

## 2020 NEI Errata

The following errors were discovered after the release of the 2020 NEI on March 31, 2023. This is a living document, meaning that as we receive notification of issues with the NEI, we will update this document with the most-recently identified issues appearing at the top. Errors identified in this document are not corrected in the data summaries or query tools posted on the [2020 NEI website](#).

### Update September 16, 2024

#### Point Inventory, Airports, Ground Support Equipment and Auxiliary Power Units

We discovered the 2020 FAA AEDT model results did not include HAP emissions from Ground Support Equipment (GSE) and Auxiliary Power Units (APUs) as was provided in the 2017 FAA AEDT model results. Therefore, the 2020EPA\_Airports dataset and the 2020NEI did not include HAP emissions from these airport sources. Also, while assembling the missing HAP emissions for APUs and GSE, we discovered the GSE emissions unit at the Henderson Executive Airport (EIS Facility ID 9398211) in Nevada that were mistakenly assigned a shutdown operating status code in EIS, which prevented CAP emissions from being included in the 2020NEI. More detailed information is included in the file 2020NEI\_Airports\_Errata.xlsx posted on the [2020 NEI supplemental data FTP site](#). The file also details the full set of extraneous CAP emissions Hartsfield-Jackson Atlanta International Airport from the 2020EPA\_Airports dataset that were mentioned in Update June 16, 2023, in this document.

### Update August 16, 2024

#### Nonpoint Inventory, Residential Wood Combustion, California

California has a few errors in their emissions and nonpoint survey submittals for the 2020 NEI. We corrected the missing NH3 error prior to the public release of the 2020 NEI, however the following errors were only recently discovered:

- i. For outdoor wood burning devices (SCC=2104008700), while California correctly checked the nonpoint survey option “Yes - Supplement My Data with EPA Estimates”, they also submitted zero emissions for these sources. Therefore, EPA estimates were not selected for the 2020 NEI; that is, the zero-submittals submitted by California were. As part of the analysis for a future emissions modeling project, California alerted EPA that they intended for EPA (4,857 tons of PM2.5) estimates to be in the 2020 NEI.
- ii. California checked the nonpoint survey option “Yes - Supplement My Data with EPA Estimates” for the three fireplace woodstove inserts SCCs (2104008210, non-EPA certified; 2104008220, EPA certified non-catalytic; 2104008230, EPA-certified catalytic). However, California submitted emissions for “general” woodstoves (SCC=2104008300) that was intended to cover both freestanding woodstoves (SCC series 21040083x0) and woodstove inserts (SCC series 21040082x0). California has correctly chosen “No - Do Not Supplement My Data” for freestanding woodstoves so this error resulted in a double count with EPA estimates for woodstove inserts, totaling 2,289 tons of PM2.5.

Combined, these errors offset somewhat, resulting in the 2020 NEI undercounting RWC in CA by approximately 2,568 tons of PM2.5 (undercount of 4,857 tons from outdoor devices, and overcount of 2,289 tons from woodstove inserts).

### Update June 17, 2024

#### Nonpoint Inventory, C3 Commercial Marine Vessels, federal waters

The 2020 NEI C3 CMV inventory was missing estimates for federal waters (FIPs codes 8500x). These are now included in EIS, loaded directly into the “2020NEI” database. Therefore, any national level summaries for the 2020 NEI will be greater than the posted data queries/summaries by the following amounts for key pollutants:

- 3,402 tons CO
- 21,909 tons NOX
- 571 tons PM10

- 553 tons PM2.5
- 49 tons SO2
- 833 tons VOC
- 11 tons NH3
- 139 LB Lead

#### Update May 31, 2024

##### Point Inventory, in Kansas

The process level point file has the following emissions under Facility Name “OWENS CORNING INSULATING SYSTEMS LLC” (EIS Facility ID 17958611) which were erroneously assigned to FIPS 20021 (Cherokee County, Kansas), all of which was associated with TRI Facility ID 64802DNPRDW20TH and assigned SCC 39999999:

- 88.9495 tons Ammonia
- 31,592 LB carbonyl sulfide and
- 4941 LB formaldehyde

This facility has been corrected in EIS, reassociated the TRIFID with the correct EIS Facility ID 17938211 (just across the border in Jasper County Missouri in FIPS 29097) and deleted the erroneous EIS facility ID (17958611).

#### Update March 11, 2024

##### Point Inventory, Airport in Washington State

An error was discovered in the 2020 NEI Airport emissions development. KENMORE AIR HARBOR (EIS Facility ID 12141411) is a seaplane base. An inaccurate EIS emissions process ID (165628314) was added in 2020 with the SCC 2275001000, which is for military aircraft. There are no military operations at this seaplane base and those LTOs should have been attributed to general aviation. Below is a table of “Revised” and “Incorrect” emissions for the 2020 NEI for this facility. Kenmore Harbor is located at the northern end of Lake Washington in Kenmore (King County, FIPS=53033), WA.

Pollutant Code	Description	Revised 2020 Estimate (tons)	Incorrect 2020 NEI Estimate (tons)	Error (Incorrect minus Revised, tons)
100414	Ethyl Benzene	2.52E-02	2.07E-01	0.1818
100425	Styrene	1.09E-02	3.68E-01	0.3571
106990	1,3-Butadiene	4.65E-02	2.01E+00	1.9635
107028	Acrolein	4.72E-02	2.91E+00	2.8628
108383	m-Xylene	5.34E-03	3.36E-01	0.3307
108883	Toluene	1.67E-01	7.65E-01	0.5980
108952	Phenol	1.37E-02	8.64E-01	0.8503
110543	Hexane	1.04E-02	4.11E-05	-0.0104
120127	Anthracene	1.58E-03	6.27E-06	-0.0016
123386	Propionaldehyde	1.47E-02	8.65E-01	0.8503
1330207	Xylenes (Mixed Isomers)	8.74E-02	3.44E-04	-0.0871
191242	Benzo[g,h,i]Perylene	4.84E-04	1.91E-06	-0.0005
193395	Indeno[1,2,3-c,d]Pyrene	1.49E-04	5.87E-07	-0.0001
205992	Benzo[b]Fluoranthene	2.23E-04	8.81E-07	-0.0002
206440	Fluoranthene	1.70E-03	6.75E-06	-0.0017
207089	Benzo[k]Fluoranthene	2.23E-04	8.81E-07	-0.0002
208968	Acenaphthylene	7.67E-03	3.02E-05	-0.0076
218019	Chrysene	1.86E-04	7.38E-07	-0.0002

Pollutant Code	Description	Revised 2020 Estimate (tons)	Incorrect 2020 NEI Estimate (tons)	Error (Incorrect minus Revised, tons)
50000	Formaldehyde	2.73E-01	1.46E+01	14.3270
50328	Benzo[a]Pyrene	1.86E-04	7.36E-07	-0.0002
540841	2,2,4-Trimethylpentane	1.25E-03	8.43E-05	-0.0012
56553	Benz[a]Anthracene	1.86E-04	7.39E-07	-0.0002
67561	Methanol	3.42E-02	2.15E+00	2.1158
71432	Benzene	9.22E-02	2.00E+00	1.9078
7439921	Lead	1.21E-01	4.77E-04	-0.1205
75070	Acetaldehyde	9.01E-02	5.08E+00	4.9899
83329	Acenaphthene	1.36E-03	5.36E-06	-0.0014
85018	Phenanthrene	4.73E-03	1.89E-05	-0.0047
86737	Fluorene	2.81E-03	1.11E-05	-0.0028
90120	1-Methylnaphthalene	3.90E-03	2.45E-01	0.2411
91203	Naphthalene	5.58E-01	6.44E-01	0.0860
95476	o-Xylene	3.14E-03	1.98E-01	0.1949
98828	Cumene	5.68E-05	3.57E-03	0.0035
CO	Carbon Monoxide	1.21E+02	2.86E+02	165
CO2	Carbon Dioxide	4.21E+03	2.91E+04	24,890
NOX	Nitrogen Oxides	1.39E+00	2.43E+02	242
PM10-PRI	PM10 Primary (Filt + Cond)	2.51E+00	1.52E+01	13
PM25-PRI	PM2.5 Primary (Filt + Cond)	1.91E+00	1.49E+01	13
SO2	Sulfur Dioxide	2.79E-01	2.30E+01	23
VOC	Volatile Organic Compounds	3.06E+00	1.18E+02	115

## Update November 30, 2023

### Nonpoint Commercial & Institutional Coal Combustion

The State of Indiana informed EPA as part of the review for 2022 emissions modeling platform development, that their 2020 emissions for nonpoint C/I coal combustion should have been zero as any emissions from C/I coal would have been reported to their point inventory. The 2020 NEI, computed from default EPA methods as Indiana did not submit activity data, included 1,156 tons of SO<sub>2</sub>, 215 tons of NO<sub>x</sub>, 61 tons of CO, and 48 tons of PM<sub>25</sub>-PRI for this SCC state-wide.

EPA recommended to Indiana that in future NEI's, they modify their Nonpoint Survey response to "No -Do not supplement my data with EPA Estimates" for this SCC to prevent default (potentially non-zero) EPA estimates from appearing in the NEI. Alternatively, Indiana could submit Point throughput (fuel consumption) data that ensures computed nonpoint fuel consumption equals zero (or less) for this source.

### Nonpoint Road Dust

Maricopa County Arizona discovered erroneous submissions for both paved and unpaved road dust in their 2020 NEI submittal. Referring to the Maricopa County Air Quality Department [2020 Periodic Emissions Inventory for Particulate Matter less than 10 Microns in Diameter](#), the correct emissions for paved road fugitive dust and unpaved road fugitive dust can be found in Table 5.3-4 and Table 5.3-8, respectively. A comparison with the values (tons) in the 2020 NEI is provided here.

	2020 NEI PM10-PRI	Corrected (Maricopa) PM10-PRI	2020 NEI PM25-PRI	Corrected (Maricopa) PM25-PRI

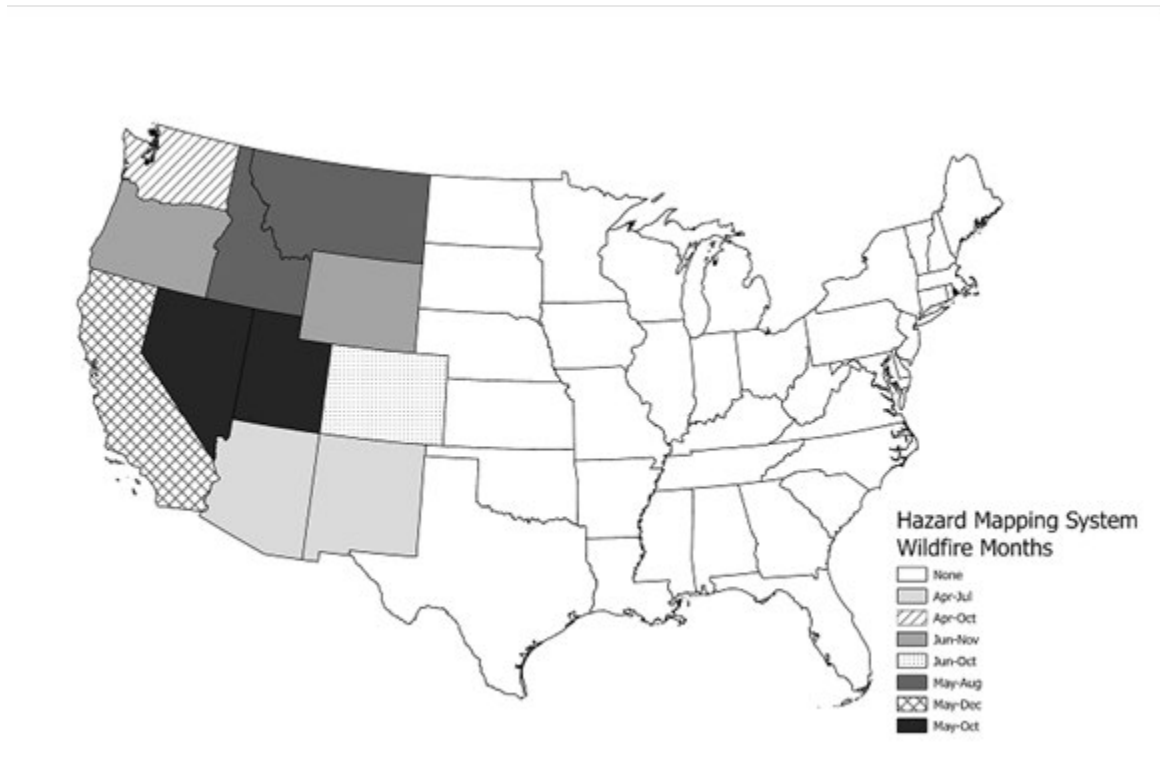
Paved Road Dust	0	8,566.4	0	2,081.3
Unpaved Road Dust	281.9	6,063.55	84.0	595.28

In addition, there are paved/unpaved road dust emissions at industrial sites totaling 281.9 tons (PM10-PRI) and 84 tons (PM25-PRI). We are considering unretiring the SCC for these sources for the 2023 NEI to allow submittals.

### Update July 18, 2023

#### Wild and Prescribed Fires and Field Burning

Figure 7.3 in the [2020 NEI TSD](#) needed to be corrected to accurately depict the months for Idaho and Montana where the default is to identify satellite detects as wildfires. The color depicted figure has been updated with a grayscale friendly figure as well. Here is the corrected Figure 7.3:



### Update June 16, 2023

#### Point Inventory, Atlanta Hartsfield

We discovered in June 2023 that EPA estimates for an auxiliary power unit at Atlanta Hartsfield-Jackson Atlanta International Airport (EIS facility ID = 9748811, EIS process ID = 173816514) was included in the 2020 NEI despite GA DNR having submitted an APU at that airport (EIS process ID = 99985914). The EPA estimate of 93.43141 tons of NOX is therefore an overestimate in the 2020 NEI; GA DNR submitted a value of 98.37931 tons of NOX.

#### Nonpoint Inventory, Paved and Unpaved Road Dust, PM, National

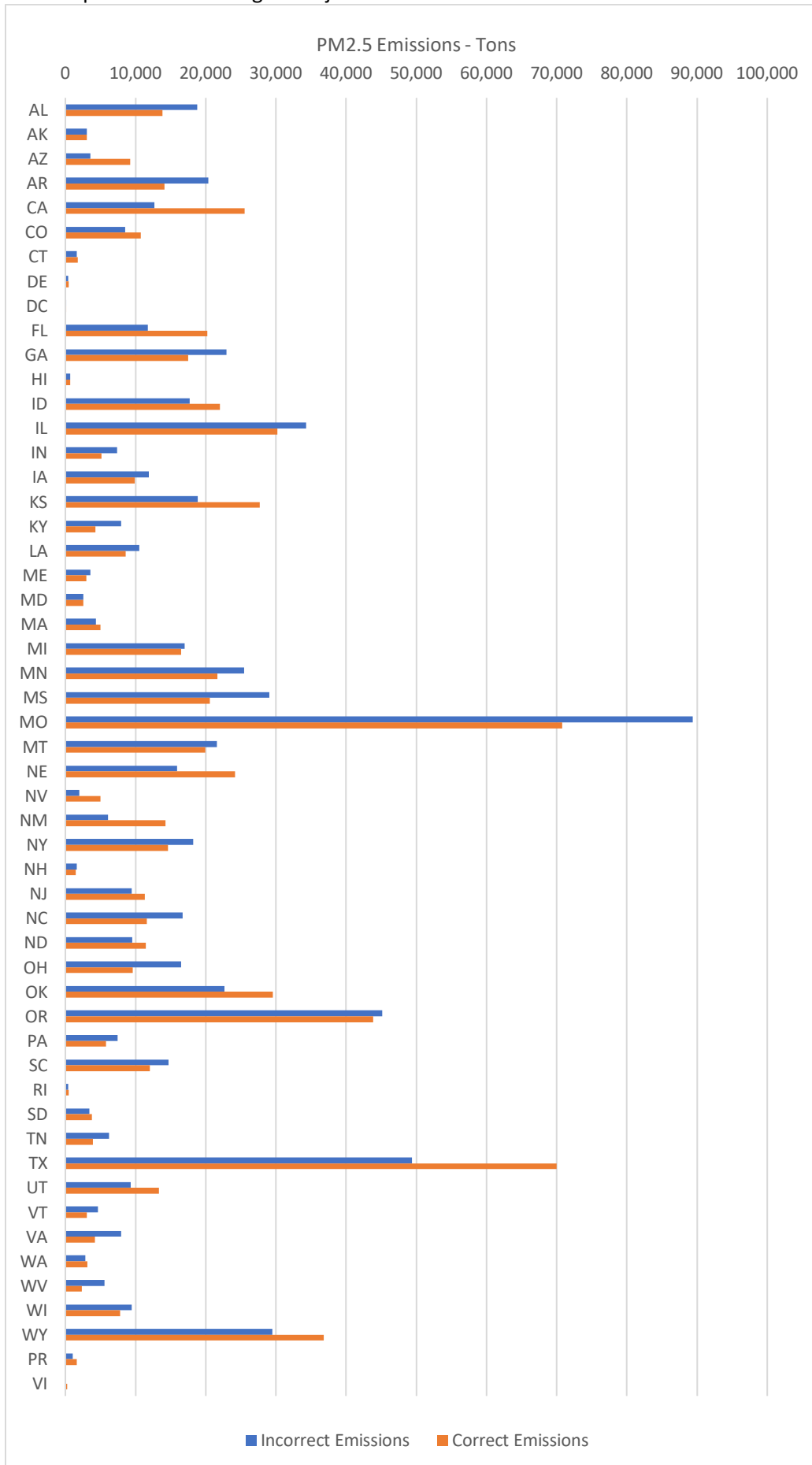
The calculations for emissions of particulate matter from dust from paved and unpaved roads include an adjustment to account for the impact of precipitation on the emission rates. This meteorological adjustment is based on modeling conducted by EPA to generate the SMOKE flat files. The adjustment factor is a number between 0 and 1 that is multiplied by the emissions estimates to account for the factor that areas with higher precipitation will have lower dust emissions from roads.

For the 2020 NEI, there were two errors with how the meteorological adjustment factors were applied to the calculations for emissions from paved and unpaved roads. First, instead of applying the meteorological adjustment

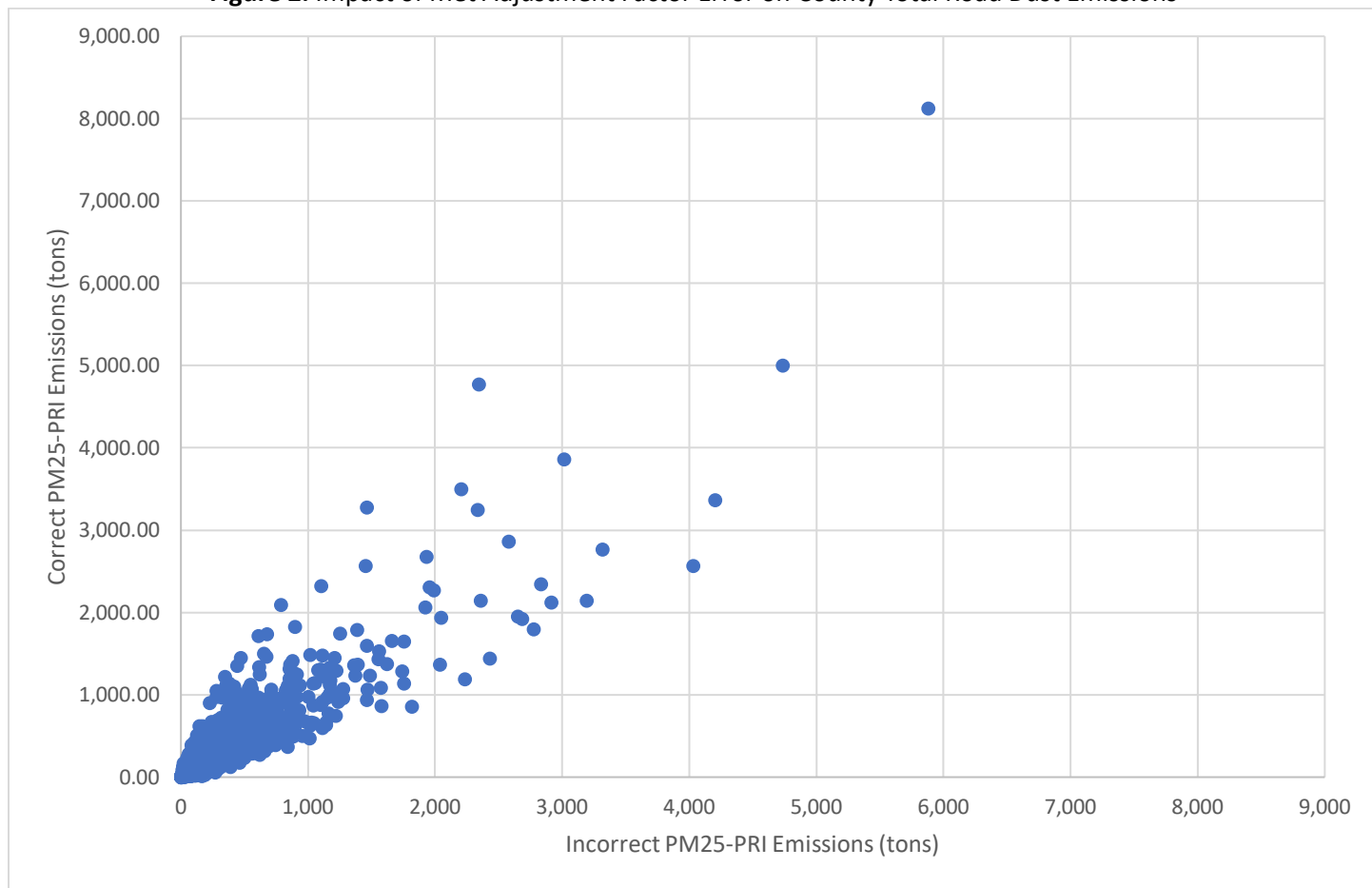
factors, the calculations incorrectly used a total reduction factor that was also generated for the SMOKE flat files. Second, the total reduction was applied before being converted from a percent reduction to an adjustment factor (i.e., the percent reduction should have been subtracted from 1).

This error resulted in PM<sub>25</sub>-PRI emissions from this sector being about 1.22% lower nationally than if the meteorological adjustment had been applied correctly. The impact at the state- and county-levels varies (Figures 1 and 2). The largest impacts occur in areas where the transport reduction and meteorological reductions differ the most, which is areas with lower precipitation.

**Figure 1: Impact of Meteorological Adjustment Factor Error on State Total Road Dust Emissions**



**Figure 2: Impact of Met Adjustment Factor Error on County Total Road Dust Emissions**



Initial set of issues: May 22, 2023

Point Inventory, VOC, Oregon:

On May 3, 2023, David Broderick of ORDEQ edited VOC at EIS Facility 19085411 SunPower Manufacturing Oregon, LLC Emission Unit = “MB” from 2489 Tons to 2489 Lbs in the State dataset only. The value in the “2020 NEI” selection was tagged, such that when 2021 NEI selection is re-run next that value will not be used as a gap fill. The 2021 NEI draft run April 30, 2023, contains the 2489 Tons value.

Point Inventory, Mercury (Hg), New York:

The following Hg emissions in the 2020NEI are outlier values, are likely overestimated, and were removed from the mercury summary information provided in section 2.7 the 2020NEI TSD.

FIPS code	EIS Facility ID	Facility Name	EIS Unit ID	EIS Process ID	Hg emissions (lb)
36109	8542311	CORNELL UNIVERSITY MAIN CAMPUS	230013	20608614	37.52
36109	8542311	CORNELL UNIVERSITY MAIN CAMPUS	230013	20608314	16.80
36109	8542311	CORNELL UNIVERSITY MAIN CAMPUS	230013	20607714	3104.50
36103	8452311	BROOKHAVEN NATIONAL LABORATORY	578913	17949314	265.51
36103	8452311	BROOKHAVEN NATIONAL LABORATORY	64116813	88912714	1823.50

## Point Inventory, PAH/POM, Georgia

Emissions assigned to Pollutant Code 246 (Polycyclic Organic Matter as 7-PAH) at Hartsfield-Jackson Atlanta International Airport (EIS Facility ID 9748811) in the below table should instead be assigned to Pollutant Code 250 (PAH/POM – Unspecified).

EIS Process ID	Emissions Process Description   SCC Code	2020 Emissions (tons)	Source Data Set	EIS Emissions Comment
84961514	Aircraft/GSE/Diesel   2270008005	0.0231397	2020EPA_HAPAug	2020GADNR submitted VOC of 6.899945 TON times ratio of 3.354E-03, based on augmentation description: 119GROC
99985914	{null}   2275070000	0.0343607	2020EPA_HAPAug	2020GADNR submitted VOC of 10.24592 TON times ratio of 3.354E-03, based on augmentation description: 119GROC

## Nonpoint Inventory, Oil and Gas:

### *Pipeline Blowdowns and Pigging emissions*

A new source was added this NEI cycle to the oil and gas sector. Pipeline Blowdowns and Pigging (SCC= 2310021801) emissions were estimated using US EPA Greenhouse Gas Reporting Program (GHGRP) data. These Pipeline Blowdowns and Pigging emissions included county-level estimates of VOC, benzene, toluene, ethylbenzene, and xylene (BTEX). These emissions estimates were calculated outside of the Oil and Gas Tool and submitted to EIS separately from the Oil and Gas Tool emissions. These emissions were considered EPA default emissions and SLTs had the opportunity to submit their own Pipeline Blowdowns and Pigging (e.g., Utah) emissions and/or accept/omit these emissions using the Nonpoint Survey. Unfortunately, these EPA default Pipeline Blowdowns and Pigging emissions did not get into the 2020 NEI release for the states that accepted these emissions due to EIS tagging issues. As a result, the following VOC and BTEX emissions were erroneously omitted from the 2020NEI:

State	VOC (tpy)	Benzene (tpy)	Ethylbenzene (tpy)	Toluene (tpy)	Xylene (tpy)
AL	713	1.66	0.07	1.07	0.48
AK	13	0.06	0.003	0.05	0.01
AZ	73	0.33	0.02	0.29	0.08
AR	34	0.01	-	0.001	0.001
CO	3,608	9.40	0.47	11.47	3.57
IL	380	1.49	0.08	1.32	0.38
IN	259	0.99	0.06	0.88	0.25
KS	942	1.69	0.20	1.43	0.64
KY	854	3.78	0.21	3.37	0.96
LA	549	3.70	0.00	0.42	0.66
MD	0.0	0.00021	0.00001	0.00018	0.00005
MI	307	1.39	0.08	1.24	0.35
MS	484	0.74	0.02	0.28	0.24
MO	43	0.04	0.0005	0.03	0.01
MT	275	1.35	0.07	1.04	0.34
NE	89	0.21	0.01	0.27	0.09
NM	1,348	-	-	-	-
NY	202	0.92	0.05	0.82	0.23
ND	18	0.08	0.00	0.07	0.02
OH	476	2.16	0.12	1.92	0.55
OK	89	0.02	0.01	0.08	0.06



State	VOC (tpy)	Benzene (tpy)	Ethylbenzene (tpy)	Toluene (tpy)	Xylene (tpy)
OR	9	0.04	0.002	0.04	0.01
PA	1,575	7.15	0.40	6.37	1.81
SD	5	0.02	0.001	0.02	0.01
TN	0.2	0.0010	0.0001	0.0009	0.0003
TX	6,285	7.91	0.19	3.17	2.68
UT	13	0.06	0.004	0.06	0.03
VA	1	0.00	0.0003	0.00	0.00
WV	1,300	5.89	0.33	5.25	1.49
<b>Total:</b>	<b>19,941</b>	<b>51.09</b>	<b>2.42</b>	<b>41.00</b>	<b>14.96</b>

#### New Mexico

EPA and the state of New Mexico worked together to exercise the point source subtraction step in the Oil and Gas Tool during the 2020NEI development period. This point source subtraction step was used for New Mexico because additional oil and gas point sources were submitted by New Mexico that were the same processes that are estimated in the Oil and Gas Tool (non-point sources). This point source subtraction step is a processed used to eliminate possible double counting of sources in the Oil and Gas Tool that are already defined in the point source inventory. Unfortunately, the resulting non-point emissions from the point source subtraction step for New Mexico did not get into the 2020 NEI release due to EIS tagging issues. New Mexico non-point oil and gas emissions are overestimated as a result; this table summarizes the overestimation at the state-level:

	2020NEI (tons)	Corrected (tons)	2020NEI - Corrected (tons)
CO	91,980	81,426	10,555
NH3	3	3	0
NOX	62,997	49,763	13,234
PM10-PRI	1,779	1,663	116
PM25-PRI	1,771	1,655	116
SO2	77,439	76,649	790
VOC	231,810	223,174	8,636

#### Nonpoint Inventory, Unpaved Road Dust, Washington State

Washington state submitted daily unpaved road VMT data instead of annual VMT, resulting in VMT, and the associated emissions estimates, being a factor of 365 too low.

Default VMT	WA-submitted VMT	Corrected VMT	Default PM2.5 Emissions	2020 NEI PM2.5 (WA-VMT)	Corrected PM2.5 Emissions
445,950,202	785,190	286,594,350	6,642	12	4,314

#### Nonpoint Inventory, Industrial Fuel Combustion -Biomass, Washington State

Washington state observed that emissions for industrial biomass fuel combustion (SCC=2102008000) were a factor of ~9 times higher in 2020 than 2017 despite State Energy Data System (SEDS) consumption data decreasing from 74,558 (2017) to 64,453 (2020) Billion BTU (E9BTU). For the 2017 NEI, WA submitted **nonpoint** fuel consumption (Option D) ICI Input Template data of 5,776 E9BTU because they believed the SEDS estimate was too high based on available permit data and therefore estimated nonpoint industrial wood consumption at 25% the total point source value.

However, for the 2020 NEI, WA instead submitted only direct **point** fuel consumption (Option A) of 13,384 E9BTU, resulting in a **computed nonpoint** fuel consumption of 51,069 E9BTU (64,453 – 13,384), which is approximately a factor

of 9 higher than the 2017 nonpoint fuel consumption. Assuming WA intended to submit 25% their point fuel consumption for 2020, their corrected 2020 nonpoint consumption would therefore be approximately 3,346 E9BTU, or a factor of 15 times less than that in the 2020 NEI.

2020 NEI PM2.5	Corrected PM2.5	2017 NEI PM2.5	2020 SEDS (E9BTU)	2020 WA-submitted Point consumption (E9BTU)	2020 Computed Nonpoint consumption (E9BTU)	2017 SEDS (E9BTU)	2017 WA-submitted Nonpoint consumption (E9BTU)
11,414	748	1,521	74,558	13,384	51,069	64,453	5,776

#### Nonpoint Inventory, Industrial and Commercial/Inst. Distillate IC Engines, Washoe County Nevada

Washoe county found calculation errors for distillate fuel ICI Engines in their submittal and would choose to use EPA estimates. The values (tons) in the 2020 NEI (Washoe-submitted) and the preferred submittal (EPA Wagon Wheel tool) are shown here.

SCC	Pollutant	Sector	2020 EPA (Wagon Wheel)	2020 NEI (Washoe-submitted)
2102004002	CO	Fuel Comb - Industrial Boilers, ICes - Oil	15	3,611
2102004002	NH3	Fuel Comb - Industrial Boilers, ICes - Oil	0.09347273	2
2102004002	NOX	Fuel Comb - Industrial Boilers, ICes - Oil	71	3,814
2102004002	PM10-PRI	Fuel Comb - Industrial Boilers, ICes - Oil	5	202
2102004002	PM25-PRI	Fuel Comb - Industrial Boilers, ICes - Oil	5	202
2102004002	SO2	Fuel Comb - Industrial Boilers, ICes - Oil	5	0.20672
2102004002	VOC	Fuel Comb - Industrial Boilers, ICes - Oil	5	591
2103004002	CO	Fuel Comb - Comm/Institutional - Oil	0.02819474	7,160
2103004002	NH3	Fuel Comb - Comm/Institutional - Oil	0.000173506	3
2103004002	NOX	Fuel Comb - Comm/Institutional - Oil	0.1309971	6,631
2103004002	PM10-PRI	Fuel Comb - Comm/Institutional - Oil	0.009434395	371
2103004002	PM25-PRI	Fuel Comb - Comm/Institutional - Oil	0.009434395	371
2103004002	SO2	Fuel Comb - Comm/Institutional - Oil	0.008631929	0.3676187
2103004002	VOC	Fuel Comb - Comm/Institutional - Oil	0.009109071	1,003

#### Nonpoint Inventory, Residential Wood Combustion, Minnesota

MN discovered an error in their residential wood combustion (RWC) submittal. For mercury and PM, the errors impacted all RWC SCCs. For NOX, only EPA-certified catalytic woodstoves (inserts and freestanding) SCCs were impacted. For SO2 and VOC, EPA-certified catalytic and non-catalytic woodstoves (inserts and freestanding) were impacted. The corrected values and those that appear in their original submittal used in the 2020 NEI are provided here at the state level.

Pollutant	Unit of Measure	2020 NEI (Original Submittal)	2020 Corrected	Corrected minus Original Submittal	% Change
Mercury	LB	100.02	12.58	-87.43	-87.4%
NOX	TON	2,673	2,632	-41	-1.5%
PM10-PRI	TON	35,348	35,521	173	0.5%
PM25-PRI	TON	34,119	35,521	1,402	4.1%
SO2	TON	1,057	1,036	-21	-2.0%
VOC	TON	34,369	33,681	-688	-2.0%