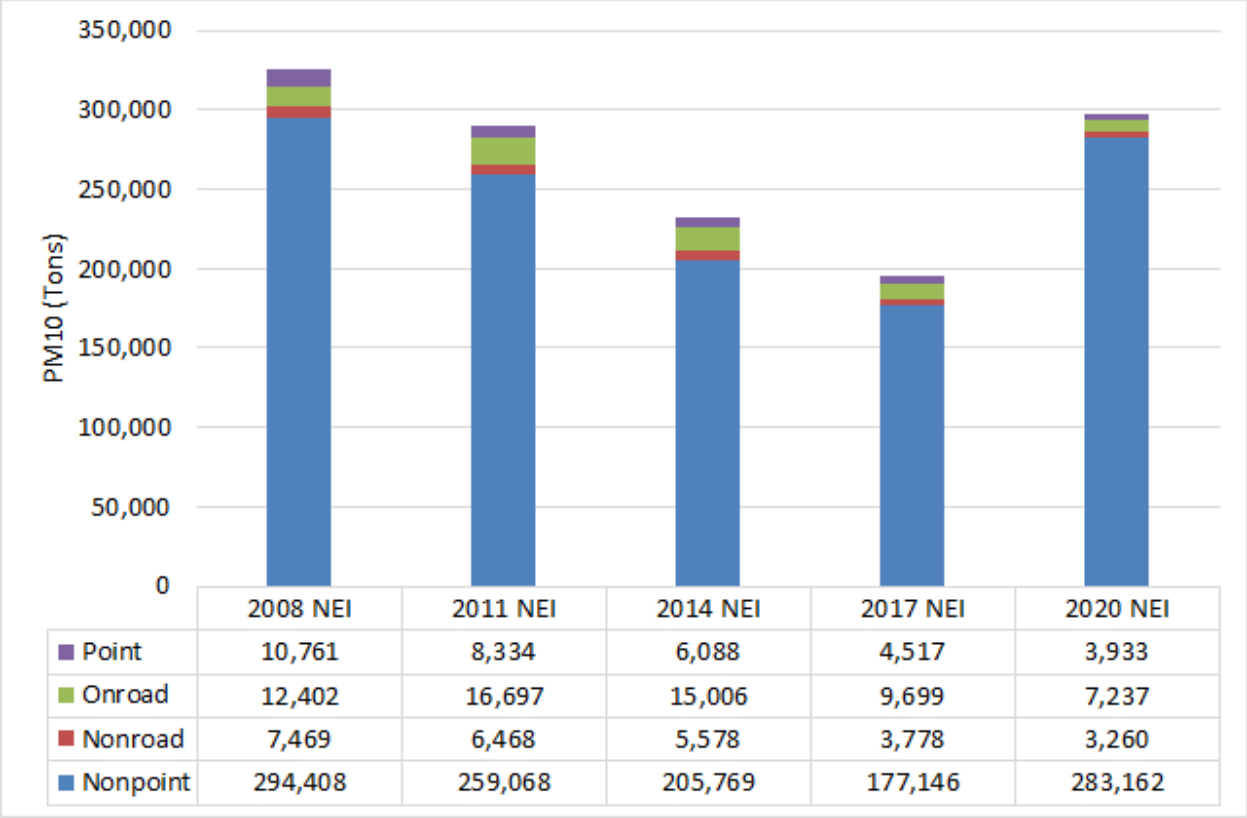
New York



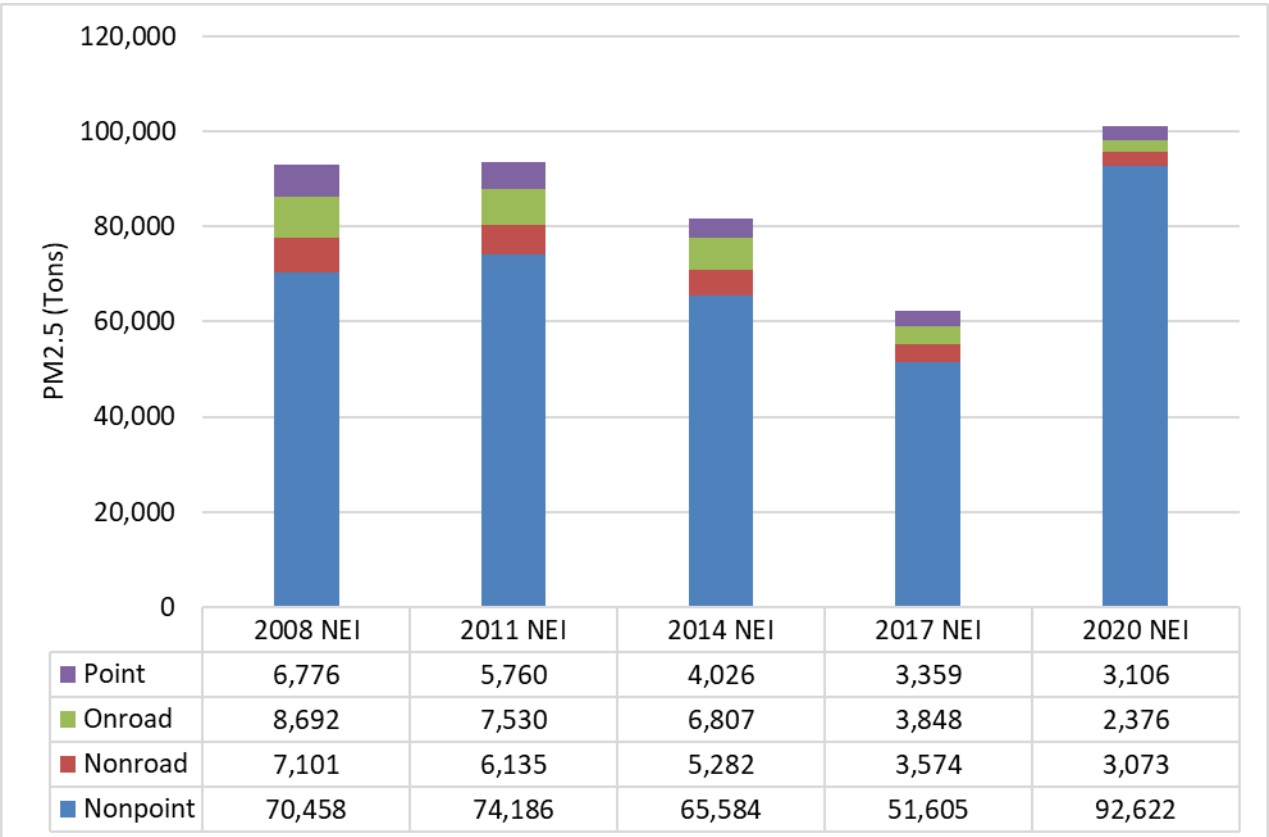
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	3,033	2,172	1,142	1,015	3,499
Onroad	5,512	4,525	4,060	3,488	2,891
Nonroad	87	92	96	77	83
Nonpoint	42,104	44,698	27,812	38,600	51,825



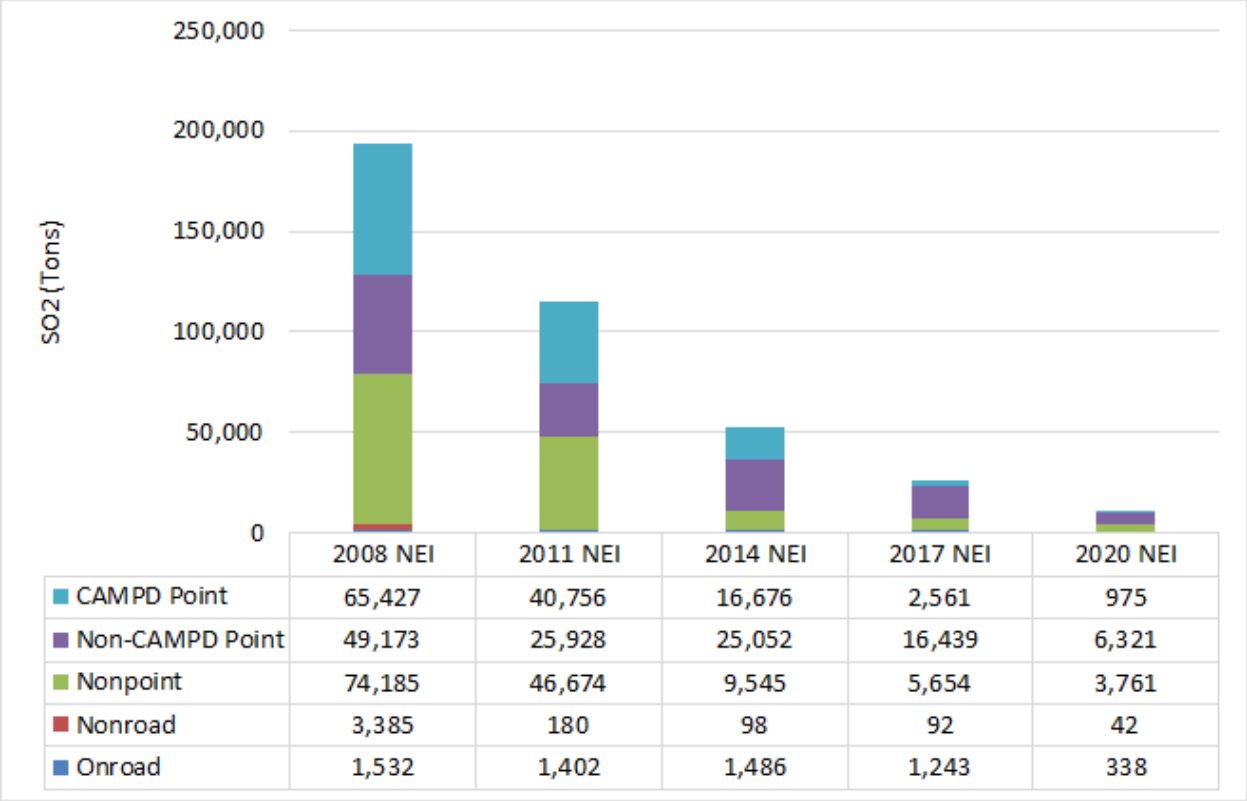
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	47,556	31,062	22,214	11,253	7,763
Non-CAMPD Point	31,881	31,036	27,532	27,590	19,985
Nonpoint	104,493	101,935	84,469	76,593	69,878
Nonroad	71,121	62,622	53,071	36,664	32,156
Onroad	187,043	160,608	143,495	88,311	56,401



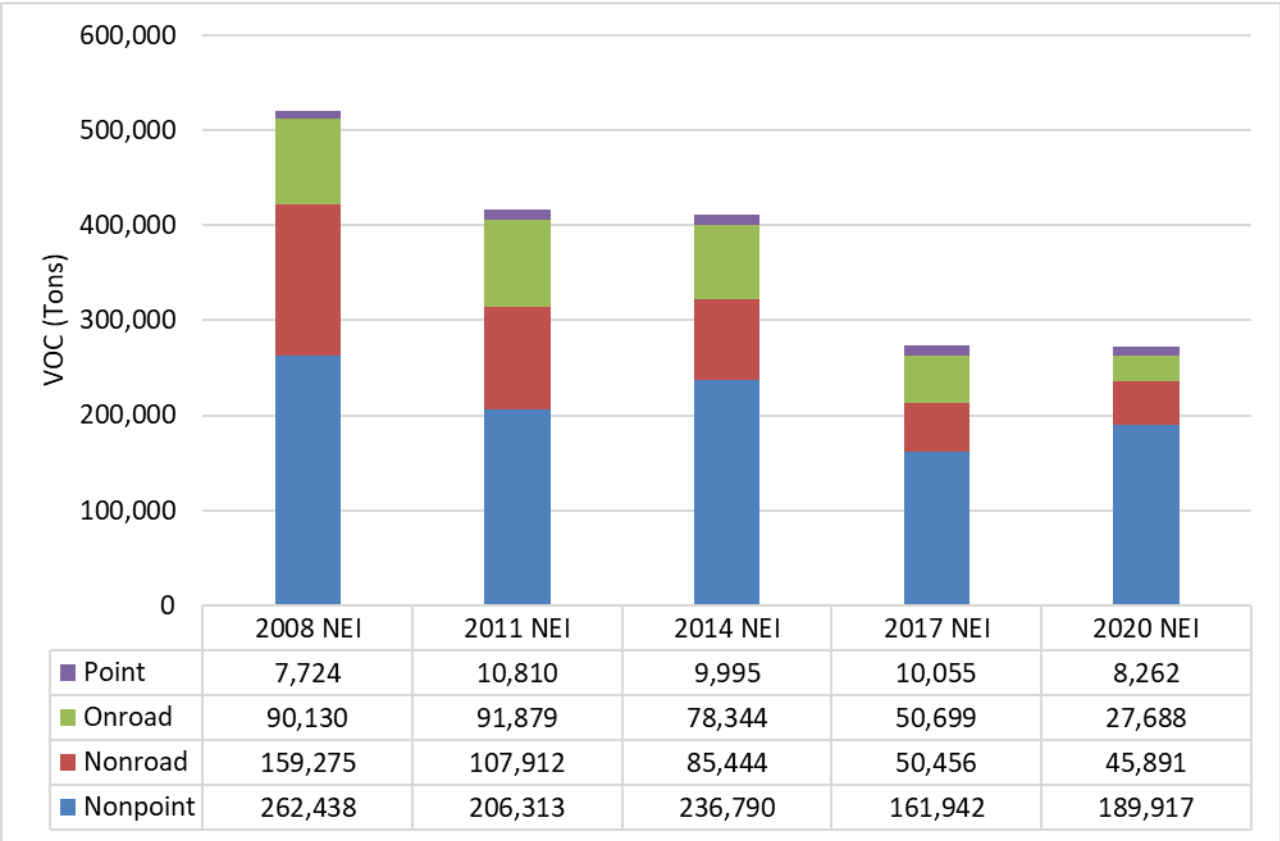
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	10,761	8,334	6,088	4,517	3,933
Onroad	12,402	16,697	15,006	9,699	7,237
Nonroad	7,469	6,468	5,578	3,778	3,260
Nonpoint	294,408	259,068	205,769	177,146	283,162



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	6,776	5,760	4,026	3,359	3,106
Onroad	8,692	7,530	6,807	3,848	2,376
Nonroad	7,101	6,135	5,282	3,574	3,073
Nonpoint	70,458	74,186	65,584	51,605	92,622

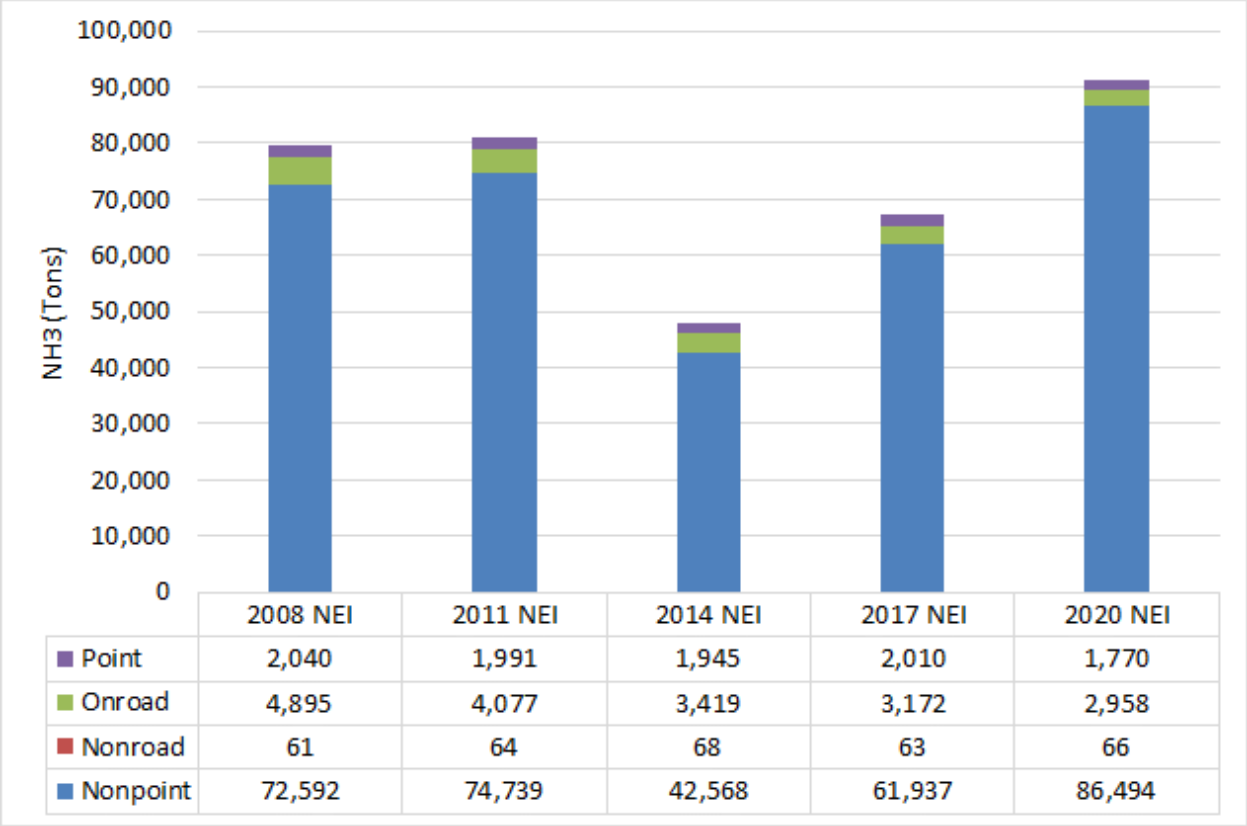


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	65,427	40,756	16,676	2,561	975
Non-CAMPD Point	49,173	25,928	25,052	16,439	6,321
Nonpoint	74,185	46,674	9,545	5,654	3,761
Nonroad	3,385	180	98	92	42
Onroad	1,532	1,402	1,486	1,243	338

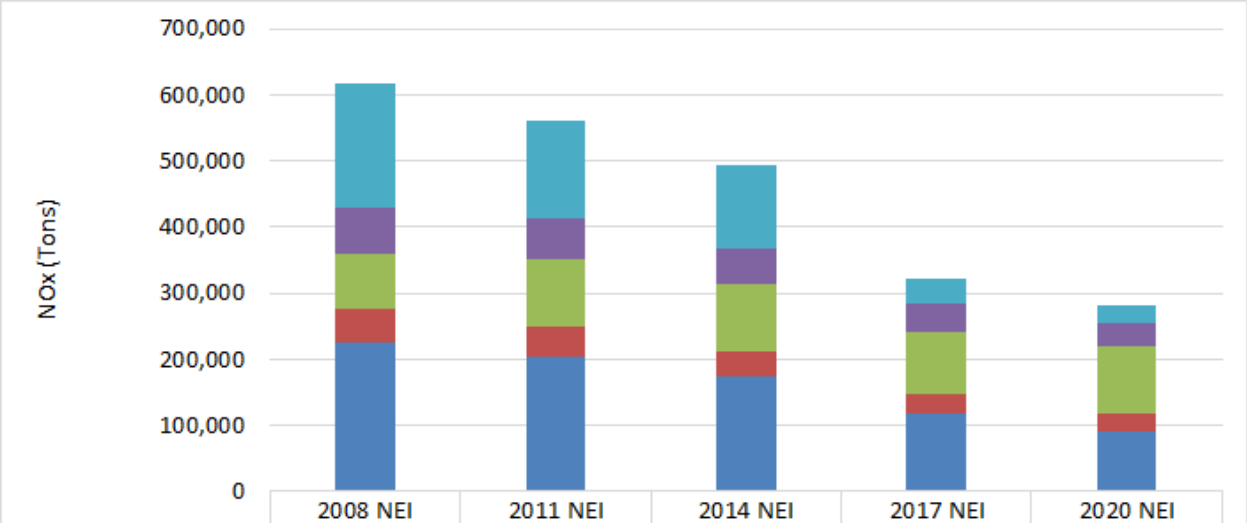


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	7,724	10,810	9,995	10,055	8,262
Onroad	90,130	91,879	78,344	50,699	27,688
Nonroad	159,275	107,912	85,444	50,456	45,891
Nonpoint	262,438	206,313	236,790	161,942	189,917

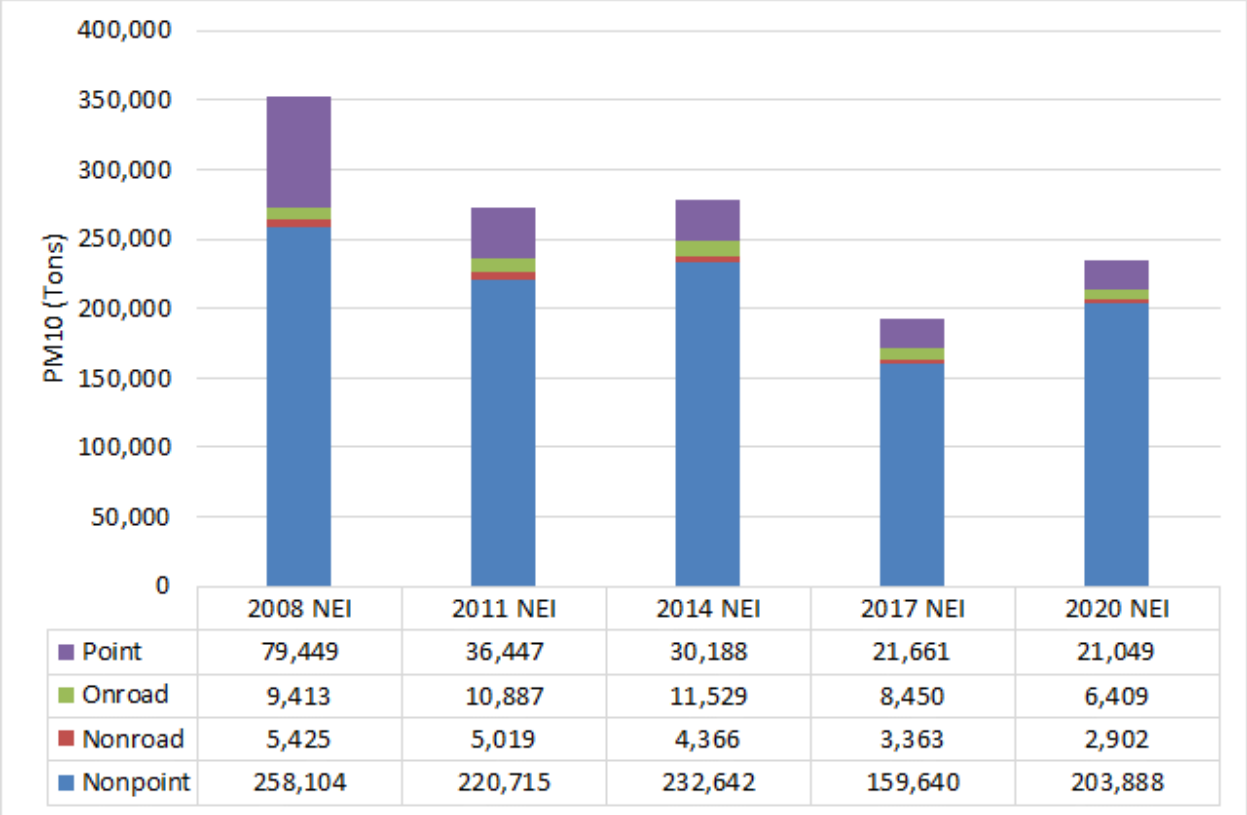
Pennsylvania



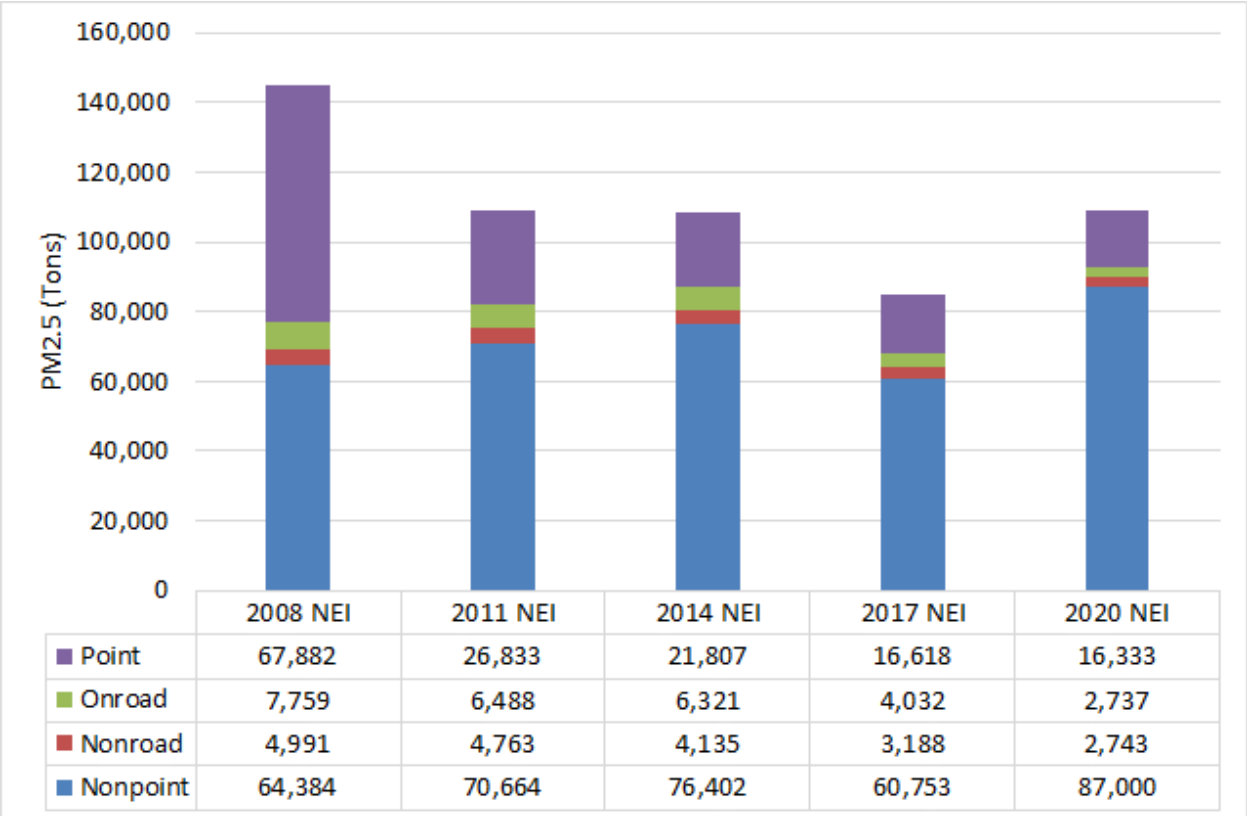
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	2,040	1,991	1,945	2,010	1,770
Onroad	4,895	4,077	3,419	3,172	2,958
Nonroad	61	64	68	63	66
Nonpoint	72,592	74,739	42,568	61,937	86,494



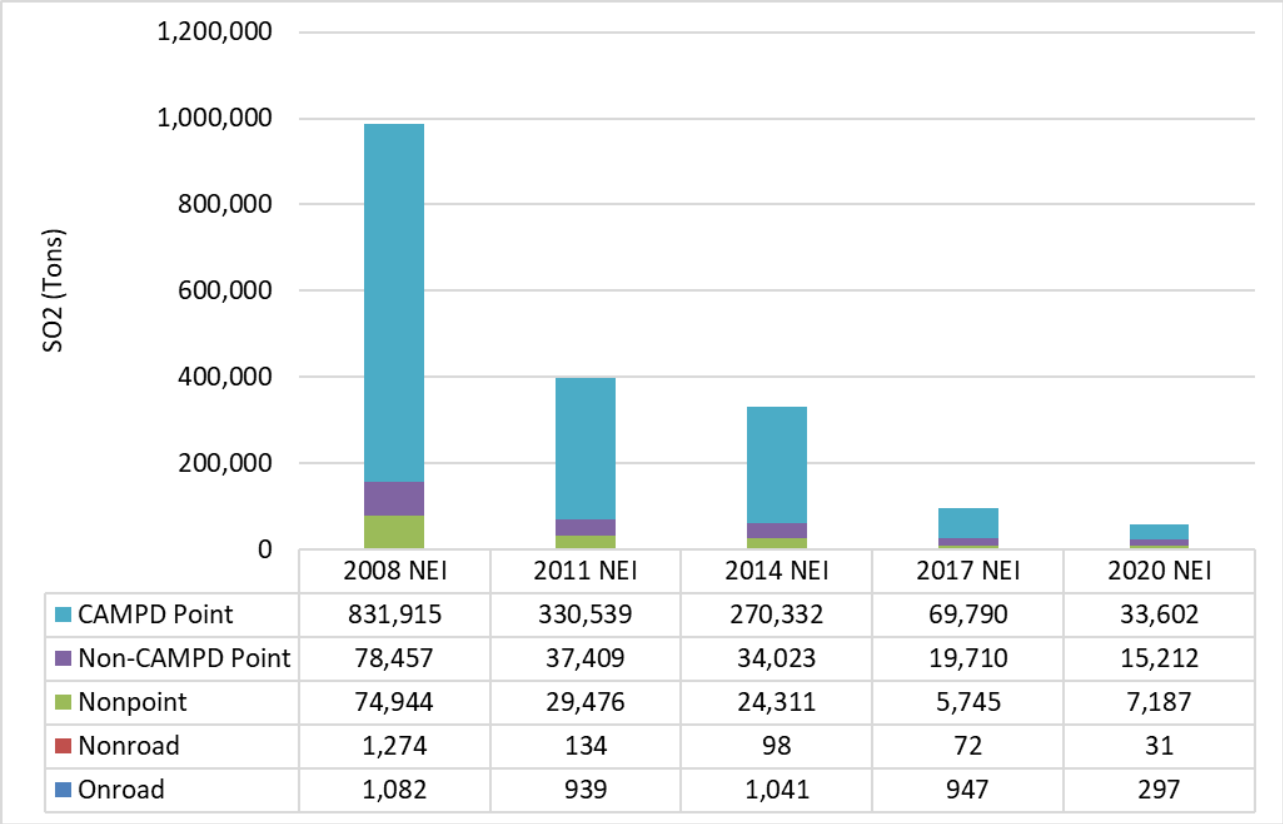
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	187,771	149,620	125,612	37,148	26,019
Non-CAMPD Point	68,641	60,583	52,422	44,962	34,732
Nonpoint	83,093	101,458	102,496	92,624	103,223
Nonroad	53,146	46,194	37,994	29,654	25,369
Onroad	223,671	204,073	174,231	117,513	91,492



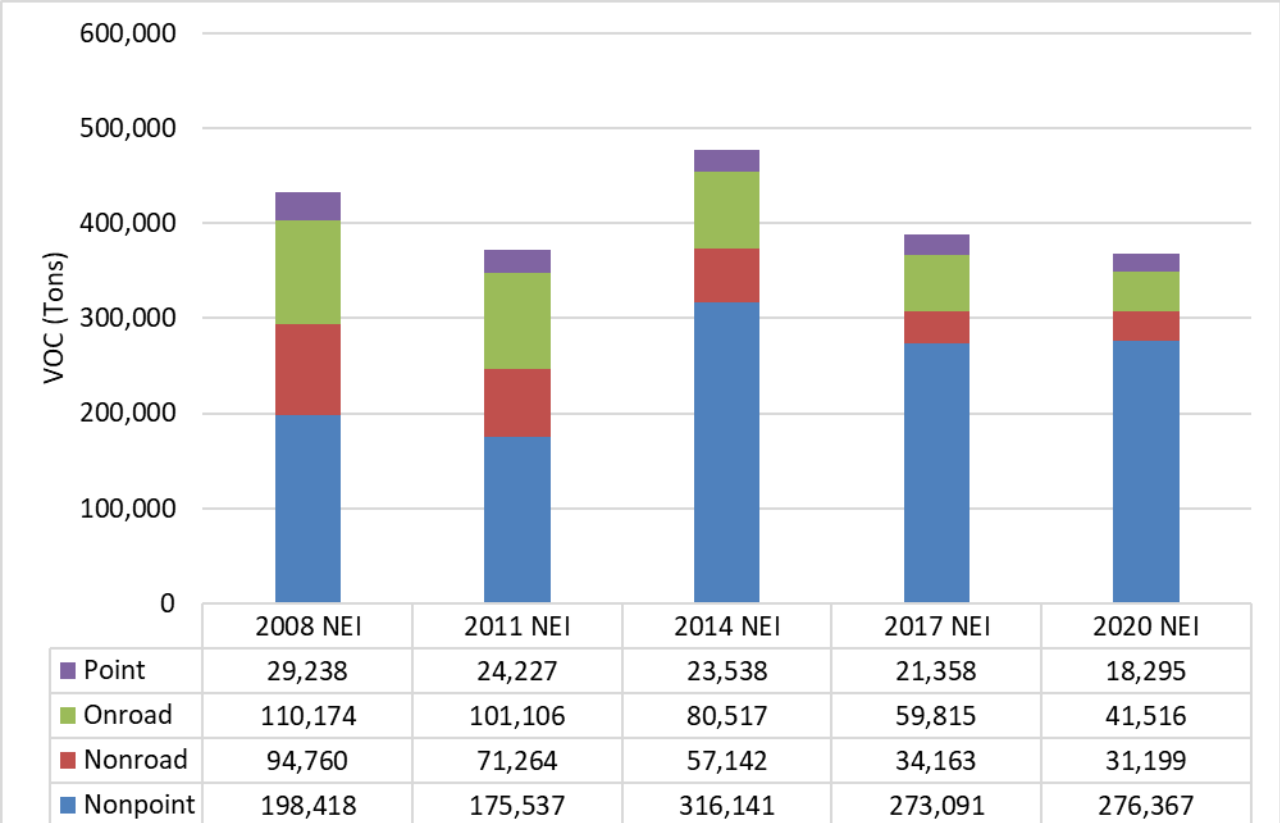
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	79,449	36,447	30,188	21,661	21,049
Onroad	9,413	10,887	11,529	8,450	6,409
Nonroad	5,425	5,019	4,366	3,363	2,902
Nonpoint	258,104	220,715	232,642	159,640	203,888



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	67,882	26,833	21,807	16,618	16,333
Onroad	7,759	6,488	6,321	4,032	2,737
Nonroad	4,991	4,763	4,135	3,188	2,743
Nonpoint	64,384	70,664	76,402	60,753	87,000

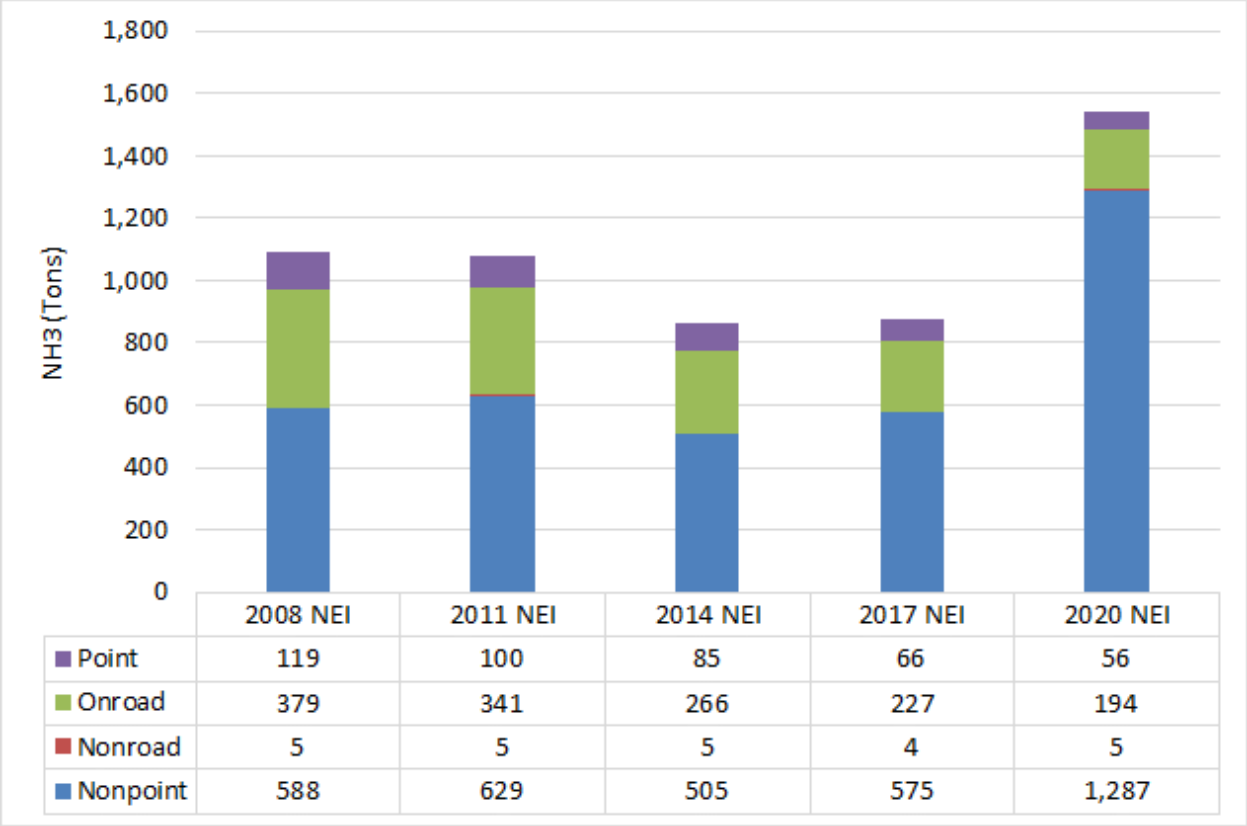


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	831,915	330,539	270,332	69,790	33,602
Non-CAMPD Point	78,457	37,409	34,023	19,710	15,212
Nonpoint	74,944	29,476	24,311	5,745	7,187
Nonroad	1,274	134	98	72	31
Onroad	1,082	939	1,041	947	297

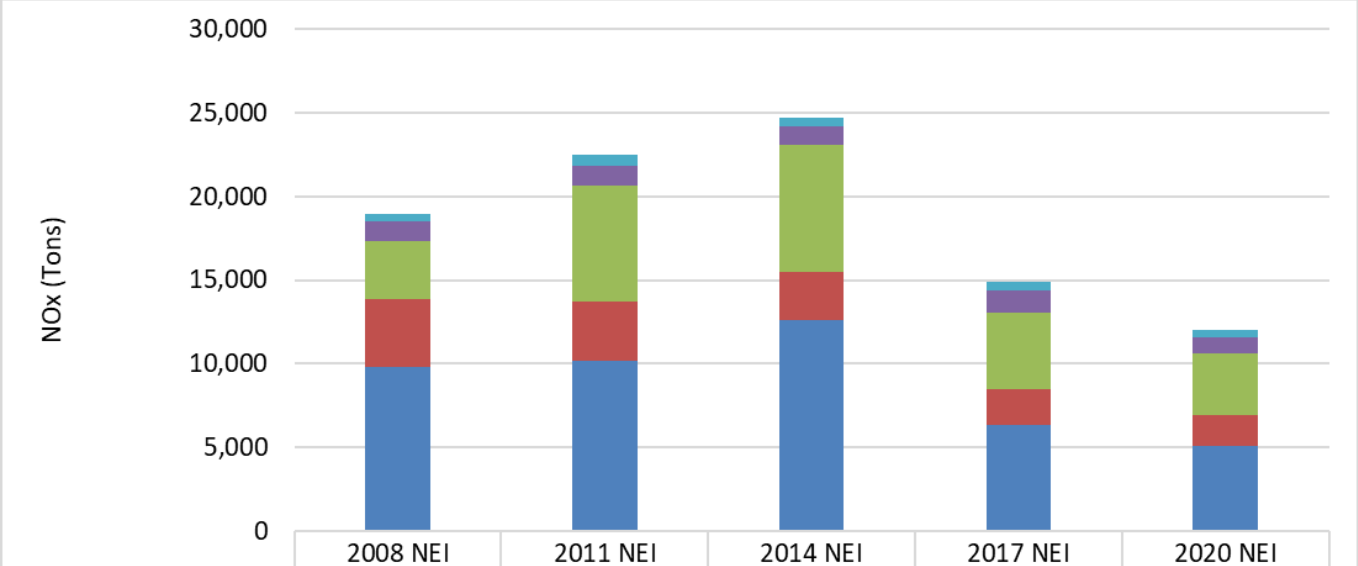


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	29,238	24,227	23,538	21,358	18,295
Onroad	110,174	101,106	80,517	59,815	41,516
Nonroad	94,760	71,264	57,142	34,163	31,199
Nonpoint	198,418	175,537	316,141	273,091	276,367

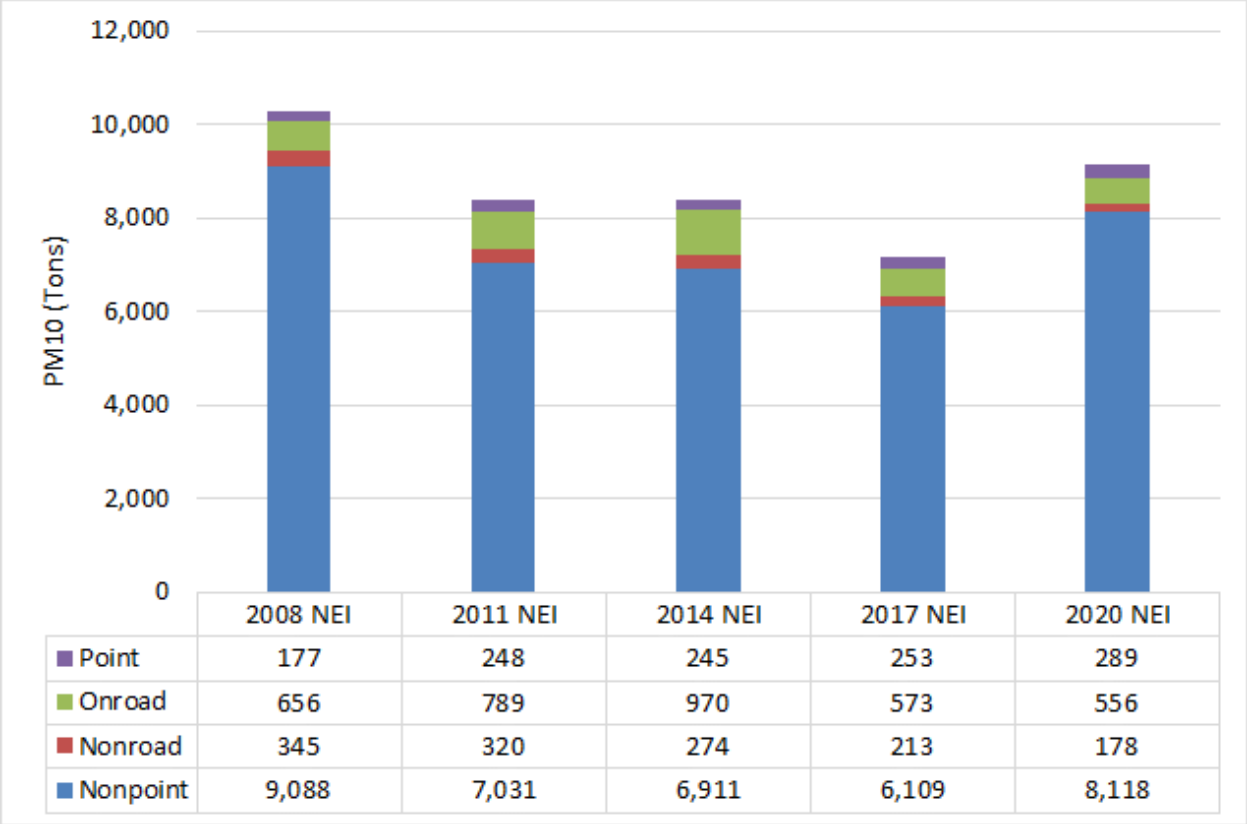
Rhode Island



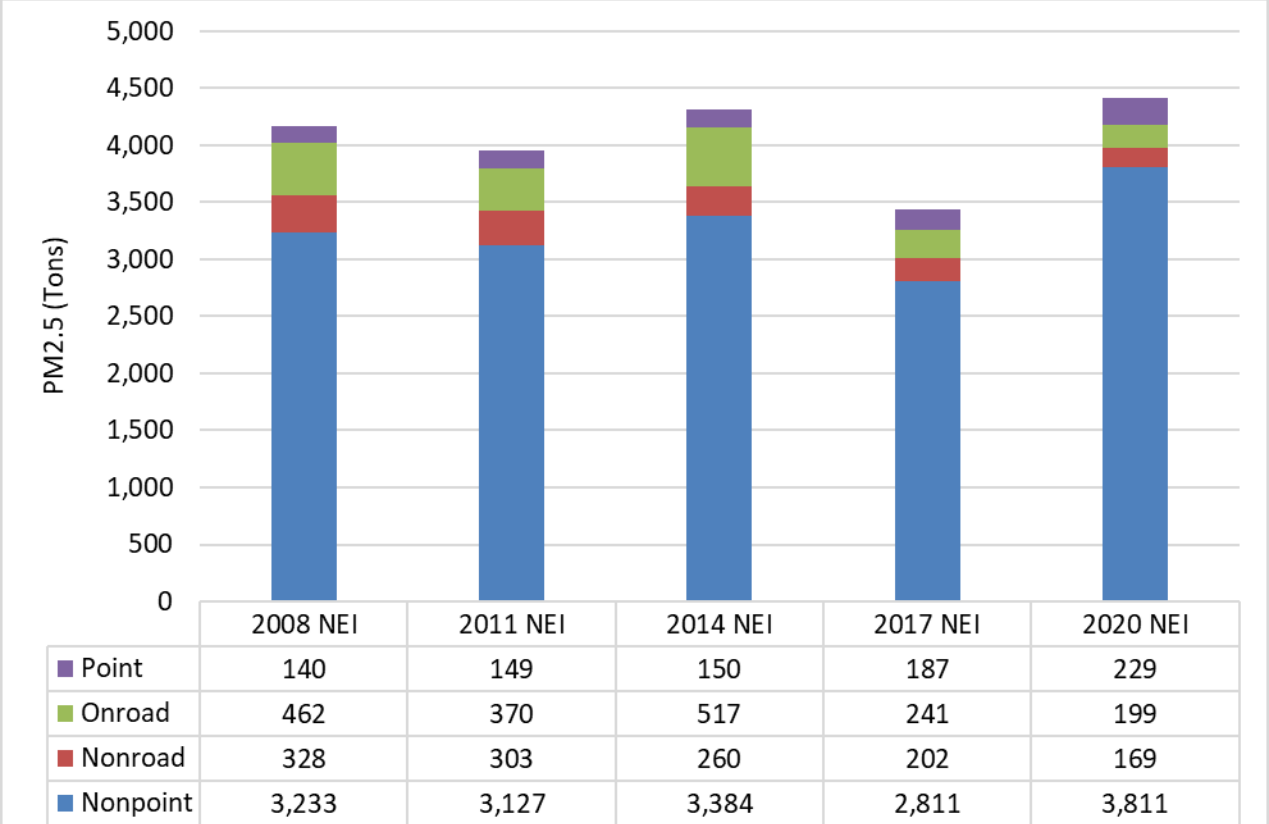
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	119	100	85	66	56
Onroad	379	341	266	227	194
Nonroad	5	5	5	4	5
Nonpoint	588	629	505	575	1,287



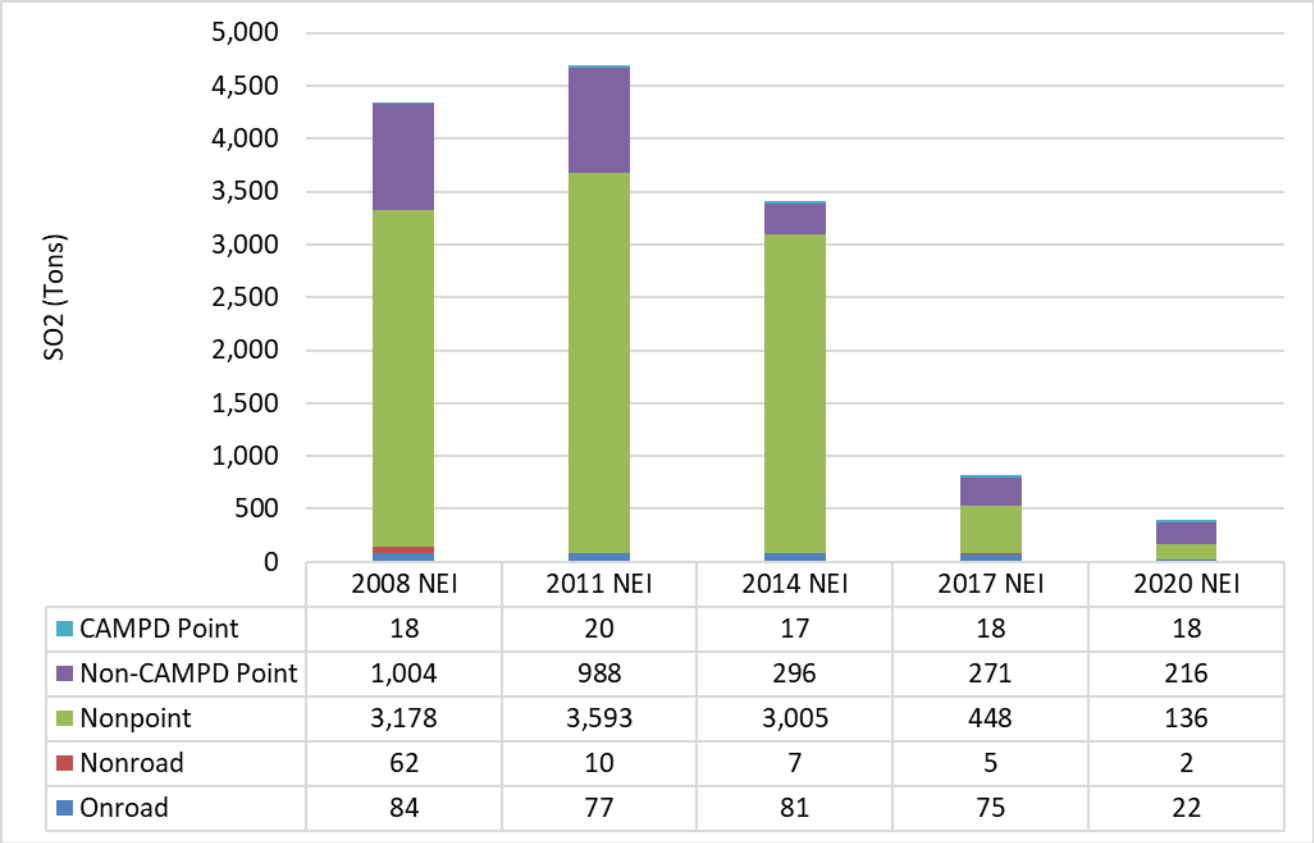
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	462	630	518	470	484
Non-CAMPD Point	1,169	1,200	1,148	1,348	951
Nonpoint	3,456	6,950	7,568	4,539	3,708
Nonroad	4,037	3,506	2,901	2,180	1,821
Onroad	9,839	10,202	12,581	6,328	5,088



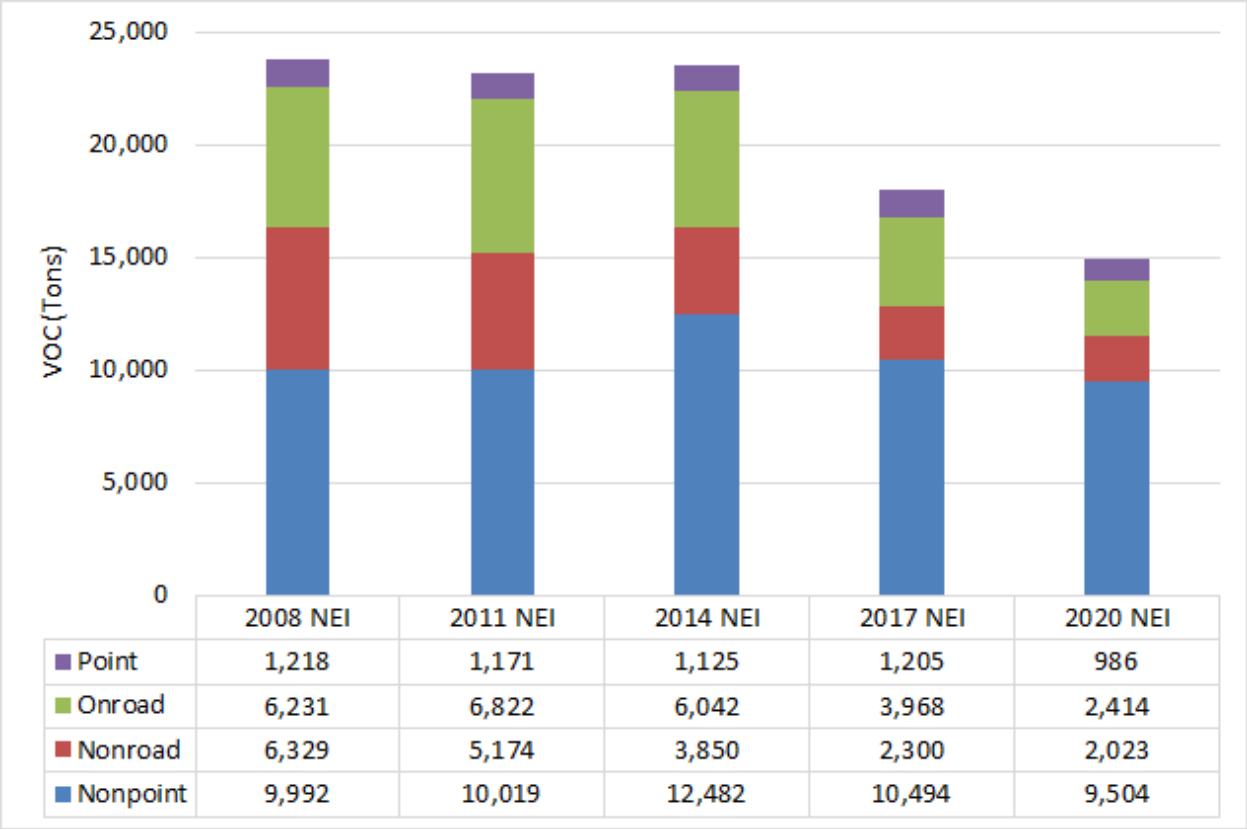
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	177	248	245	253	289
Onroad	656	789	970	573	556
Nonroad	345	320	274	213	178
Nonpoint	9,088	7,031	6,911	6,109	8,118



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	140	149	150	187	229
Onroad	462	370	517	241	199
Nonroad	328	303	260	202	169
Nonpoint	3,233	3,127	3,384	2,811	3,811

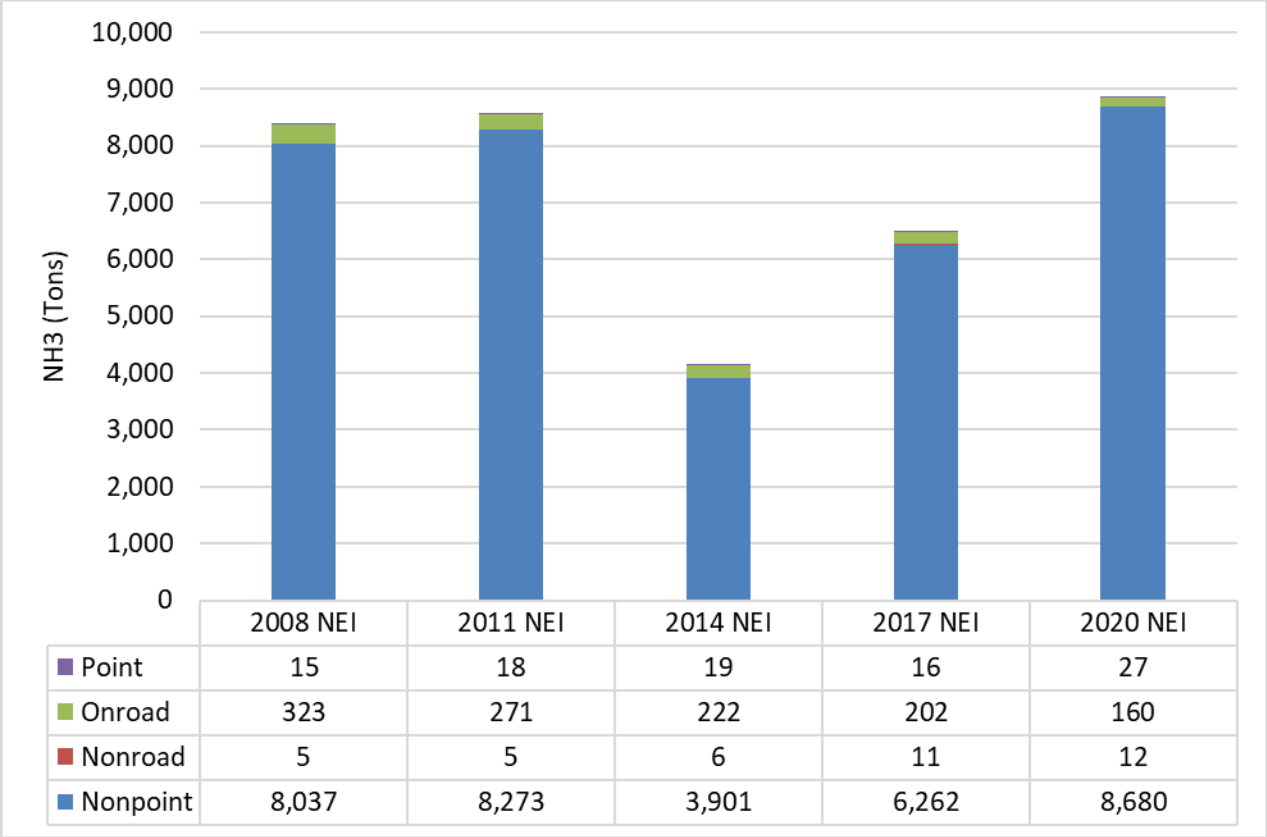


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	18	20	17	18	18
Non-CAMPD Point	1,004	988	296	271	216
Nonpoint	3,178	3,593	3,005	448	136
Nonroad	62	10	7	5	2
Onroad	84	77	81	75	22

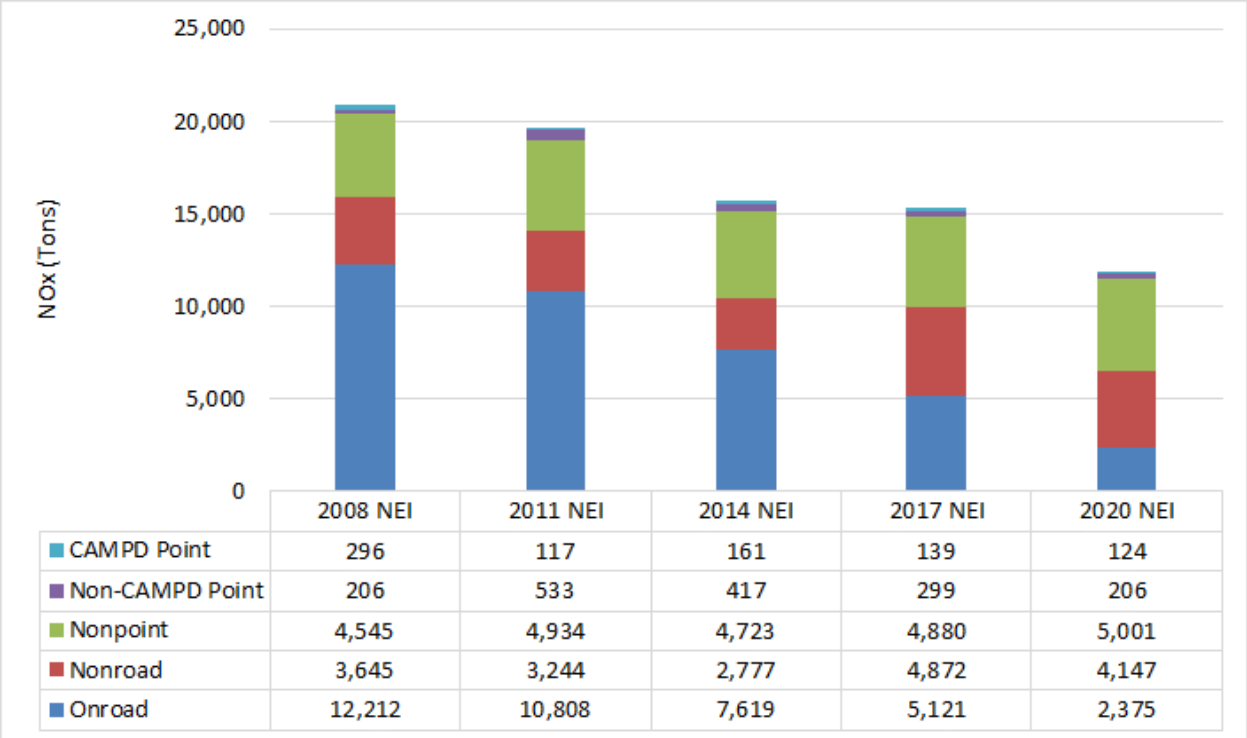


	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	1,218	1,171	1,125	1,205	986
Onroad	6,231	6,822	6,042	3,968	2,414
Nonroad	6,329	5,174	3,850	2,300	2,023
Nonpoint	9,992	10,019	12,482	10,494	9,504

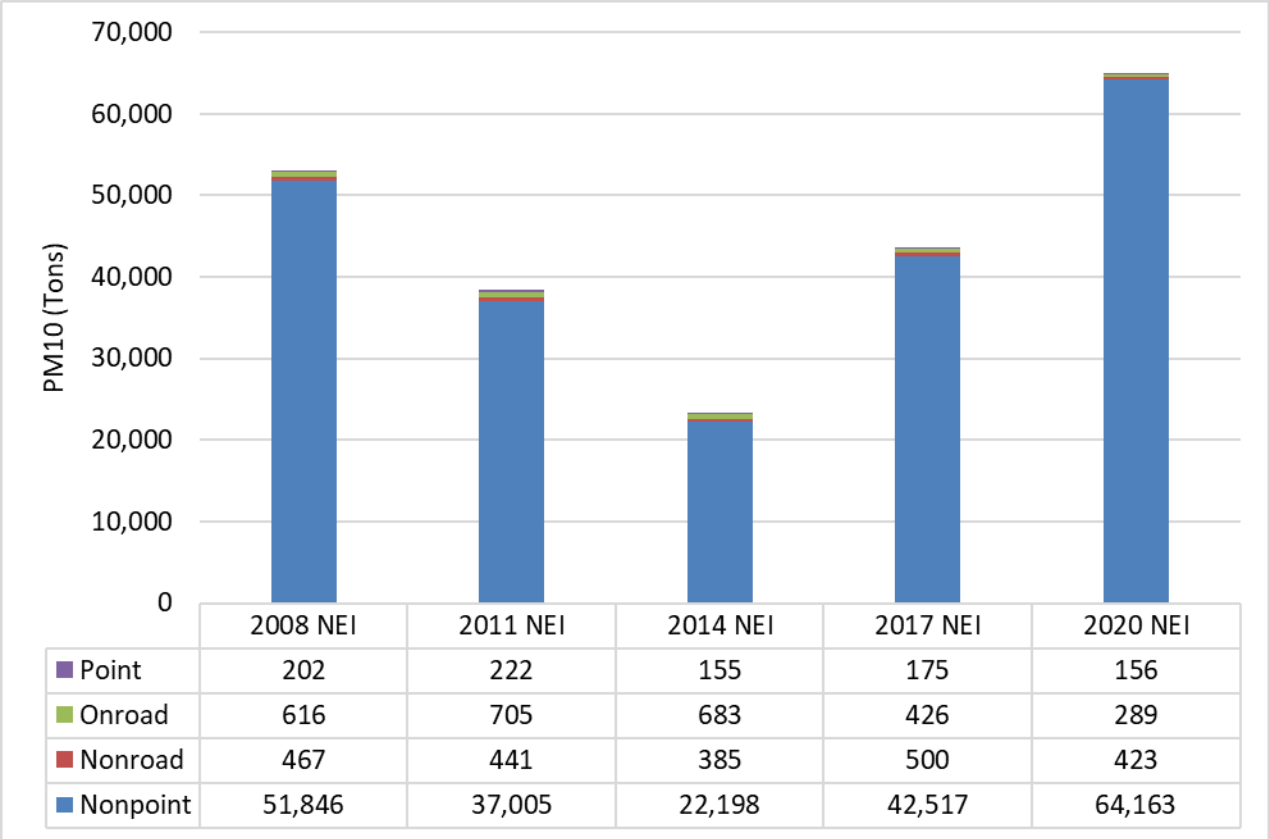
Vermont



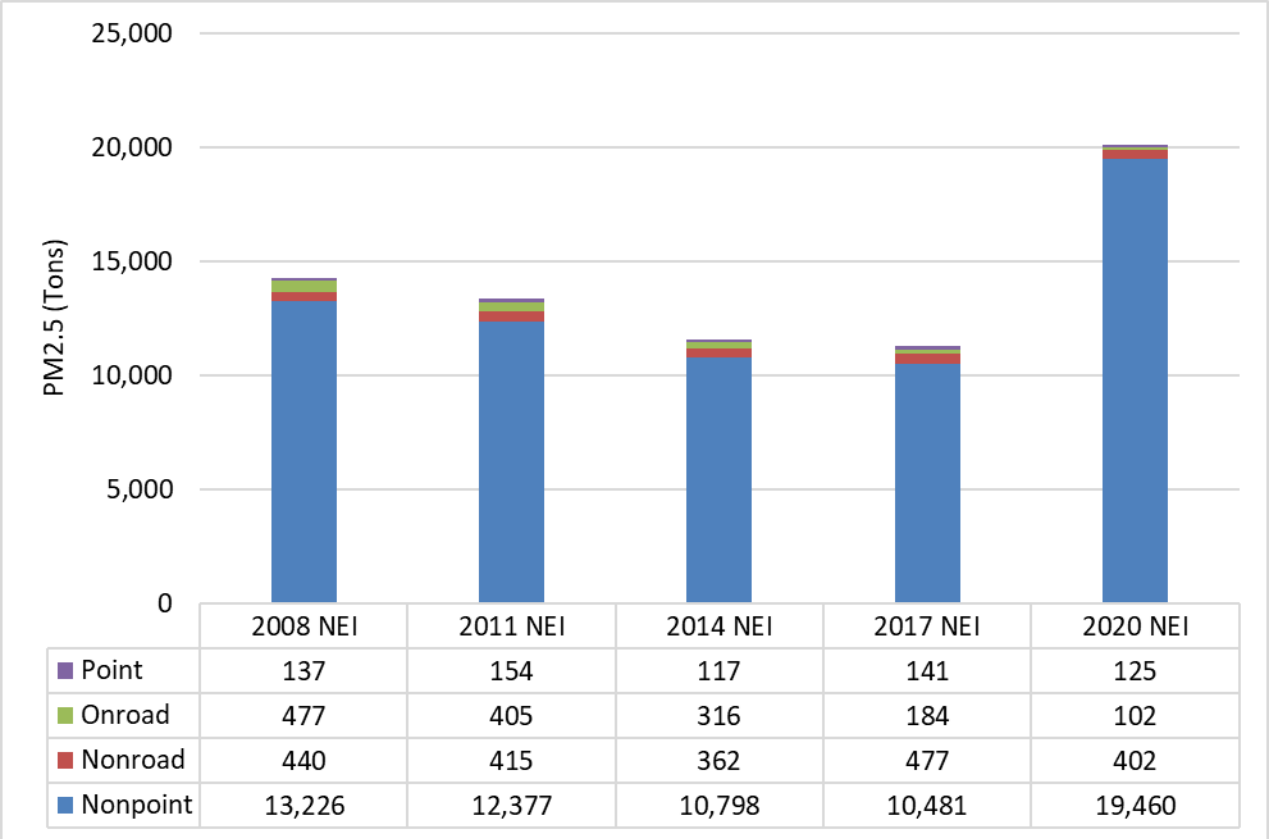
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	15	18	19	16	27
Onroad	323	271	222	202	160
Nonroad	5	5	6	11	12
Nonpoint	8,037	8,273	3,901	6,262	8,680



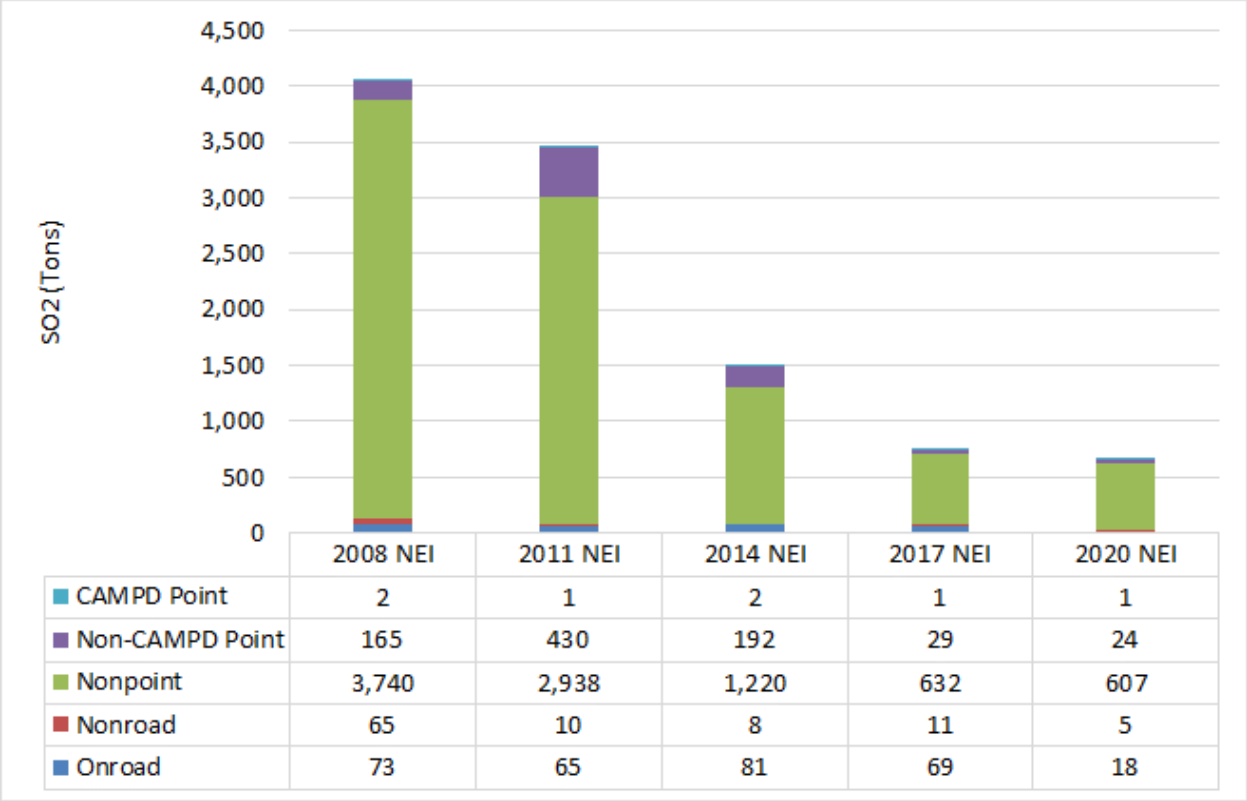
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	296	117	161	139	124
Non-CAMPD Point	206	533	417	299	206
Nonpoint	4,545	4,934	4,723	4,880	5,001
Nonroad	3,645	3,244	2,777	4,872	4,147
Onroad	12,212	10,808	7,619	5,121	2,375



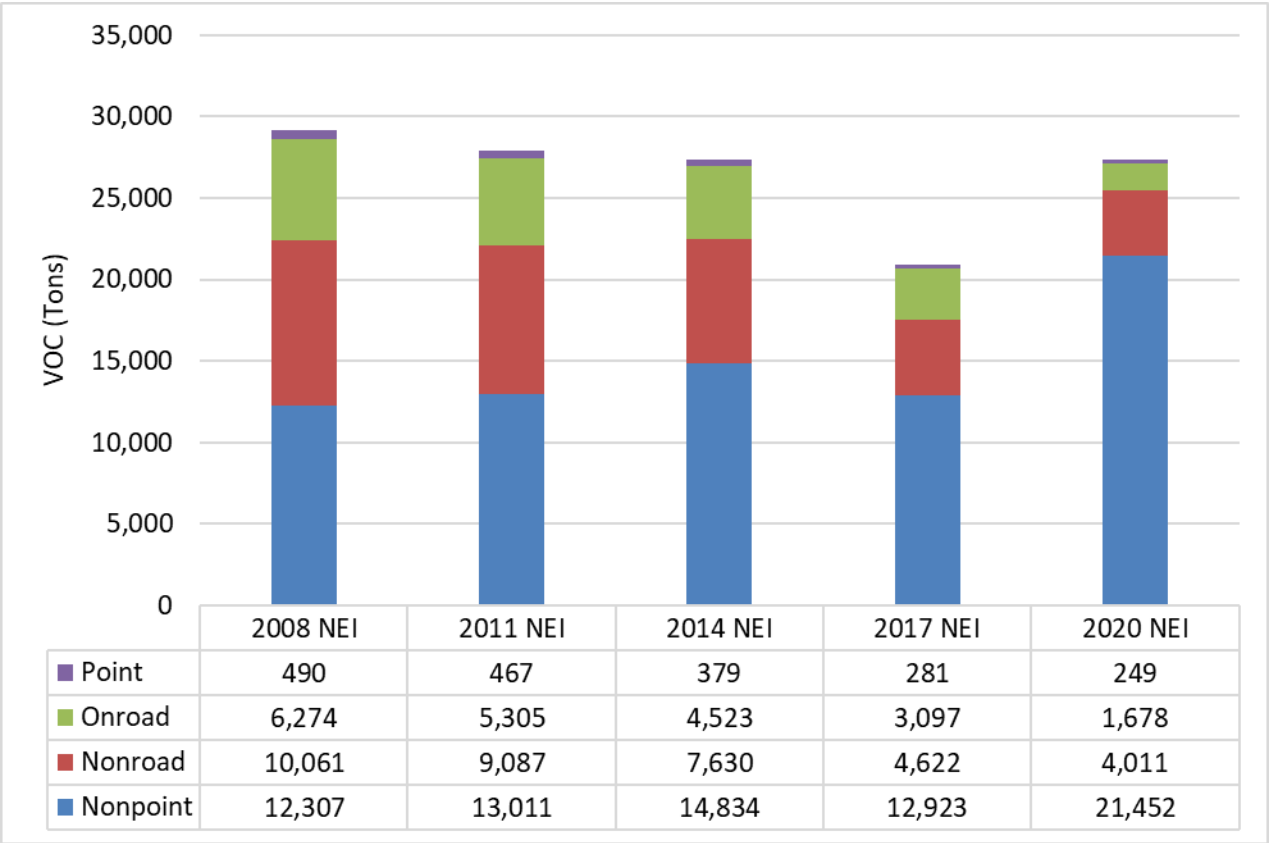
	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	202	222	155	175	156
Onroad	616	705	683	426	289
Nonroad	467	441	385	500	423
Nonpoint	51,846	37,005	22,198	42,517	64,163



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	137	154	117	141	125
Onroad	477	405	316	184	102
Nonroad	440	415	362	477	402
Nonpoint	13,226	12,377	10,798	10,481	19,460



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
CAMPD Point	2	1	2	1	1
Non-CAMPD Point	165	430	192	29	24
Nonpoint	3,740	2,938	1,220	632	607
Nonroad	65	10	8	11	5
Onroad	73	65	81	69	18



	2008 NEI	2011 NEI	2014 NEI	2017 NEI	2020 NEI
Point	490	467	379	281	249
Onroad	6,274	5,305	4,523	3,097	1,678
Nonroad	10,061	9,087	7,630	4,622	4,011
Nonpoint	12,307	13,011	14,834	12,923	21,452

APPENDIX B: 2017 AND 2020 EMISSIONS COMPARISONS FOR MANEVU STATES AND TOTAL MANEVU

Table B-1: 2017 and 2020 Total Ammonia Emissions by State and Total MANEVU (Tons)

State	2017	2020	Reduction (2017 – 2020)	Percent Reduction (2017 – 2020)
CT	5,296	5,930	634	12%
DE	7,353	11,119	3,766	51%
DC	263	236	-27	-10%
ME	5,765	10,795	5,030	87%
MD	6,108	24,822	18,715	306%
MA	14,492	8,477	-6,016	-42%
NH	2,122	4,959	2,837	134%
NJ	6,642	8,875	2,233	34%
NY	43,180	58,297	15,117	35%
PA	67,183	91,288	24,105	36%
RI	873	1,542	669	77%
VT	6,490	8,879	2,388	37%
Total	**165,768**	**235,218**	**69,451**	**42%**

Note: Changes in methodologies between the two inventory years mask definitive conclusions about ammonia emissions trends.

Table B-2: 2017 and 2020 Total NOx Emissions by State and Total MANEVU (Tons)

State	2017	2020	Reduction (2017 – 2020)	Percent Reduction (2017 – 2020)
CT	46,575	36,778	-9,797	-21%
DE	22,882	16,532	-6,351	-28%
DC	4,780	3,553	-1,227	-26%
ME	49,890	38,936	-10,955	-22%
MD	96,310	70,228	-26,083	-27%
MA	105,860	66,773	-39,087	-37%
NH	28,533	19,515	-9,018	-32%
NJ	136,961	88,163	-48,798	-36%
NY	240,411	186,182	-54,229	-23%
PA	321,900	280,834	-41,066	-13%
RI	14,865	12,052	-2,812	-19%
VT	15,311	11,854	-3,458	-23%
Total	**1,084,279**	**831,399**	**-252,880**	**-23%**

Table B-3: 2017 and 2020 Total PM10 Emissions by State and Total MANEVU (Tons)

State	2017	2020	Reduction (2017 – 2020)	Percent Reduction (2017 – 2020)
CT	29,058	31,279	2,221	8%
DE	17,213	17,567	354	2%
DC	3,771	4,525	754	20%
ME	60,347	65,977	5,630	9%
MD	91,366	75,977	-15,390	-17%
MA	65,922	73,575	7,654	12%
NH	21,142	29,167	8,024	38%
NJ	44,487	106,187	61,700	139%
NY	195,140	297,593	102,453	53%
PA	193,114	234,247	41,133	21%
RI	7,148	9,141	1,993	28%
VT	43,618	65,031	21,413	49%
Total	**772,327**	**1,010,267**	**237,940**	**31%**

Note: Changes in methodologies between the two inventory years mask definitive conclusions about PM10 emissions trends.

Table B-4: 2017 and 2020 Total PM2.5 Emissions by State and Total MANEVU (Tons)

State	2017	2020	Reduction (2017 – 2020)	Percent Reduction (2017 – 2020)
CT	11,723	14,221	2,499	21%
DE	4,761	4,773	12	0%
DC	1,047	1,387	340	32%
ME	25,681	35,097	9,416	37%
MD	29,063	26,300	-2,763	-10%
MA	25,209	26,419	1,210	5%
NH	10,921	18,371	7,449	68%
NJ	22,427	29,316	6,889	31%
NY	62,387	101,178	38,791	62%
PA	84,590	108,812	24,222	29%
RI	3,441	4,408	967	28%
VT	11,283	20,089	8,806	78%
Total	**292,531**	**390,371**	**97,839**	**33%**

Note: Changes in methodologies between the two inventory years mask definitive conclusions about PM2.5 emissions trends.

Table B-5: 2017 and 2020 Total SO_2 Emissions by State and Total MANEVU (Tons)

State	2017	2020	Reduction (2017 – 2020)	Percent Reduction (2017 – 2020)
CT	2,692	923	-1,769	-66%
DE	1,448	973	-475	-33%
DC	90	39	-51	-56%
ME	5,762	4,175	-1,587	-28%
MD	20,130	12,290	-7,840	-39%
MA	6,256	2,095	-4,161	-67%
NH	5,972	1,398	-4,574	-77%
NJ	4,483	2,965	-1,519	-34%
NY	25,988	11,436	-14,553	-56%
PA	96,263	56,330	-39,934	-41%
RI	816	396	-421	-52%
VT	743	655	-88	-12%
Total	**170,645**	**93,674**	**-76,970**	**-45%**

Table B-6: 2017 and 2020 Total VOC Emissions by State and Total MANEVU (Tons)

State	2017	2020	Reduction (2017 – 2020)	Percent Reduction (2017 – 2020)
CT	58,059	52,578	-5,482	-9%
DE	18,682	17,820	-862	-5%
DC	5,165	5,845	680	13%
ME	48,454	52,408	3,954	8%
MD	95,087	90,435	-4,652	-5%
MA	116,269	90,781	-25,488	-22%
NH	33,088	35,572	2,484	8%
NJ	143,384	132,243	-11,141	-8%
NY	273,152	271,757	-1,395	-1%
PA	388,427	367,378	-21,049	-5%
RI	17,965	14,927	-3,038	-17%
VT	20,922	27,389	6,467	31%
Total	**1,218,654**	**1,159,134**	**-59,521**	**-5%**