



# 2020 NEI Plan August 2020

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# 1 Introduction

This document lays out the EPA's plan for developing the 2020 National Emissions Inventory (NEI), and its intended audience is state, local, and tribal (SLT) emissions inventory developers. For more information on the NEI, please refer to the [2017 NEI Technical Support Document](#) (TSD). The [Air Emissions Reporting Rule](#) (AERR) (40 CFR Part 51, Subpart A) provides the specific requirements for state, local, and tribal (SLT) agencies to follow in reporting their emissions. The rule *requires* submission of point sources, nonpoint sources, and mobile model inputs (with one exception). This plan provides additional details regarding EPA's preferences and principles for how SLT agencies should comply with the AERR. In deciding how to submit their emissions, it is important that SLT agencies follow the principles of this plan to ensure that SLT-submitted emissions can be used in the NEI and to avoid missing emissions or double-counted emissions.

For experienced inventory developers, Section 1.1 provides key process changes with links to the sections where these changes are discussed in more detail. If you are an experienced developer, you may not need to review this entire document. We discuss the schedule, best practices for SLT inventory developers, the Emissions Inventory System (EIS), what feedback EPA will provide, and how EPA will develop the final NEI with the selection process.

## 1.1 General Plan: Status Quo and Key Changes

With potential budget constraints, we plan to replicate many of the successful 2017 processes for the 2020 inventory development process. Things that were successful and will be repeated for the 2020 process include:

- One version of the full NEI (no releases of multiple versions)
- Releases of data categories as they are completed
- Requiring throughput for computing nonpoint industrial and commercial/institutional fuel combustion sources (ICI) where direct nonpoint ICI emissions are not submitted
- The improved nonpoint survey
- The Wagon Wheel tools with Input Template submittals for nonpoint
- A later nonpoint data category submittal due date: March 31, 2022 vs. January 15, 2022 for the rest of the data categories

However, we are highlighting a few key changes here, which are discussed in greater detail in this document (click the highlighted section to move directly to that area of the document):

- Collect ideas and concerns from states regarding 2020 as an inventory year (Section 1.2)
- Targeted EIS reporting code and Consolidated Emissions Reporting Schema (CERS) changes (Section 4.1)
- Adding several per- and polyfluoroalkyl (PFAS) compounds (Section 4.1.2)
- Completeness feedback reports (Section 5)
- No interim binning for nonpoint (Section 7.2.1)
- Removal of HAPs from most EPA nonpoint tools (Section 7.2.2)
- Import wizard for EPA Wagon Wheel tools (Section 7.2.2)
- Introduction of a new method for agricultural silage VOC emissions (Section 7.2.2)
- New methodology for most nonpoint solvents categories (Section 7.2.2.1)

The public release of the full 2020 NEI is expected to be March 31, 2023.

## 1.2 COVID-19 Impacts on Inventory

The year 2020 is expected to be an atypical inventory year in many ways because of the COVID-19 crisis. Activity levels for all data categories will be altered as a result of unprecedented reduced economic conditions from widespread state- and local-specific “stay at home orders”. In some cases, activity levels will be drastically reduced, in other cases, activity levels may have risen (e.g., bleach manufacturing, sterilizers). While 2020 may not be useful for some more typical purposes in certain areas, it is expected to be a year where numerous air quality analyses and modeling will be conducted to investigate the air quality impacts of COVID-19.

In addition to the normal work to develop an NEI, the year 2020 will call for higher temporal resolution for certain parts of the NEI, like the nonpoint sector, where the requirements are to report emissions only as county/annual totals. The needs for COVID-19 analyses may require monthly or other temporal allocation of emissions, which would create an additional need to coordinate with SLTs who could voluntarily share information about sub-annual activity. For point sources, SLTs can provide the seasonal fractions using the existing data structure, which would help improve the sub-annual allocation of emissions. There may be other currently unknown data gathering needs for these key COVID analyses.

To be better informed about these considerations, we will schedule one or more listening sessions via webinar, so that agencies can provide their ideas and concerns related to developing a 2020 NEI and the temporal considerations that we will need for modeling purposes. Based on feedback, we will develop and announce further plans for addressing those ideas and concerns. Using the NEI update emails, we will keep SLT agencies apprised of results from the listening sessions and our plans for any additional information that may be requested for the 2020 NEI and associated temporal allocation information.

## 1.3 Suggested Roles and Responsibilities for EPA Regional Offices

As part of the 2020 NEI process, we would like to help guide how regional offices (ROs) can assist with the requirements for completing the NEI on schedule. As a part of that process, we would like for the regions to assist us with the following items:

- Promoting requests for sending in activity data for all non-Wagon Wheel sectors
- Making sure SLTs provide inputs for the Wagon Wheel according to the schedule in the NEI plan
  - Specifically, ensuring SLTs submit either direct emissions or input template data for nonpoint ICI fuel combustion
- Helping to make sure SLTs complete and submit the nonpoint survey on time
- Helping us ensure that SLTs review draft estimates and information and getting comments back by the timelines laid out
- Helping track SLTs that will accept our emission estimates (draft and/or final)
- Help ensure that point source submittals from SLTs include control device code and control efficiency (if available), at a minimum, for all large, Type A sources

We will make sure to keep the regions informed of any delays in the schedule as laid out in the NEI plan. As deadlines approach, it is expected that regions would reach out to their member SLTs and inform them of imminent deadlines.

## 2 Schedule

Significant changes to the 2020 NEI schedule from the 2017 NEI Plan include:

- The submittal deadline for **all** nonpoint sources (including emissions, activity, and the nonpoint survey) is March 31, 2022. This deadline is an extension of the submissions grace period from the December 31, 2021 deadline in the [AERR](#).
- The public release of the complete 2020 NEI is expected to be March 31, 2023.

**Table 2-1: 2020 Overall NEI Schedule**

<b>Item: Overall</b>	<b>Who</b>	<b>Details</b>	<b>Deadline</b>
EPA finalizes implementation of changes to codes and QA routines for 2020	EPA	Code changes and QA routines to be reflected in EIS (and web services)	11/1/2020
EPA posts expected pollutants list to 2020 <a href="#">NEI website</a>	EPA	Point, Nonpoint and Events only. Mobile source expected pollutants are defined by the Motor Vehicle Emission Simulator ( <a href="#">MOVES</a> ) model.	11/15/2020
EIS Production Submission Window Opens for SLT submittals	SLT	All data categories; QA submittal windows are always open	7/1/2021
EPA provides updated EIS Bridge Tools for use in 2020 NEI submittals	EPA	EIS schema changes will not be reflected until after 2019 Point submittal window closes in January 2021	9/1/2020
Updated EIS XML schema changes implemented in EIS	EPA	Will be implemented after 2019 Point submittals are complete	1/31/2021
EPA sends reminder to SLTs to review EIS Completeness Reports for all data categories to SLTs and Regional Offices (See Section 5)	EPA	EPA will send final Completeness Report to Air Directors approximately 1 month after deadline and grace period ends (February 2022 for all data categories, except April 2022 for nonpoint)	12/1/2021
SLTs last day for EIS submittal of Point, Onroad Mobile, Nonroad Mobile and Events data category emissions	SLT	The regulatory deadline for emissions data and model inputs is December 31, 2021. However, the EPA provides a grace period because of the holidays at the end of the season, and also has a longer grace period for nonpoint sources (March 31, 2022), which have underlying data available at later dates.	1/15/2022
EPA sends final completeness reports to SLTs, Regional Offices and Air Directors	EPA	For all data categories except nonpoint	2/15/2022
SLT deadline for EIS submittal of Nonpoint data category emissions, Nonpoint Survey, and Nonpoint Input Templates	SLT		3/31/2022
EPA sends final completeness reports to SLTs, Regional Offices and Air Directors	EPA	For nonpoint data category	4/30/2022
2020 Full Public Release	EPA	Includes functioning NEI Data page with query tools, summaries and Technical Support Documentation	3/31/2023

While the AERR requirements indicate a December 31, 2021 deadline for submitting the 2020 NEI data, we understand the difficulties this presents to SLTs agency staff due to holiday schedules. Therefore, we include a two-week grace period that will end on January 15, 2022. In addition, as discussed in Section 7.2.1, we are

further extending the grace period for nonpoint sources to March 31, 2022 to allow SLTs more time to submit input templates, some of which require 2020 point inventory throughput or emissions data.

Unlike the 2017 NEI plan, we are not staggering the submittal due date within the nonpoint data category; the nonpoint survey, emissions, and/or input template submittals for the nonpoint data category are all due on March 31, 2022. **EPA strongly recommends that SLTs start on their nonpoint submissions at least several months in advance of this deadline.** We have developed a draft of when (resources permitting) the EPA expects to make the data inputs available for nonpoint, and we are basing our suggested milestones on that availability (see Section 7.2). For those nonpoint sources that do not rely on the Wagon Wheel for SLT feedback (agricultural fertilizer, agricultural livestock, agricultural burning), we strongly recommend that SLTs provide timely responses on requests for activity data, for review of draft methods, and other comments they may have on EPA-provided information. Please note that while there are no more “bins” for determining the SLT submittal due dates in nonpoint, we have still spread out the work needed for collaboration on the nonpoint sectors based on the availability of activity data and degree of methodology changes requested in different tools. The details on the EPA nonpoint tools and input activity submittals are provided in Section 7.

We provide a refined schedule for releasing data in EIS, which precedes the public NEI release by several months for some data categories. Because there are usually at least some minor late changes in data, EIS release data should be regarded as “draft” until the public release date for the NEI. We provide the EIS data early with caveats because some data category inventories will be in their near-finalized state and thus available sooner than others, and because it takes a few weeks to build all data summaries and documentation that accompany the public release of the NEI. Only SLT and EPA emissions inventory developers, Regional Planning Offices (RPOs), EPA Regional Offices (ROs) and other EPA users have access to the EIS datasets, which are available in EIS when “finalized” but before public website dissemination can occur.

As was done for the recent NEIs, comments on the draft 2020 NEI will be focused on issues identified by EPA quality assurance. We do not permit SLT responses to these comments to be wholesale replacement data for an entire data category. In the past, allowing wholesale replacements had the unintended effect of delaying the NEI release by many weeks or months and needlessly increasing EPA costs and workload. SLT agencies will still be able to send data corrections during a QA period. We are not including a placeholder for a second version (“v2”) of the 2020 NEI, since it is unknown if a version 2 of the 2020 NEI would be scheduled after the full NEI release in March 2023.

Note, while the tables below are organized into NEI data categories, discussion of inventory sources is grouped by source type. For example, methodology on aircraft emissions (a mobile source) is discussed in Section 8.6 (Mobile sources), but since they are a component of the Point Data Category (inventory), schedule information is provided in Table 2-2. Similar quirks exist for rail and commercial marine vessel sources, mobile sources that are inventoried with the rest of the point and/or nonpoint sources.

**Table 2-2: 2020 NEI Schedule for the Point Data Category**

Item: Point	Who	Details	Deadline
EPA 2020 landing/takeoff (LTO) data available for SLT review period	EPA	On 2020 NEI Documentation website or SharePoint. SLTs can update facility information as well (e.g., names and locations)	8/31/2021
SLT comments on EPA LTO data due	SLT		10/30/2021

Item: Point	Who	Details	Deadline
EPA loads initial release of 2020 TRI data into EIS	EPA	TRI data will be updated months later -see below. The intention is for SLTs to compare their data to TRI prior to submitting HAP data.	11/30/2021
SLTs and EPA ROs review Agency Submittal History Report on EIS Gateway	EPA	All facilities listed as "OP" should have emissions reported or be in process of being reported. Update operating statuses as necessary	12/1/2021
SLTs last day for submittal of Facility Inventory edits to EIS	SLT	EPA closes Facility Inventory window on 1/9/2022	1/9/2022
SLTs last day for submittal of Point emissions to EIS	SLT		1/15/2022
EPA loads EPA-estimated 2020 Electricity Generating Units emissions to EIS	EPA		1/15/2022
EPA sends final completeness report to SLTs, ROs, and Air Directors	EPA		2/15/2022
EPA provides feedback to SLTs on data completeness and outliers	EPA	Window open on a case-by-case basis for corrections only	2/15/2022
EPA loads latest available 2020 TRI	EPA	These data will be used in NEI selection for pollutants not submitted by SLTs	6/15/2022
SLT corrections based on EPA feedback due	SLT	Completeness and outlier checks	7/30/2022
2020 NEI Point Release in EIS	EPA	SLTs should consider this the Final NEI as EPA has no current plans to update.	9/15/2022
Public Release of 2020 NEI Point inventory	EPA	Includes documentation, facility and process summaries, and SMOKE Flat File	10/15/2022
2020 Final NEI Point Release in EIS	EPA	Whether this differs from the 9/15/2022 release will be determined by EPA management.	2/28/2023

**Table 2-3: 2020 NEI Schedule for the Onroad and Nonroad Mobile Data Categories**

Item: Mobile	Who	Details	Deadline
Post instructions (including details on best practices), QA tool, and 2020 default inputs for onroad and nonroad	EPA	On 2020 NEI Documentation website or SharePoint	8/1/2021
EPA sends reminder to SLTs and ROs to review EIS Completeness Reports	EPA	Except for California, states required to submit MOVES inputs. See checklist of data in Section 3.3.3	12/1/2021
SLTs last day for submittal of Onroad/Nonroad activity input data to EIS	SLT	SLT provides MOVES county databases (CDB) tables or notifies EPA to use EPA default data	1/15/2022
EPA sends final completeness report to SLTs, ROs, and Air Directors	EPA	Share record of CDB submittals	2/15/2022
EPA provides feedback to SLTs on data quality and outliers	EPA	Window open on a case-by-case basis for activity data corrections only	4/1/2022
SLT corrections based on EPA feedback due	SLT	Activity data only	6/1/2022



<b>Item: Mobile</b>	<b>Who</b>	<b>Details</b>	<b>Deadline</b>
EPA solicits corrections on case by case basis	SLT	Starting May 15, 2022	6/15/2022
EPA provides computed emissions	EPA		7/15/2022
SLT review of EPA-computed emissions deadline	SLT		8/15/2022
2020 Final NEI release in EIS	EPA		9/15/2022
Public Release of Final 2020 NEI Mobile inventories	EPA	Includes documentation, data category summaries, and SMOKE Flat Files	10/15/2022

**Table 2-4: 2020 NEI Schedule for the Events Data Category**

<b>Item: Events</b>	<b>Who</b>	<b>Details</b>	<b>Deadline</b>
Inform SLTs on our overall plans for methods changes in the 2020 NEI for wildland fires (WLF)	EPA	Provide details on proposed changes	6/30/2021
EPA to request 2020 activity data from SLTs and other local organizations. Also, EPA to send questionnaire; any state submitting activity data has to fill this out	SLT	EPA will send a memo and an Excel-based template for SLT use via email. Might need to alter information in the memo and the template if we switch to BlueSky Pipeline instead of using BlueSky Framework for emission estimating process (see Section 9.2).	8/1/2021
Initiate fires workgroup	EPA	Workgroup based on approach used for 2014 NEI and 2016 Collaborative emissions inventory development process with calls at regular intervals	8/15/2021
Provide draft daily acres burned and emissions estimates based only on default fire occurrence and activity data along with documentation.	EPA	Documentation will include the methodology used to generate the draft SMARTFIRE2-Bluesky emissions estimates.	9/1/2021
Activity data and questionnaire due back to EPA	SLT	Get information back from SLTs and others	12/15/2021
Review of draft SMARTFIRE2-BlueSky emissions estimates	SLT	Due date to submit new inputs and/or comments on draft estimates and methods, per the data disseminated on 9/1/2021. These estimates will be based on only default activity data. No state-submitted activity data will be used in this process.	12/15/2021
EPA communicate with SLTs on the quality of the submitted activity data	EPA	This includes comments on activity data, answering questions about draft estimates, and cleansing the data so that we can use for final emission estimates	12/15/2021 - 3/15/2022
EPA sends initial submittal status to SLTs and ROs	EPA	Indicate whether SLTs submitted emissions, activity data, or approved of EPA estimates; "completeness" definition differs from other data categories since Events is not required by AERR.	12/30/2021
EPA sends final submittal status email to SLTs, ROs, and Air Directors	EPA	"Completeness" definition differs from other data categories since Events submittal is not required by AERR.	2/15/2022

<b>Item: Events</b>	<b>Who</b>	<b>Details</b>	<b>Deadline</b>
Deadline for SLT concurrences on comments and clarifications requested by EPA on submitted activity data	SLT		3/15/2022
EPA posts revised data and documentation outlining changes from draft	EPA	Will reflect suggested revisions/comments from draft review as resources allow	5/15/2022
Final events results review by SLTs	SLT	Only minor changes will be allowed at this stage of process due to resource limitations	7/15/2022
Develop final EPA-based Wild Land Fires emission estimates for the US, including final documentation, including updated trends, and data parsed by tribal land	EPA	These will be the final EPA estimates. See Section 9	8/15/2022
2020 NEI release in EIS, public release to follow a month later	EPA		9/15/2022
Public Release of Final 2020 NEI Events inventory	EPA	Includes documentation, data category summaries, and SMOKE Flat Files	10/15/2022

**Table 2-5: 2020 NEI Schedule for the Nonpoint Data Category**

<b>Item: Nonpoint</b>	<b>Who</b>	<b>Details</b>	<b>Deadline</b>
Post list of nonpoint sectors where EPA will develop estimates, along with 2020 activity data availability	EPA	See Section 7.2	7/31/2020
EIS Nonpoint Survey is opened with rest of SLT submittal windows	EPA	See Section 7.2.6	7/1/2021
EPA provides all HAP Augmentation factors from EIS into a single CSV file--useful for SLTs submitting their own estimates	EPA	The Wagon Wheel (WW) for 2020 will produce only CAPS. So, SLTs that use the WW to "test" for emissions can estimate resulting HAPs via these factors.	7/1/2021
EPA posts consolidated Point-Nonpoint SCC Crosswalk spreadsheet based on latest-available version of the WW	EPA	Any changes to this crosswalk after this date will be provided via Nonpoint Method Advisory (NOMAD) team meetings and NEI/EIS listserv updates	7/1/2021
EPA provides tools for SLTs to load Input Templates to WW and posts all draft default Input Templates for 2020 WW	EPA	Should closely resemble 2017 Input templates except for any new features (via NOMAD discussions) that have been put in place	7/1/2021
EPA posts draft Nonpoint Emissions Methodology and Operation instructions (NEMOs) for any new WW sources	EPA	At this point, likely limited to ag silage, Solvents/Volatile Chemical Products (VCPs), and perhaps ICI updates	7/1/2021
SLT comments on draft default Input Templates and NEMOs due	SLT	Comments submitted via email to NEI team lead	8/15/2021
EPA finalizes methodology for all Nonpoint tools for 2020 NEI	EPA	Posted on SharePoint, reflects SLT comments. Activity data will be updated as it becomes available (see Section 7.2.2).	9/1/2021
EPA works with NOMAD group to refine and post updated Nonpoint Survey and Point-Nonpoint Reconciliation spreadsheet	EPA	Nonpoint Survey posted in EIS and Point-Nonpoint Reconciliation spreadsheet posted to NEI website or SharePoint	9/1/2021

Item: Nonpoint	Who	Details	Deadline
EPA sends reminder to review EIS Completeness Reports to SLTs and ROs	EPA	Nonpoint Survey summary report, list of submitted Input Templates, and list of sources with emission submittals	12/1/2021
SLT deadline for submitting ALL portions of Nonpoint Survey (end of nonpoint grace period)	SLT	Ensure the Survey is marked as "Complete" (the green button should display in EIS)	3/31/2022
SLT deadline to submit ANY/ALL Input Templates for WW to be used in 2020 NEI	SLT	SLTs should utilize their Point inventory submittal to populate their ICI, Solvents, Gas Distribution, and POTWs Input Templates.	3/31/2022
SLT deadline for submitting ANY/ALL nonpoint emissions	SLT	If SLT chooses not to submit inputs	3/31/2022
EPA sends final Completeness Report to SLTs, ROs, and Air Directors	EPA	Nonpoint Survey summary report, list of submitted Input Templates, and list of sources with emission submittals	4/30/2022
EPA provides feedback to SLTs on data submissions	EPA/SLT	Window open on a case-by-case basis for emissions only. We will note where SLTs submitted acceptable inputs rather than emissions	5/1/2022-9/1/2022
EPA posts WW tool reflecting all SLT-submitted inputs	EPA	includes SLT inputs submitted through 3/31/2022. Some (default) activity data updates are possible through the end of 2022.	9/1/2022
Release Draft Nonpoint selection in EIS for all nonpoint	EPA	Should be close to final NEI except for some late-breaking default (non-SLT-submitted) activity data	9/30/2022
SLT provides corrections on case by case basis, starting 5/15/2022	SLT	SLTs do not need to submit updated Input Templates. EPA will load the "latest available" data in late 2022.	11/30/2022
EPA posts final Wagon Wheel	EPA	Includes any possibly <i>minor</i> SLT input edits and latest possible available (default) activity data	2/28/2023
2020 NEI Release in EIS for all nonpoint	EPA	Reflects all SLT data, including point inventory subtraction from input templates	2/28/2023

### 3 Best Practice Recommendations for SLT Inventory Developers

The section focuses on key items for SLTs to consider when developing their inventories. It includes suggested timelines for activity, AERR requirements and best practices to follow. In addition, it will explain how pollutants will be evaluated for inclusion, exclusion, and/or supplementation by data category. Lastly, it will explain how data corrections will be handled between EPA and SLTs.

#### 3.1 Suggested SLT Inventory Development Schedule and EIS QA Checks

To assist you in allocating your time and resources to complete this requirement, we are including a suggested timeline by data category: Table 3-1 for the point inventory, Table 3-2 for the nonpoint inventory, Table 3-3 for mobile sources, and Table 3-4 for events.

**Table 3-1: Suggested SLT Schedule for Point Inventory Development**

Date	Activity
11/1/2020 - 3/1/2021	Be aware of new and changed reporting codes (e.g., SCCs) and QA checks, and update your data system if possible, to match what is in EIS. Update your data system to include changes to the CERS EIS XML schema (effective 1/31/2021).
3/1/2021 - 11/1/2021	Run EIS Facility Configuration reports and compare to your local system to ensure IDs still match and to identify new facilities, units, processes, release points that need to be created in EIS.
3/1/2021 - 11/1/2021	Develop facility inventory submission to update EIS with changes to status, new facilities, units, processes and release points. Identify facilities or units that are no longer active and set the operating status accordingly.
3/1/2021 - 11/1/2021	Submit facility inventory data to the EIS QA Environment. Check Potential Duplicates section of feedback report and resolve any real duplicates as opposed to actual new facilities that need to be added. Revise or add facility IDs in EIS as needed to allow EIS to recognize the correct facility when you submit to Production.
3/1/2021 - 11/1/2021	Check number of facility, unit, process, and release point records received on the Statistics tab of feedback report against number of records submitted.
3/1/2021 - 11/1/2021	Resolve all critical errors in facility feedback report
3/1/2021 - 11/1/2021	Submit facility inventory data to the EIS Production Environment. Note that you only need to submit data for items that have changed between your system and EIS. Existing facilities and units and release points do not need to have locations, unit types, release parameters, etc. reported to EIS each year if they are already in EIS and acceptable. In particular, if your system does not contain information on unit type or other data fields in EIS, do not include those fields in your submittal with "unclassified/miscellaneous" for existing facilities.
3/1/2021 - 11/1/2021	Check Potential Duplicates section of EIS and resolve any issues by contacting EPA to add or merge facilities.
6/1/2021 - 12/31/2021	Download landing/takeoff data for review from 2020 website, available 8/31/2021
6/15/2021	Expected pollutants list available for download from SharePoint
6/1/2021 - 12/31/2021	Develop emissions (point) inventory for submission to EIS
6/1/2021 - 12/31/2021	Submit point inventory to the EIS QA Environment
6/1/2021 - 12/31/2021	Check number of reporting period and emission records received on the Statistics tab of the feedback report against the number of records submitted.
6/1/2021 - 12/31/2021	Check EIS feedback report and resolve all critical errors
6/1/2021 - 12/31/2021	Review emission range warnings in EIS feedback report for possible outliers or incorrect entry
7/1/2021 - 12/31/2021	Submit data to the EIS Production Environment
10/1/2021 - 12/1/2021	Run suggested QA reports in the Suggested QA Checks for SLT Point Inventory Development (Table 3-5)
10/1/2021 - 12/1/2021	Review expected pollutants list against data submitted.
10/1/2021 - 12/1/2021	Run Completeness Report to verify everything has been submitted and check feedback reports and run summary EIS reports to insure everything has been loaded into EIS as expected
12/1/2021 - 1/15/2022	Address any last-minute adjustment before 1/15/2022 emissions submittal deadline (remember facility window closes 1/9/2022)

**Table 3-2: Suggested SLT Schedule for Nonpoint Inventory Development**

<b>Date</b>	<b>Activity</b>
Now - indefinite	Join NOMAD committee listserv and attend monthly workgroup calls -generally 3 <sup>rd</sup> Wednesday each month at 2pm Eastern Local Time. Email <a href="#">Jennifer Snyder</a> to request membership.
11/1/2020 - 3/1/2021	Be aware of new and changed reporting codes and QA checks, and update your data system if possible, update your data system to match what is in EIS.
6/15/2021	Expected pollutants list available for download from 2020 NEI site
6/1/2021 - 12/1/2021	Submit data to the EIS QA Environment
6/1/2021 - 10/1/2021	Check that activity data for all agricultural fires has been completed
6/1/2021 - 12/1/2021	Check number of emission process, reporting period and emission records received on the Statistics tab of feedback report against the number of records submitted. The statistics should equal
6/1/2021 - 12/1/2021	Resolve all critical errors in feedback report
6/1/2021 - 12/1/2021	Review emission range warnings for possible outliers or incorrect entry
7/1/2021 - 3/31/2022	EIS Production submittal window open for all nonpoint emissions and nonpoint survey submittals and SharePoint for nonpoint input templates
3/31/2022	Extended emissions submittal deadline for all nonpoint sources: emissions, input templates, and the nonpoint survey
7/1/2021 - 3/31/2022	Submit, if not accepting EPA inputs/emissions, to SharePoint any inputs to EPA Wagon Wheel using provided templates
9/1/2021 - 3/31/2022	Review Nonpoint Survey in EIS; determine which sectors will be submitted to EIS and which sectors you will accept EPA estimates/inputs
10/1/2021 - 3/1/2022	Run suggested QA reports listed in the Suggested QA Checks for Nonpoint Inventory Development (Table 3-6)
10/1/2021 - 3/1/2022	Run completion report to verify everything has been submitted
1/15/2022	Recommended SLT submittal date for Commercial Marine Vessel (CMV) and rail estimates
3/31/2022	Nonpoint survey due
3/31/2022	Due date for submitting emissions for all non-CMV and non-rail sources

**Table 3-3: Suggested SLT Schedule for Mobile Inventory Development**

<b>Date</b>	<b>Activity</b>
Now-indefinite	Join Multi-Jurisdictional-Organization (MJO)-MOVES workgroup if interested. EPA methods and updates are provided on calls. Generally, the 3 <sup>rd</sup> Thursday each month at 2pm Eastern Local Time. Click <a href="#">here</a> to register.
6/1/2021 - 12/1/2021	Download onroad and nonroad inputs and instructions from the EIS Gateway
6/1/2021 - 12/1/2021	Adjust inputs (e.g., Vehicle Miles Traveled (VMT), inspection maintenance, etc.)
6/1/2021 - 12/1/2021	Package submission according to instructions posted on 2020 NEI website including running the provided QA script, then submitting to the EIS QA environment, resolving any critical errors, and finally submitting to the EIS production environment
6/1/2021 - 12/1/2021	California and Tribes submit emissions data (all other agencies can submit emissions, but only inputs will be used for NEI)
2/15/2021-6/15/2021	Respond to EPA questions about input data
7/15/2021-8/15/2021	Review emissions developed by EPA and provide feedback
12/1/2021 - 1/15/2022	Address any remaining adjustments by 1/15/2022 submittal deadline

**Table 3-4: Suggested SLT Schedule for Events Inventory Development**

Date	Activity
3/1/2021 - 6/15/2021	Join Fires workgroup if interested, attend calls to understand EPA methods and provide comments on process via questionnaire. Contact <a href="#">Jeffrey Vukovich</a> to request membership.
6/10/2021 - 9/1/2021	Work on questionnaire and template sent by EPA. Contact <a href="#">Jeffrey Vukovich</a> to request membership.
9/1/2021	Due date for draft activity data and questionnaire
9/1/2021	Download SMARTFIRE2-Blue-sky preliminary results from 2020 NEI website
9/30/2021 - 12/15/2021	Provide comments on draft data
1/15/2022	Wildland fire emissions or activity data submittal due
3/1/2022 - 5/1/2022	Final events data results review

Table 3-5 provides suggested EIS QA checks for SLTs to use for the point inventory, and Table 3-6 for the nonpoint inventory development process. **To best take advantage of these reports, your data will need to have been submitted early enough that you can check for data quality and adjust your previously submitted file.** For nonpoint data, use the information in Section 7.2 to leverage the availability of EPA data with year 2020 activity input data for certain nonpoint categories; you can get a “near-final” EPA default estimate after EPA loads 2020 activity data to the nonpoint tools.

**Table 3-5: Suggested QA Checks for SLT Point Inventory Development**

Type	Report Type	Dataset(s)	Pollutants	Geographic Region	Checks
Emission Summary - By Geography	State or County Level	Your Agency Dataset	All Active Pollutants	Your state, county or Tribe	Check that state/pollutant combination totals in EIS equal the state/pollutant combinations that you intended to submit to EIS. This will assure that a) all of your emissions data successfully made it into the xml file, and b) all of the xml data were accepted by EIS. If there are significant differences, run a facility or unit or process level EIS report and compare to your system's summaries to EIS summaries to identify the source of the differences.
Comparison - Facility	Facility Level	Your current Agency Dataset; 2017 Agency Dataset; 2017 NEI	All Active Pollutants	Your state, county or Tribe	Compare your 2020 submitted and accepted emissions to either your 2017 submission or to the 2017 NEI. Look for large differences which might indicate reporting errors. Check that all pollutants reported in 2017 have been reported in 2020.
Emission Summary - By Facility	Facility Level	Your Agency Dataset	All Active Pollutants	Your state, county or Tribe	Sort for Top 25 facilities for each pollutant reported. Do they make sense?

**Table 3-6: Suggested QA Checks for SLT Nonpoint Inventory Development**

Type	Report Type	Dataset	Pollutants	Geographic Region	Checks
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Emission Summary - By Geography	SLT by Sector	Your Agency Dataset	All Active	Your state, county or Tribe	Check that the state (county or Tribe)/sector/pollutant in EIS are the same as the file you submitted. If there are differences, run the same report at the SCC level until you can highlight where the differences are coming from.
Comparison	Sector	Your current Agency Dataset; 2017 Agency Dataset	All Active	Your state, county or Tribe	Compare your 2020 submission to your 2017 submission. Check that all pollutants and sectors reported in 2017 have been reported in 2020. If there are differences, run the same report at the SCC level to determine the location of the erroneous or missing data.

### 3.2 AERR

A significant change to the 2017 NEI was enforcing the AERR requirement (via Table 2b to Appendix A of Subpart A in 40 CFR 51.30) for throughput data necessary for computing nonpoint fuel combustion from industrial and commercial/institutional (ICI) sources. We are again enforcing this for the 2020 NEI, and it will be a part of the Completeness Reports.

We no longer support nonpoint ICI emissions computed from point inventory *emissions* subtraction. However, we will again support flexible reporting options for SLTs in the form of either nonpoint activity data or point activity data which can be used to reconcile with overall consumption data from the Energy Information Agency (EIA). We will also work with local and state agencies that do not cover the entire state to craft nonpoint ICI estimates for their specific counties of responsibility. More information on this requirement is discussed in Section 7.2.4. It is important to note however, that the nonpoint (or point) ICI input activity data are not required if SLTs submit nonpoint ICI emissions directly to EIS (by March 31, 2022). In this case, SLTs are expected to ensure complete ICI emissions while also avoiding double-counted emissions across the point and nonpoint inventories.

#### 3.2.1 Point Inventory

Please refer to 40 CFR Part 51, Subpart A for the point source submission requirements. Key requirements for your attention include:

- The data fields required by [Table 2a and Table 2b to Appendix A of the AERR](#). The field definitions are provided in Section 51.50 of the AERR.
- The point source reporting thresholds are specified as part of [Section 51.50](#) definition of point sources. The emissions thresholds are specified as “potential to emit” emissions (except for lead) and are lower for sources within nonattainment area boundaries for ozone, PM10, PM2.5, and CO nonattainment areas. The reporting threshold for lead emissions as point sources is 0.5 tons per year of actual emissions.
- Although the reporting thresholds are based on potential to emit, actual emissions are required to be reported.

#### 3.2.2 Nonpoint Inventory

Please refer to 40 CFR Part 51, Subpart A for the nonpoint source submission requirements. Key requirements for your attention include:

- The data fields required by the AERR are provided in [Table 2b to Appendix A](#). While EIS does not enforce the reporting of all required data fields, air agencies are legally obligated to report the required fields. The field definitions are provided in [Section 51.50](#) of the AERR.
- Obtain the latest reporting codes from EIS prior to compiling nonpoint source data. For the 2020 NEI cycle, some codes have changes (see Section 4.1).

For the 2020 NEI, as detailed in Section 2, we are extending the SLT submittal deadline for all nonpoint sources to March 31, 2022 for all emissions and SLT activity inputs. These deadlines are well beyond the January 15, 2022 extended-AERR deadline for all other NEI sources and data categories. We believe the extended deadline for the nonpoint data category, particularly for sources that rely on point inventory activity or emissions data, will allow for improved estimates via more recent activity data and more accurate point source subtraction.

### 3.2.3 Mobile Inventory

For onroad and nonroad, state and local agencies are required to submit MOVES model county data bases (CDB) inputs. They may choose to submit emissions in addition, though EPA would not intend to use those. The exceptions are tribes and California, who may submit emissions only.

## 3.3 Best Practices: How Should I Submit My Data?

For every data category, we have the following recommendations:

- Plan to start your submission process *at least* 4-8 weeks prior to the deadline, accounting for time away from the office for holidays.
- When submitting emissions, do not submit zeroes unless you know those pollutants are not emitted from those SCCs. See Section 3.4 for more details.
- Submit data to the EIS QA Environment prior to submitting data to the Production Environment and make sure your feedback reports are clean prior to submitting to the Production Environment.
- Use EIS comparison reports as an additional QA step (see Section 10.3) to compare emissions to the previous NEI, latest available EPA data, as well as your previous inventory submittal(s).
- For particulate matter, please provide both PM10-PRI and PM25-PRI if you can, or equivalently provide PM10-FIL, PM25-FIL, and PM-CON. You can report all five PM pollutants, but note that EIS QA checks will verify their arithmetic. If you cannot provide complete data, EPA will fill those gaps where needed by PM Augmentation within EIS.
- Verify that the emission totals in EIS agree with what you have in your agency's data system after submission to EIS Production.
- Run the EIS Completeness Report and update your submission to meet or exceed all completeness criteria.

### 3.3.1 Point Inventory

The EPA encourages the use of the following best practices when submitting emissions of point sources.

- Collecting data from facilities:
  - Request that facilities use stack test data, material balances, or other site-specific and reliable calculation methods to estimate emissions for their processes. Where such methods are not available, facilities can use the best available emission factors for similar processes.
  - Require that facilities use the latest EIS reporting codes (e.g., SCCs, unit types). Download these from EIS and make them available to your facilities. An up-to-date SCC list can also be found by facility at the [EPA SCC Website](#).



- For HAPs, encourage facilities to compare their HAP submissions to what has been submitted to TRI. While the EPA prefers the SLT-reported HAP emissions for the NEI because they should be at the more detailed process level, and integrated with any criteria emissions for those processes, the facility-level TRI data and SLT-reported process-level data should sum to the same values. States should NOT report facility total HAPs to separate non-integrated process IDs, and States should NOT report TRI facility-level totals as their own data.
- Do not use EPA’s HAP Augmentation ratios or other means to report HAPs for a facility unless you are confident that you are accounting for all significant sources of any given pollutant for a facility in your submittal. Reporting only a portion of the HAPs for a facility in your Agency’s EIS submittal will result in the TRI or other EPA dataset values for that HAP not being considered for selection for that facility, even though those other datasets might provide a much more complete accounting of that HAPs emissions than the HAP Augmentation approach.
- Building your inventory:
  - Use consistent identification codes from one year to the next (e.g., facility, unit, release point, and process identifiers). This prevents the creation of duplicate facilities or sub-facility records, which reduces the potential for double-counted emissions to be introduced either in State-reported data or due to the use of TRI or CAMD values. If needed, work with your information technology department to identify ID changes that have been made in your data system and update your agency IDS in EIS for existing facilities and units if your Agency IDs have changed prior to submitting your emissions.
  - Provide control information whenever possible, making sure that it is complete. The control data are required by the AERR (when controls are present), and the EPA uses the control data to assess future possible controls as a demonstration of whether and how future NAAQS can be attained.
- Reporting best practices:
  - Submit updates to the “Operating Status Code” for facilities that are no longer operating or no longer required to report as point sources. This will impact your completeness report since facilities which have a Facility Site Status Code of OP (Operating) and an Agency Facility ID that have not submitted emissions will be counted as incomplete. Facilities that do not have a S/L Agency ID, such as most airports and the TRI facilities that USEPA adds are not counted as incomplete.

### 3.3.2 Nonpoint Inventory

The EPA encourages the use of the following best practices when submitting emissions of nonpoint sources.

- EPA’s nonpoint emissions tools and input templates:
  - EPA encourages SLT agency staff to participate in the review and development of the nonpoint emissions tools, datasets, input templates for the tools, and Nonpoint Emissions Methodology and Operator Instructions (NEMO). The EPA will be continuing Nonpoint Method Advisory (NOMAD) workgroups focused on method improvements and documentation in the tools, with particular focus on how to best obtain SLT-submitted activity data where available.
  - Focus on the expected delivery dates for nonpoint activity data (see Section 7.2): some default input data for year 2020 will be available much sooner than others, so you will be able to obtain activity for nonpoint source categories at different times.
  - After the tools/datasets and input templates are released, the EPA encourages states to review the available documentation and use the input templates to estimate their emissions. The ability

for SLTs to directly load their input activity data in the Wagon Wheel and compare emissions to the default data will be a primary focus for the 2020 NEI Nonpoint data category (resources permitting). Alternatively, if no changes are needed to these EPA defaults, SLT air agencies can indicate to EPA (through their nonpoint survey response) their interest in allowing the EPA defaults to supplement the State's NEI emissions estimate.

- Provide an accurate and timely nonpoint survey response.
- Building your inventory:
  - Do not use old inventory documentation (such as outdated information on the Emissions Inventory Improvement Program website) for nonpoint categories (e.g., hospital sterilizers). Instead, use the [2017 NEI TSD](#) or your own approach based on current information (your emission factors and activity data).
  - Provide control information whenever possible, making sure that it is complete. The control program data are required by the AERR (when control programs are present), and EPA uses the control data to assess future possible controls as a demonstration of whether and how future NAAQS can be attained.
  - Use the expected pollutants list (see Section 3.4.2) to help ensure complete coverage and reduce mixing of EPA and SLT-submitted data where possible. Note: there is no need to check for expected pollutants for nonpoint sources that you are accepting EPA estimates (as-is, or submitting Input Templates for Wagon Wheel).
  - Use the information provided to EPA in the 2020 nonpoint survey (see Section 7.2.6) to make sure to report those categories that you indicated exist in your domain.
  - Focus on categories that require point/nonpoint reconciliation since the EPA cannot do this reconciliation without state input. EPA will develop default point emissions data for subtraction for most nonpoint sectors that rely on it; however, the ICI tool requires point activity (fuel consumption) data and therefore, submitting an ICI input template is critical. These efforts will help prevent missing emissions or double counting of emissions.
- Reporting best practices:
  - Identify, as early in the process as possible, those nonpoint sources that are most important for your agency, and those that are likely to be most impacted by the unusual characteristics of year 2020.
  - Focus on ICI fuel combustion in particular. EPA does not have a current default methodology for subtracting SLT point inventory fuel consumption data, so it is critical to avoid potential ICI point/nonpoint double counting via submitting emissions or an input template. For agencies that do not cover the entire state, there will need to be either emissions submitted or a review of draft ICI tool estimates.

### 3.3.3 Mobile Inventories

The EPA will develop a document to clarify best practices for mobile input and inventory submissions. The EPA encourages the following best practices when submitting onroad/nonroad mobile data:

- Join the monthly MJO-MOVES Sessions for information of latest inventory development issues ([Register here](#)).
- Look for and follow posted directions on how to submit mobile inputs. Inputs are required for all sources in MOVES: all onroad vehicles and nonroad equipment. Reminder: MOVES nonroad includes inputs for producing airport equipment emissions (ground support equipment. Ground Support Equipment SCCs

are removed from the MOVES nonroad emissions estimates submitted to EIS because GSE estimates produced by FAA's AEDT model are superior.

- Submit both the required input data and any supplemental documentation, to help support and explain your input information. The EPA will provide instructions regarding how to provide any supplemental documentation prior to the July 2021 opening of the EIS submission window.
- States may submit county CDBs for just vehicle miles traveled (VMT) and vehicle population (VPOP); or they may choose to submit additional county inputs (e.g., age distributions, VMT fraction (by month, day, and hour), average speed distributions, hourly average speeds, starts, and hoteling).
- Best practices include (but are not limited to):
  - Pulling age distribution fractions from your state DOT mid-year to get an appropriate mix of older vs. newer vehicles.
  - Speed distributions should reflect AM and PM congestion peaks. Weekday distributions should **not** be the same as the weekend profiles.
  - If the VMT/VPOP ratio is too high (e.g., a rural county with little registered VPOP, but an interstate highway supplying high VMT), negative emission factors can result. Care should be taken to increase the VPOP to ensure good model results.
  - VMT fraction should vary by vehicle type and time of day, with peaks during high traffic times of the day.
  - State and local agencies do not populate their submitted CDBs with MOVES default data.

#### 3.3.4 Events Inventory

- Participate in planned workgroup meetings/conference calls.
- Submit activity data so that the EPA does not have to use default data to identify and estimate emissions from fires occurring in your domain. Important parameters include acres burned, fire perimeters, fuel loading, and fuel consumption; however, acres burned is the most important activity data to submit. The EPA relies on the default methods from satellite detections without more specific data. The importance of submitting activity data is especially true for prescribed fires, because the EPA methods have more difficulty in identifying which fires are prescribed fires to appropriately estimate the emissions. At this time, we expect that activity data for the 2020 NEI fires will simply be submitted via email to [Jeff Vukovich](#), and the EPA will provide directions if those plans change.
- Review draft NEI for EVENTS soon after it is available. Ensure that submitted activity data were used appropriately. Provide comments in the comment time period specified by the EPA.
- If an Agency decides to submit actual emissions (EPA discourages this process for EVENTS), provide documentation on the methods as much as possible either via comment fields in EIS or via an email to [Jeff Vukovich](#). Also, if an Agency submits emissions, ensure that the pollutant coverage is the same as what the EPA estimates using its methods. If emission factors are needed, please contact the EPA.
- Please plan on reviewing the draft estimates that will be provided by EPA and submitting appropriate comments. In addition, please work with EPA to submit and review your activity data as EPA processes them into emissions.
- Please inform EPA if you plan to accept EPA estimates at any time in the process.

#### 3.4 Expected and Allowable Pollutants and Conditional Exclusion of SLT data

SLT agencies have requested that EPA provide a list of expected CAPs and HAPs by process (SCC). Expected pollutants are those that EPA calculates using its own estimation methods. While other pollutants can be reported by SLTs, we would prefer that SLTs who have pollutants outside of the expected pollutants list contact

the NEI Team. Then, we can accommodate a complete list of emission factors to use, and pollutant coverage is consistent throughout the US.

We do not plan to add Greenhouse Gases (GHGs) to any expected pollutant lists even though we allow for their submittal in EIS. For the 2020 NEI cycle, the EPA will be starting with a similar list of expected pollutants for both point and nonpoint sources that we've generated in the 2017 NEI cycle. In general, when EPA generates emissions for a source, the expected pollutants are those that EPA estimates for those sources. While the list of allowable pollutants is a bigger set, submitting pollutants that are not expected could result in EPA tagging them out. Some new nonpoint SCCs are expected, and EPA will provide an [updated expected pollutant list from that used for the 2017 nonpoint NEI](#) by June 15, 2021, a couple weeks prior to the EIS submittal window opening on July 1, 2021. The current lists of expected pollutants will be made available on the [2020 National Emissions Inventory](#) website.

The reporting of criteria air pollutants (CAPs) is required under the AERR for all data source categories, while the reporting of hazardous air pollutants (HAPs) is not. However, HAPs are critical to complete the NEI, and will be supplemented by EPA if SLTs do not provide these data, and therefore, HAPs are also included in these lists.

An important note on expected pollutants: if you are **certain** that a process does not have emissions for an expected pollutant, then you are encouraged to submit a zero value for that pollutant; do not leave it as "null". Otherwise, a non-zero value could be picked up via EIS HAP or PM augmentation (generally on SLT-submitted VOC, PM or SO<sub>2</sub> values), or another lower-hierarchy dataset. **However, EPA may tag out your zero value if the expected pollutant was reported to TRI.** For nonpoint sources, if you are submitting emissions (not Input Templates -see Section 7.2.6) you also need to select "No" in the Nonpoint Survey to prevent EPA data from gap-filling non-reported (null) SLT data.

An SLT's data submittal completeness status will be independent of HAP emissions submittals, which are voluntary. But, the SLT data will be augmented with EPA estimates of HAPs using EPA augmentation procedures. The scope of the expected pollutants list depends on the data category. Each data category is discussed in the following subsections.

### 3.4.1 Point

For point sources, the expected pollutants list indicates where other agencies have reported non-trivial amounts of a pollutant for each SCC, based on the following criteria. This list is not used in any of EPA's QA review of point sources.

1. The SCC contributes at least 0.1% of the total national emissions for that pollutant, and includes an existing emissions factor (e.g., AP-42), OR
2. The SCC contributes at least 0.01% of the total national emissions for that pollutant, and 75% of the processes using that SCC reported that pollutant (with a minimum sample size of 3 processes), and the SCC does not include a nebulous catch-all "Other" or "Miscellaneous – NEC" in the description;
3. For fuel combustion SCCs, we include the same pollutants across all related SCCs for the same fuel.

SLT-submitted pollutants that are not in the expected pollutants list for point sources will be used in the NEI. However, we may tag out pollutants which are clearly not expected, but also nonsensical, such as VOC or NO<sub>x</sub> emissions from rock crushing SCCs.

EPA will add HAPs to facilities where they are not reported by SLTs. First, by first using the TRI-reported data and second by relying on SLT-submitted VOC or PM values via HAP augmentation. EPA may use other sources of data, where available, including carrying forward previous-year data for gap filling. The database supplying the

HAP augmentation factors is contained in the EIS Gateway. This database is updated based on comments from the NATA reviews, and may be further updated if new factors become available or if errors are found. SLTs should use their existing emission factors, or preferably source tests (those done prior to the submittal deadline), and not rely on EPA’s HAP augmentation dataset for inventory construction. The version of the HAP augmentation database to be used for the 2020 NEI will be finalized by 1/15/2022. As with the 2017 NEI, SLT-reported chromium will be speciated into chromium (VI) and chromium (III) using chromium speciation factors provided in the HAP augmentation database. There is no need for S/L/Ts to attempt to replicate the EPA augmentation processes in their own submittals, and that practice is strongly discouraged due to inefficiencies, potential for errors, inability to include late-breaking factor corrections, and total loss of transparency and traceability of the actual source and lesser pedigree of the augmentation values. Just don’t do it.

### 3.4.2 Nonpoint

One of the goals in developing the NEI is to have a harmonious picture of the air pollutants in the nation for a particular inventory year. To create this cohesiveness, EPA must treat data consistently when emissions submitted by SLTs looks significantly different in comparison to the rest of the data. Because EPA creates estimates for many nonpoint sources and has a rule of thumb for comparison purposes, we also created a set of business rules for EPA to determine what data to select for the final NEI.

For the 2020 NEI, we are using the following set of business rules, first adopted for the 2017 NEI.

**Table 3-7: Nonpoint Inventory Business Rules**

Item	If an agency submits...	EPA will ...	Unless...
1	Emissions that exceed EPA expected outlier check values	Use EPA estimates in lieu of SLT data	State provides supporting material on how the emissions were estimated, including activity and emission factor details where available
2	Pollutants not in expected pollutant list	Remove these pollutants (e.g., VOC from road dust, metals from evaporative processes)	SLT provides documentation on these unexpected pollutants
3	VOC but no HAPs	Run HAP augmentation off of the SLT-submitted VOC, and this data will take precedence over any EPA tool data	The VOC submitted falls outside of EPA’s expected outlier check
4	Total VOC-HAPs > VOC (the sum of all of the HAPs that are VOCs adds up to more than the submitted VOC value)	Remove all state submitted VOC-HAP data and instead, use HAP augmentation off of the SLT VOC value	
5	VOC and different VOC-HAPs than our expected pollutant list	Gap fill using HAPs generated by HAP augmentation off the SLT VOC value	The sum of VOC-HAPs adds up to more than the VOC value; (see 4 above); in this case, all SLT HAPs will be removed and replaced with HAP augmentation off the SLT VOC value
6	An incomplete set of expected criteria pollutants	Supplement using EPA tool data for the pollutants that are not submitted	SLT provides documentation to why those emissions should not exist

Item	If an agency submits...	EPA will ...	Unless...
7	VOC data for different SCCs, but similar process characteristics to what EPA uses	EPA will augment VOC-HAPs with similar profiles	State also submits HAPs with that VOC

For item 1, regarding emissions greater than outlier checks, the intention is to prevent inconsistencies when looking at the nation as a whole and which may be due to calculation or data entry errors. EPA will initiate a dialogue with reporting agencies where submitted emissions exceed expected ranges, particularly for rapidly changing sectors, such as oil and gas. These outlier checks will be based on county-SCC-pollutant level statistical analysis of the EPA estimates generated from the 2017 NEI. Supporting documentation requirements are not intended to be onerous. Rather, these can allow EPA to get confirmation from SLTs who intend for significantly larger than expected emissions to be included in the NEI. This may also help inform EPA’s tools, and can allow EPA to revise the outlier checks where needed. Outlier limits can be found by pollutant/SCC combinations in EIS under Reporting Code Tables, Emission QA Values.

Item 2, regarding unexpected pollutants, is intended to prevent inconsistencies or incongruent data from showing up in the inventory. Sometimes an agency submits pollutants which no other SLT agency reports, and this may appear as an anomaly on the map for a particular pollutant when looking holistically at a source category. For example, one state agency reported lead as a pollutant from commercial cooking. While this may be a real pollutant from the restaurant griddles, it also may be a mis-assigned SCC or pollutant code. In any case, if EPA deems it an “unexpected pollutant,” EPA may not have a good emission factor or may not have the data to support that a certain pollutant is part of a source category. In these cases, when comparing the EPA dataset to SLT datasets, a hotspot may show up, highlighting the submitting state, in this example, that state would be the only place in the country where lead was being emitted from restaurants.

Furthermore, SLTs are usually discouraged from utilizing AP-42 emission factors (outside of the expected pollutants for that source category) to estimate emissions for submission to the NEI. The exception to this rule would be those sources for which EPA does not provide estimates. The reason here is that the EPA estimates (Wagon Wheel or otherwise) often include emission factors that are updated from those in AP-42, and EPA ensures that these factors are consistent with the HAP augmentation factors in EIS. By letting EPA HAP augmentation generate HAPs (based on SLT-submitted VOC or PM25-PRI emissions), we ensure complete and consistent HAP coverage. The exception would be if you have improved emission factors for your estimates.

The expected pollutants list for all 2020 NEI EPA estimates will include HAPs and CAPs for which EPA will gap fill if these emissions data are not submitted by the SLT agencies. If EPA does not estimate emissions for a particular source type, there will be no expected pollutants list for comparison. EPA acknowledges that those source categories that are not estimated on a national basis are not well-assessed by EPA at this point in time.

For the expected pollutants list, all pollutants for each nonpoint SCC are provided. We will map expected pollutants to most active SCCs in sectors where EPA estimates exist for other like process/fuel SCCs based on data in the existing EIS HAP Augmentation table.

Item 3, regarding VOC submitted without their corresponding HAPs, is straightforward. The goal is to fill in missing HAPs in the inventory where EPA expects them to exist, but they were not provided by the submitting agency. HAP augmentation on SLT-submitted VOC will be used when it does not exceed the outlier check and VOC is reported but VOC-HAPs are not. Item 1 would apply where the outlier check is violated.

Item 4, regarding VOC-HAPs summing to greater than VOC, is the broad check for where the sum of all SLT-submitted VOC-HAPs must be less than SLT-submitted VOC. EPA is conducting this analysis to prevent nonsensical data, since the parts should not add up to more than the whole. If a violation occurs, SLT-submitted VOC is retained, but all SLT-submitted VOC-HAPs are not used (tagged out) and replaced with HAP augmentation VOC-HAPs after scanning for obvious outliers.

Item 5, regarding different HAPs being reported than EPA's expected pollutants, builds off item 4 in complexity. This deals with the messy scenario where we end up with a mix of SLT-reported VOC-HAPs and VOC-HAPs from HAP augmentation. Like item 4, the intention is to prevent nonsense data where the parts sum up to more than the whole. This happens when SLTs submit VOC and some but not all expected VOC-HAPs, and HAP augmentation, based on SLT-submitted VOC, is used to "gap fill" the remaining unreported VOC-HAPs. It is understandable that SLTs may only have emission factors for some VOC-HAPs and that the method may be different from the VOC emission factor. However, air quality modeling based on the NEI assumes a level of VOC-HAP to VOC mass closure. Therefore, if SLTs do not want EPA to generate "missing" VOC-HAPs, they should submit emissions for VOC-HAPs that are in the expected pollutants list. SLT could submit zero emissions if these pollutants are not emitted from these processes in a particular area due to controls, bans or other location-specific information.

Item 6, regarding missing criteria pollutants, is intended to provide a cohesive inventory; for example, if NO<sub>x</sub> is not submitted for a combustion category, EPA has the need to gap fill. This rule is simply a reflection of how the NEI has been built in the past: SLT data takes precedence over EPA-submitted emissions. If EPA data exist for pollutants that SLTs do not submit, then EPA data "gap fills" and appears in the NEI selection. If SLTs do not want EPA data, which are in the expected pollutants list, to appear in the NEI, SLTs have a couple options:

1. Submit emissions, which could be zero if these pollutants are not emitted from these processes in your jurisdiction for these "expected" pollutants, to ensure EPA emissions data do not appear in the NEI, or
2. Contact EPA to request removal (tag-out) of EPA emissions for these pollutants, if they are not emitted.

Option 1 is more automated and easier to track. This item is most important for CAPs and "high risk" HAPs. Option 2 has been the standard approach in previous NEI cycles; however, it complicates QA and has led to numerous errors in the past.

Item 7, regarding running HAP augmentation on similar SCCs to those for which EPA has profiles, is also intended to fill missing pollutants in the inventory and has been standard procedure in previous NEI cycles. Where SLTs report emissions for SCCs that EPA does not estimate, EPA data will be used if SLTs do not report all pollutants, and this goes beyond just HAP augmentation for VOC-HAPs (for example, EPA will gap-fill missing NO<sub>x</sub> from nonpoint ICI fuel combustion submitted by SLTs).

Voluntary reporting for HAPs, particularly, VOC HAPs, gets complicated for some nonpoint sources where EPA provides tools that include point source (inventory) emissions subtraction. For example, the Solvent tool only subtracts point inventory CAPs for some sources, and not VOC HAPs, when choosing to subtract point emissions and not activity data. The Solvent tool in this case will compute nonpoint VOC via point subtraction of emissions, and then, new for the 2020 NEI, EPA will then use HAP augmentation in EIS to compute nonpoint VOC HAPs. The reason EPA built the Solvent tool to not subtract VOC HAP point emissions is because the material balance for point subtraction (reconciliation) is ideally based on activity/throughput of the material being balanced. Emissions, or emission factors, from any source, have no validity in such a material balance. SLTs are free to

recompute their VOC HAP emissions for nonpoint solvents, and so long as these VOC HAP emissions satisfy the checks discussed above, they will be accepted.

None of these business rules impact what is stored in the EIS for each SLT agency--only what will appear in the NEI selection. EIS reports run off SLT datasets will still capture what SLTs submit. However, as is standard practice, the final 2020 inventory will reflect a converged set of data, with EPA tool data, SLT submitted data, and augmentation datasets included.

### 3.4.3 Mobile and Events

Onroad and nonroad expected pollutants are the CAPs and HAPs generated by MOVES. For the state of California, the EPA uses onroad emissions provided by California based on their emission factor (EMFAC) model.

The expected pollutants for the EVENTS category are those that we estimate in EPA's methods. It is expected that this list will remain the same as it was for the 2017 NEI. That list can be found in Section 7 of our [2017 NEI TSD](#).

## 3.5 How should I make corrections if EPA or I find a mistake?

EPA inventory developers will work with SLT agency staff to provide feedback on their data and allow corrections on a case by case basis. We recommend that SLT agencies first submit their corrections to the EIS "QA Environment" and ensure they receive a clean feedback report prior to submitting corrections to the EIS "Production Environment."

Make sure to submit the entire suite of pollutants for a county SCC combination! Submitting only one pollutant erases the entire set of pollutants for that county SCC.

A common issue with previous NEI submissions has been SLTs needing to remove previously submitted emissions. In the past, EPA has been able to remove "tag out" these emissions at SLT request, or SLTs have submitted a single unexpected/unimportant pollutant with zero emissions to remove these estimates. However, with the new schema changes outlined in Section 4.1.4, we will direct SLTs to use the Bridge Tool or XML submittal options for removing their undesirable emissions.

## 3.6 Why has EPA eliminated wholesale data replacements?

EPA inventory developers do extensive QA on data received by the submission due date. Allowing wholesale replacements, or initial submissions long past the original due date, causes EPA staff to run the complete QA procedure on all data again. This process delays the NEI release, increases EPA's use of resources, and does not provide the benefit of the draft review and correction process described above. This change emphasizes the importance on the end of the submission grace period: January 15, 2022 for point, mobile and event sources and, as discussed in Section 7.2.1, March 31, 2022 for nonpoint sources. It is essential that SLTs meet the submission deadlines with their best data so that the QA review and correction process can proceed.

# 4 EIS Codes and Schema

This section examines planned EIS code and feature changes that are used in the NEI development. Known county FIPS code changes in Alaska will be implemented for the 2020 NEI after the 2019 Point inventory submittal window closes in January 2021.

## 4.1 EIS Reporting Codes and Schema Changes

EIS code tables that will be updated are listed below. We encourage inventory developers to download the latest version of the reporting code tables directly from EIS on November 1, 2020. Any further changes to codes



after December 2020 will be distributed to SLT inventory developers every 2-4 weeks during the 2020 NEI development cycle via the existing NEI/EIS listserv. Contact [Rich Mason](#) if you are not on this listserv.

#### 4.1.1 Source Classification Code (SCC) Changes

EPA updates the list of active SCCs in collaboration with inventory developers and regulatory actions. EPA refers SLT inventory developers to check the “Last Updated Date” in the EIS Source Classification Code List, or the publicly-available [EPA SCC Search site](#). Both sites are refreshed nightly. EPA will need to create new SCCs when new inventory categories are developed, like agricultural silage, and will retire SCCs for various reasons. These may include:

- Technology is in the SCC list but is included in an SCC that is too broad, and the process in question is very unique, specific, and has a distinct emission factor and is being reported to other codes in an inappropriate way. This indicates the need for a new code or codes and potentially retiring the broad SCC.
- Technology is obsolete and the code has not been used for reporting in one or more previous inventory years. This indicates the need to retire the code.
- The code may be redundant. Is there another code that is essentially the same? If so, which one should be retired and why?

EPA will provide, by November 1, 2020, a list of active and proposed SCC changes since the 2017 NEI was finalized.

- a. All data categories: EPA will review the SCC level 2, level 3, and level 4 descriptions for unique structure. While the overall 8 or 10-digit SCCs and descriptions are not proposed to change, we could rename or rearrange these level descriptions to preserve the hierarchal nature of the level 2 and level 3 descriptions.
- b. Point: There have been several changes to SCCs during the 2017 NEI development process; several of these changes occurred after the release of the final 2017 NEI Plan.
- c. Nonpoint: We do not anticipate needing to retire any active nonpoint SCCs for the 2020 NEI. Other than a few new SCCs generated for new EPA estimate categories or methodologies (e.g., ag silage and some solvent processes), there are no widespread SCC retirements or additions planned for the 2020 NEI. However, the Oil and Gas team might consider retiring some overly broad/generic SCCs prior to the submittal window opening.
- d. Events: No new SCCs are expected, unless a decision is made to move from Bluesky Framework to Bluesky Pipeline models. See Table 2-4 for further details.
- e. Onroad: No new SCCs are expected.
- f. Nonroad: No new SCCs are expected.

#### 4.1.2 Pollutant Codes

- a. Recent efforts to incorporate test data from regulations into EIS have resulted in the need to revisit the current pollutant codes. The rule data require a more expansive list than the current EIS list. To allow future selections to include these data, we may make changes to the pollutant table. Discussions are currently underway on which changes will be needed to support rule data and if these will affect agency submissions. These changes would result in additional pollutant codes and would not result in retiring any pollutant codes.
- b. New pollutants per- and polyfluoroalkyl substances (PFAS). We will use the TRI [list](#) for their 2020 reporting year and their pollutant type and pollutant category name is (“PFAS”) – they are not HAPs. SLTs will be able to report these and we will also use the TRI data to gap fill. Note: EPA will not accept a

total PFAS value; however, EPA would like to know if SLTs have information on facilities that emit PFAS that are NOT in the TRI database (to be released in the summer of 2021). EPA will provide PFAS emissions by facility (stack and fugitive) from the TRI data release when they become available.

- c. Eighteen (18) Glycol Ether pollutants are no longer classified as HAPs and are now classified as null, pollutant type is blank. These pollutants did not meet the CAA definition of glycol ether established by the final rule “Redefinition of Glycol Ethers Category under Section 112(b)(1) of the Clean Air Act and Section 101 of the Comprehensive Environmental Response, Compensation and Liability Act (40 CFR 63)”. We chose to allow agencies to continue reporting these to prevent unimportant EIS error messages; however, these 18 pollutants will not be selected for the 2020 NEI because they are not HAPs. The only null pollutant types to be selected for the 2020 NEI will be hydrogen sulfide, tert-butyl acetate and the PM species and diesel PM pollutants listed below.
- d. New pollutant “N590” representing polycyclic aromatic compounds, a pollutant reported for TRI that represents 25 specific PAH compounds (see “Appendix 1 - Cross dataset selecting rules”, item 8, Note 3, for the list on the [2020 NEI Plan website](#)).
- e. New pollutant 106945, 1-Bromopropane, also known as n-propyl bromide is added. This pollutant is not currently a HAP and therefore, the pollutant type is “OTH” (other). If EPA adds it to the list of HAPs during the 2020 reporting cycle, we will change the pollutant type to “HAP” and will notify SLT developers of this change.
- f. For the 2014 NEI, we added five PM2.5 species: EC (elemental or “black” carbon), OC (organic carbon), NO3 (nitrate), SO4 (sulfate) and PMFINE (remaining or “crustal” PM) and two diesel PM species to the NEI that are generated only by EPA through PM speciation. All of these pollutants will also be in the 2020 NEI, but as with 2014 and 2017, they cannot be reported by SLTs as they are generated by only EPA and via EIS PM speciation.
- g. Extractable Organic Matter (EOM): this pollutant was re-retired during the 2017 cycle and will remain retired. We retired it because it was intended to be used only where emissions are derived from compliance testing<sup>1</sup>. We found that instead it was used at coke oven processes (battery charging, battery lid, offtakes and door leaks). If SLT have compliance test data based on EOM they could report it as PAH, total (pollutant code 130498292). Pollutant code 140 (coke oven emissions) should be reported at coke oven processes.

While the above is the extent of known retired and additional codes, new codes for these and other EIS datasets may be added later in the year if deemed necessary. No codes will be retired after the publication of this revised plan.

### 4.1.3 CERS Schema Changes

Effective with the 2020 NEI reporting cycle, the CERS schema will be updated for the first time since it was introduced. An XML schema is a description of a type of XML document, typically expressed in terms of constraints on the structure and content of documents of that type, above and beyond the basic syntactical constraints imposed by XML itself. For EIS, we have very few data constraints in the schema definition so ours basically defines the structure.

The changes impact primarily the Facility Inventory data category. Most of the changes involve adding optional alternative ways of reporting some existing data. Examples include fugitive release locations, 3-dimensional

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<sup>1</sup> EPA has developed several rules (including primary and secondary aluminum) for which this pollutant is required to be reported in compliance testing and these compliance data will be used to develop emission factors. EOM is typically measured using EPA Method 315 and is one component of EPA Method 202. It is conservatively considered an indicator of polycyclic organic matter, which is a listed hazardous air pollutant.

fugitive sources, and new controls pathways. The older methods and fields for reporting that data will still remain with the exception of controls. The “controls” portions of the schema have been entirely reworked, such that adding or updating control information via a batch xml submittal will require SLTs to update their xml creation exports, if used. USEPA will be updating the Bridge Tools by September 1, 2020 to support the schema changes but SLTs importing controls fields to the Bridge Tool from SLT databases will still be impacted. For those using the CAER interface, the new schema will be supported via that option.

More complete details on the proposed CERS schema changes for the 2020 NEI can be found on the [EIS User's Manual and How Tos site](#). EPA finalized the proposed changes in May 2020, and will implement the changes in EIS for testing purposes by October 2020 with full EIS implementation by the end of January 2021.

#### 4.1.4 Ability to delete specific emissions for specific reporting period

This new EIS feature is aimed at allowing SLT and EPA inventory developers to remove either select pollutants or all pollutants for given reporting period (process). For example, an SLT submits nonpoint emissions for a process and then later decides to submit input data and use the available EPA tools to generate estimates. Because SLT emissions are taken in precedence over EPA estimates (lower in the selection hierarchy), the SLT must currently submit emissions for a single “dummy” pollutant to null out the SLT emissions for all other pollutants at that process/reporting period. The EIS will be updated to allow a batch utility deleting function (all locations for a given reporting period), and also for the ability to do the same function in the EIS Gateway for a single process/reporting period.

## 4.2 Pollutant group business rules to prevent double counting of overlapping pollutants

For the 2020 NEI, we will again apply the business rules developed for the 2017 NEI to allow different datasets in a selection to be blended together. Doing so avoids double counting from overlapping HAPs. There are several HAPs that belong to pollutant groups or represent a pollutant group itself. Therefore, EPA has developed a set of business rules to prevent both individual and groups of pollutants from different sources being present in the inventory at the same process or facility. For some pollutants, the rules apply both within an individual dataset (when SLTs submit) and across datasets (when they are blended). Others apply only to cross-datasets. For example, a rule that applies only to cross datasets is for PAHPOM code 250. This pollutant can be submitted with other specific PAHs in an individual dataset but cannot be combined with any PAH across datasets. A rule that applies to both within agency and cross agency datasets is PAH, total, code 130498292. This pollutant cannot be reported at the same process with any individual PAH within a dataset. It also will not be selected across datasets if it is from a lower priority dataset in the selection hierarchy.

Changes to the pollutant group business rules made during the 2017 cycle that will apply to 2020 are as follows:

- The within dataset restrictions for xylenes and cresols are dropped. SLT can submit any combination of individual xylenes with mixed xylenes and can provide any combination of individual cresols with mixed cresols.
- A new cross-dataset rule was added for CN/HCN. SLT will still be able to report CN, HCN or both at the same process. However, during the selection, if CN or HCN is present in SLT data, then neither of these pollutants will be picked up from any other dataset.
- Extractable organic matter is no longer a valid pollutant and therefore is removed from the PAH pollutant grouping rule.

A complete list of these business rules are provided in “Appendix 1 - Cross dataset selecting rules”, item 8, Note 3, for the list on the [2020 NEI Plan website](#).

### 4.3 EIS QA Checks

A list of QA checks performed on data submittals can be found in the [Emissions Inventory System Gateway](#). The following QA checks are not yet implemented but will be prior to the 2020 submittal window opening on July 1, 2021:

The following new QA changes are in place, or will be in place, for the 2020 NEI cycle.

1. **Additional Critical QA Checks**
  - a. New requirement for reporting “heat values” when SLTs report events inputs -see Section 9.2.
  - b. Existing QA check numbers 2361 and 2362 (which compare the sum of filterable PM plus condensable PM is equal to primary PM for each PM size) will become critical checks rather than just warnings. Note: EPA PM augmentation routines are designed to limit valid SLT submitted data. For example, if submitted filterable PM10 (PM10-FIL) and primary PM10 (PM10-PRI) are equal, then condensable PM (PM-CON) will be computed as zero.
  - c. Reported stack velocities or flowrates/diameters resulting in stack velocities that exceed 1200 ft/s will be critical errors. This was changed from 1500 ft/s.
2. **Additional Warning QA Checks.** There are no new warning checks.

The remaining changes pertain only to fires in either/both the Nonpoint and Event data categories:

3. **Check for Valid Emission Calculation Method Code (Critical)** –For SCCs, 2810001000; 2811015000; and 2811020000, data-submitters must use the Emissions Calculation Method Code, 40; 41; or 42. This is a data-driven QA check, and thus if there aren't any SCC marked as needing the value, then the check will never fire.
4. **Check for Present Event Staging Code (Critical)** - Event Staging Code has been raised to a “critical” check, making this data field required.
5. **Ensure Activity Values are Reported (Critical)** – For all SCCs with a Tier 3 description of Agricultural Fires, the following EIS fields are required: Calculation Parameter Type Code (I), Calculation Parameter Value (number of acres burned), Calculation Parameter Unit of Measure (Acre), and Calculation Material Code (111-Fire).

## 5 EPA Completeness Feedback

The EPA will start a new version of completeness reports during the 2020 NEI cycle. SLT agencies will be able to run completeness reports in EIS at any time during the 2020 cycle, and EPA will send a reminder of these completeness reports about a month before the submittal window closes. Reports will include both mandatory data as per the AERR as well as voluntary data like submittal of activity inputs for mobile and nonpoint sources. Based on the EIS reports, EPA staff will compile summary reports akin to that shown in Table 5-1 below. We will not be developing a formal completeness report for Events as their submittal is voluntary. However, we will include a thank you to those agencies that submit timely and useful emissions, activity input data, and/or approval of EPA draft estimates.

After the NEI submission deadline and grace period, the EPA will notify regional offices and state/local Air Directors as to the status of the state/local submission. Allowing SLT agency staff to run these reports themselves will provide SLTs with the greatest possible time to address any incomplete findings in advance of EPA’s notice. SLT agencies will only be able to see completeness reports for their own agency and delegated

agencies. The targeted dates for the notices to Regional Offices and Air Directors are also provided in Table 2-2 through Table 2-5, above.

The completeness checks will be based on the following criteria:

Point:

1. Check that all facilities with an operating status of OP (Operating) have been reported. This can be done using the Agency Submission History Report available on the EIS Gateway. If a facility has closed or is no longer reporting, agencies should update the facility status.
2. Check that all expected criteria pollutants have been reported by facility.
3. We are considering acknowledging voluntary HAP reporting but have not yet developed metrics for completeness.

Nonpoint:

1. Completion of a nonpoint survey.  
This survey should be very similar to that used in the 2017 NEI, which has only one question. Should EPA supplement the SLT *emissions* submission or not? This question can be answered at the level of: 1) the entire nonpoint data category, 2) for all SCCs in a particular EPA tool/database, or 3) an SCC-by-SCC basis. The reasons for not supplementing SLT data with EPA data would be:  
1) SLT does not have this type of source (i.e., no coal fired residential boilers),  
2) SLT completely covers this category in their point submittal (i.e., gas stations are all covered in point in the state of Colorado), or  
3) SLT uses a different SCC that covers the same process covered by the SCC used by EPA that also covers additional processes (e.g., composting under SCC 2680002000 where this SCC covers both green waste, which EPA methods cover, as well as other materials being composted).  
In addition, there is a 4<sup>th</sup> option “Supplement only at reported location -SCCs” is where EPA data will only supplement pollutants where SLT reported some but not all expected pollutants at a given county and SCC but will not supplement where SLTs reported no data (pollutants). See Section 7.2.6 for more details.
2. List of Input Templates submitted.  
This will provide a list of Wagon Wheel Input Templates submitted and flag where the Nonpoint Survey is submitted as “No” and Input Templates are submitted.
3. ICI (nonpoint) status.  
An agency must submit either nonpoint ICI emissions or an Input Template for all nonpoint ICI sources. Simply submitting “No” in the Nonpoint Survey for the entire suite of ICI SCCs without an emissions submittal is not acceptable.
4. Percent of completeness is based on SCC/expected CAPs.  
Voluntary HAP data submission (or acceptance of EPA data) is encouraged where available; however, a lack of HAP data will not count against a completeness percentage. These checks will be available via a Completeness Report function on the EIS Gateway.

Onroad/Nonroad:

1. Completeness is based on an agency either submitting inputs or accepting EPA estimates. For the 2020 NEI, we plan to develop a list of key MOVES inputs required by the AERR for each agency.

The table below provides an example feedback table that would be compiled from the EIS completeness reports and included in the letters to the Air Directors. Ongoing work to resolve the details on the final feedback letter may change this example.

**Table 5-1: Draft Example Feedback Report for 2020 NEI**

<b>Data Category</b>	<b>Status</b>	<b>Completeness Level<sup>1</sup></b>	<b>What to do</b>
Point sources	<Percent of operating facilities reported> (Goal: 100%)	162 of 165 submitted all expected pollutants	Report remaining facilities or indicate facility shutdowns. Report all expected criteria pollutants for reported SCCs or correct SCCs.
Nonpoint sources	<Nonpoint Survey Status>	Partial, with error(s): 24 of 28 categories submitted, 1 Error: Road Dust	Reconcile Road Dust in Nonpoint Survey: Input Template submitted but Nonpoint Survey="No". Also, complete Nonpoint Survey for remaining source categories.
	ICI: Input Template or Emissions submitted	Not Submitted	Submit ICI Input Template or emissions
	Emissions Submittals complete where submitted	100%	None; EPA will use HAP augmentation to gap fill missing expected pollutants
Onroad mobile sources	County data base (CDBs) tables submitted	100%	SLT submits CDB tables for all counties or accepts EPA default activity data
Nonroad equipment sources	County data base (CDBs) tables submitted	100%	SLT submits CDB tables for all counties or accepts EPA default activity data

<sup>1</sup> For emissions submittals, based on expected SCC/pollutant combinations for pollutants required by the Air Emissions Reporting Rule.

## 6 Point sources

### 6.1 Overview

Air agency point source data are the predominant source of point source data in the NEI. Point source reporting includes both the “facility inventory” and “emissions” as separate reporting steps. Each has their own set of tables defined for electronic reporting. The following subsections provide a road map to the requirements from the AERR and the best practices for submitted data. Additional subsections provide specific information on point-source specific practices for the 2020 NEI. This also discusses how EPA intends to include GHG emissions for 2020 and the treatment of fugitive release point parameters in EIS for modeling.

As in past NEI cycles, the EPA intends to augment state point source emissions when needed. These procedures are explained in the technical support document (TSD) of the 2017 NEI. There are two types of augmentation: 1) using state-submitted emissions to estimate non-reported pollutants, and 2) using other datasets to add emissions. The first type includes PM augmentation (e.g., estimating condensable PM if only primary is reported), HAP augmentation (applying factors to ratio HAPs from state-reported CAPs) and chromium

speciation (estimating hexavalent chromium and trivalent chromium from state-reported unspicated chromium). HAP augmentation profiles may be updated during the 2020 cycle. More specifically, EPA will work on adding more profiles based on the SPECIATE database as an additional source of HAP to CAP ratios. Any SLT data that does not meet the submittal deadline may not be augmented and therefore may be incomplete in the NEI.

The second type includes the use of data from the TRI (also explained in the 2017 TSD, and Section 6.4 in this document for more details). There may also be situations where we use other EPA datasets such as data originating from an information collection request for regulatory efforts. These may be used ahead of state emissions or for gap filling where these data are collected.

## 6.2 Inclusion of Greenhouse Gas Emissions for Point Sources

The 2014 NEI included emissions for some Greenhouse Gases (CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O) in some data categories (onroad, nonroad and events). For point sources, EIS has included an emissions data set containing the point source GHG (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and SF<sub>6</sub>) emissions as reported by facilities to the EPA [GHG Reporting Program](#) (GHGRP) beginning with the 2013 emission year. These GHGRP emissions were not included in the 2014 NEI but were included for the 2017 NEI for those four GHGs in the published NEI. We plan to do the same for the 2020 NEI. The primary source of the selected GHG data will be the direct facility reporting to the GHGRP. We will also use SLT reports of the same four GHGs if they have been reported for facilities which do not appear in the 2020 GHGRP data. We expect that any such SLT reports which are so used will be for smaller emitters of GHGs, given the reporting requirements of the GHGRP. We will use the GHGRP data preferentially over SLT-reported data because the GHGRP data is required of the facilities, the calculation procedures have been prescribed by regulation, and the facility-reported data is reviewed by the EPA GHGRP. As such, the GHGRP data is EPA's authoritative source of GHG emissions for those facilities. Note that we are not requiring SLTs to report GHGs to EIS for any facilities, but we plan to include any voluntarily reported SLT point source data in the NEI if it appears to be valid and if we do not have any GHGRP data for that facility.

For 2020 we plan to use as a minimum the facility-level totals for each of the four GHGs. We will investigate using unit-level emissions for CO<sub>2</sub> where they are available from the EPA CAMD emissions reporting system. We will store the facility-level non-biogenic CO<sub>2</sub> emissions as reported to the GHGRP, along with the CH<sub>4</sub>, N<sub>2</sub>O, and SF<sub>6</sub> emissions. Biogenic CO<sub>2</sub>, which is reported as a separate element to the GHGRP, will not be included in EIS or the NEI. As with the earlier years, we will convert the values as published on the [GHG Reporting Program Data Sets](#) website from CO<sub>2</sub>-equivalent mass to actual mass, for consistency with the rest of the NEI and its applications. The conversion factors used for 2017 were obtained from Table 1 of the IPCC's Fourth Assessment Report<sup>2</sup>, per the documentation given on the [GHG Reporting Program](#) web page.

A crosswalk of which GHG facility IDs correspond to which EIS Facility IDs is available for the purposes of writing the GHGRP emissions values into EIS. The GHGRP facility IDs are stored as Alternate Facility IDs for each EIS facility. These Alternate Facility IDs can be seen on the EIS Gateway screens for a particular facility, or a bulk report can be obtained from EIS by using the Facility Configuration reports, Alternate Facility IDs, and filtering for Program System Code = "EPAGHG". In some cases, more than one GHG facility was matched to a single EIS facility ID. In those cases, the sum of the multiple GHG facilities will be written to the EIS facility. Based on the 2017 reporting year, 95 percent of the total CO<sub>2</sub> reported to the GHGRP is matched and stored to an EIS facility.

We will review the 2020 GHGRP facility summary file when it is available and then update the EIS crosswalk for any additional facilities which can be matched with reasonable certainty. We do not plan to add GHGRP facilities

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<sup>2</sup> 25 for methane, 298 for nitrous oxide, 22,800 for sulfur hexafluoride

that cannot be readily matched as new EIS facilities, based upon the limited additional GHG emissions that would be accounted for by these facilities and the increasing possibility that the facility may be accounted for in EIS in some fashion by S/L emissions submittals, whether as point, non-point, or non-road sources.

The largest reporters of CO<sub>2</sub>-equivalent that cannot be found in EIS are underground coal mines. These sources can emit enough methane to surpass the GHGRP minimum thresholds while having low criteria air pollutant emissions. We do not plan to attempt to calculate GHG emissions for EIS facilities where we have neither a GHGRP value nor a SLT value. Combustion CO<sub>2</sub> emissions might be reasonably estimated if provided a valid annual fuel throughput. However, we do not believe that the EIS-reported fuel throughputs should be relied upon without significant new QA review, particularly for the smaller combustion sources that would not already be matched to a GHGRP facility. An augmentation of CO<sub>2</sub> or CH<sub>4</sub> emissions based upon a ratio to NO<sub>x</sub>, CO, or other EIS-reported criteria emissions could be extremely uncertain given how much larger CO<sub>2</sub> emissions would be than the criteria pollutants and given variable ratios and sensitivity of the criteria pollutant estimates to controls or operational parameters.

We will look for SLT reported facilities with NO<sub>x</sub> emissions greater than some threshold where we would expect a GHGRP value, but none is available. EPA will contact the SLT for these occurrences to confirm whether the NO<sub>x</sub> values are correct.

EPA will not be adding any CO<sub>2</sub> emissions values not reported by either the facility directly to the GHGRP or by the SLTs to EIS. Note that the reporting of any GHGs by SLTs to the EIS is not intended to supplant the required reporting by facilities, and SLTs are not required to use the GHGRP protocols if they choose to report values to the EIS. SLTs should not report GHGs to EIS if they are concerned about those values appearing in the NEI. Any facility-reported GHG values to the GHGRP will be used preferentially before any SLT-reported values to the EIS.

### 6.3 Release Point characterization

With the new schema discussed in 4.1, there are additional options to represent stack and fugitive release points. In addition to the current approach of the circular stack, we added the ability for a rectangular release. Fugitives can now be characterized in several ways, including the current length and width option, a new end points option and a volumetric option. These approaches are detailed in the [schema document](#).

### 6.4 Quality Assurance of TRI vs SLT-submitted data

EPA's standard practice is as a starting point, to select SLT-submitted HAP data over TRI data, regardless of the completeness of the SLT HAPs submitted. To compile as complete a HAP inventory as possible, EPA has manually selected TRI data to supplement and/or replace SLT-submitted HAP emissions in previous NEI cycles to remedy the most obvious deficiencies. For the 2020 NEI, EPA will again analyze TRI vs SLT HAP data, and if possible, establish a more automated process for supplementing and/or replacing SLT-submitted HAP data.

EPA will load the 2020 TRI data into EIS when it first become available in the fall of 2021, and again when it is updated in the spring of 2022. SLTs can run EIS comparison reports against their submitted HAP data for their QA to look on their own at large differences between the two datasets and reconcile them prior to the final submittal deadline, if possible. If States do not think that their inventory process accounts for all significant sources of a HAP for a facility, then they should not report that HAP for the facility; i.e., do not allow auto-calculations to create records for just the processes and SCCs that happen to be in your auto calculate file. States should also not report TRI facility-level data as their own, because the EPA process will bring in that TRI data and maintain its identity.



## 6.5 State total fuel consumption throughput needed

The AERR has a requirement for submitting the activity data (throughput) information of point sources. This throughput is necessary to reconcile industrial (I) and commercial/institutional (C/I) fuel combustion in the nonpoint data category. If SLTs do not provide nonpoint throughput by fuel type (e.g., natural gas, distillate oil, coal) and sector (I versus C/I), then EPA will seek to obtain point throughput (and a valid Calculation Parameter Unit of Measure Code) by fuel type, and 2-digit aggregated NAICS code which will be used to assign the I vs C/I sector. More information on this request is in Section 7.2.4.

## 7 Nonpoint sources

### 7.1 Overview

Air agency nonpoint source data is an important source of data in the NEI, particularly for those nonpoint categories that have overlap with point sources. Nonpoint sources include (but are not limited to): fuel combustion categories; oil and gas production; industrial, commercial and consumer solvents; residential wood combustion; road and construction dust; and agricultural emissions sources. Though the use of the tools and input templates where available, is not a requirement, EPA provides these to aid SLT agencies in the calculation of their nonpoint emissions. The Wagon Wheel tool is a central MS Access tool which calculates emissions for most nonpoint categories that EPA estimates (with a few exceptions, like ag fertilizer, ag livestock, ag burning, and oil and gas) and will be used again for the 2020 NEI. The following subsections provide a road map to the requirements from the AERR and the best practices for submitted data. Additional subsections provide specific information on the nonpoint source-specific process for the 2020 NEI.

As in past NEI cycles, the EPA intends to augment state nonpoint source emissions when needed. The nonpoint tools that EPA develops also serve a secondary purpose: to provide fallback data for the EPA to use where SLTs do not submit adequate data to the inventory. Further, augmentation of SLT data also includes PM augmentation, HAP augmentation (factors to ratio HAPs from CAPs), and chromium speciation.

### 7.2 Nonpoint process for 2020

The 2020 nonpoint data category will be compiled in a similar manner as the 2017 NEI. We will again utilize the Wagon Wheel central database, an improvement to the process developed for the 2017 NEI, to house all inputs and calculate emissions for most nonpoint source categories. Unlike the 2017 NEI, we are **not** staggering the schedule for EPA estimates development and review. However, as shown in Table 7-1, we can provide suggested timelines for completing most categories, based on the estimated date of the most recent 2020 activity data used for each category. **Note that it is often uncertain when 2020 activity data will become available for some tools. With year 2020 being a US Census year, it is possible that delays could occur due to the added workload on the bureau.** Wagon Wheel default input data will remain year 2017 until it is refreshed with year 2020 data. 2020 is an abnormal year due to the pandemic, but we do not see any value in updating activity data to year 2018 or 2019 as a “fallback” while we wait for year 2020 activity data.

**Table 7-1:** Estimated availability for year 2020 (limiting) activity data for each Wagon Wheel category

Tool	Month	Year	Limiting data
Publicly Owned Treatment Works	March	2021	Population*
Agricultural Tilling	April	2021	USDA Ag Survey
Dust from Hooves	April	2021	USDA Ag Survey
Asphalt Paving	August	2021	FHWA Highway Statistics
Commercial Cooking	Late	2021	Hoovers restaurant data
Landfills	Late	2021	EPA LMOP Database

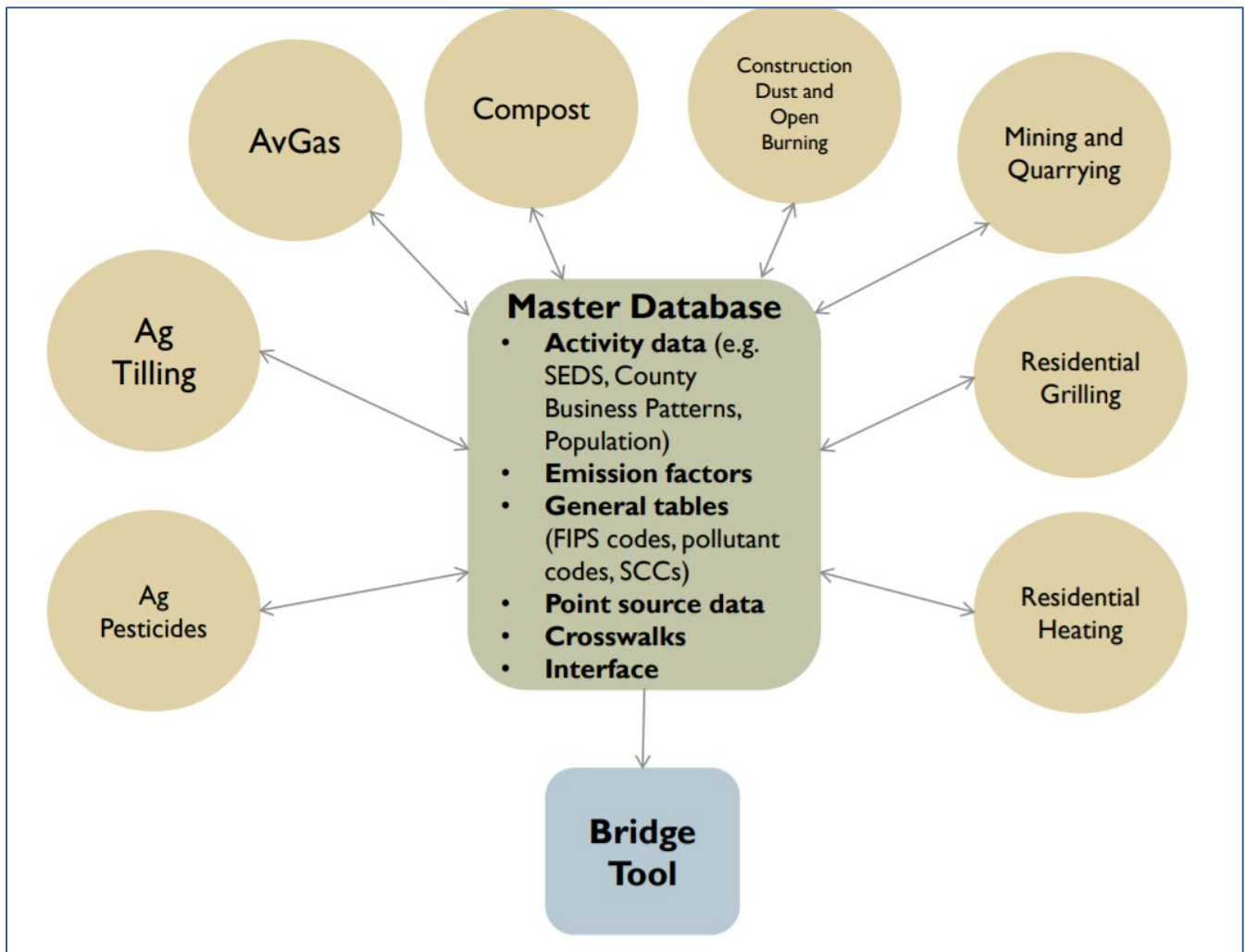
<b>Tool</b>	<b>Month</b>	<b>Year</b>	<b>Limiting data</b>
Residential Grilling	December	2021	American Housing Survey Housing Estimates
Construction Dust	March	2022	FHWA Road Construction Spending
Open Burning	March	2022	FHWA Road Construction Spending
Aviation Gasoline	June	2022	SEDS
Residential Heating	June	2022	SEDS
Residential Wood Combustion	June	2022	SEDS
Road Dust	July	2022	MOVES VMT
Stage 1 Gasoline Distribution	July	2022	MOVES County-level gasoline consumption
Composting	November	2022	EPA Advancing Sustainable Materials Management Report
ICI	November	2022	County Business Patterns
Other Mercury	November	2022	County Business Patterns
Solvents	November	2022	County Business Patterns
Agricultural Pesticides	Unknown	2022	County Pesticide Use
Cremation	Unknown	2022	CDC WONDER Database
Mining and Quarrying	Unknown	2022	USGS Minerals Yearbook

\* Assumes that new Clean Water Needs Survey data will not be released, and we will continue to grow 2012 data via population

We will again utilize the EIS feature called Option Group/Option Set (Appendix 6) and business rules for cross-dataset pollutant selection (Appendix 5). The purpose of these EIS functions is to minimize the need for tagging out data that would otherwise lead to double-counting and to automate the process of selecting data based on overlapping SCCs. By using these processes, EPA greatly simplified the nonpoint survey for 2017, which will be very similar to the survey we use for the 2020 NEI.

EPA has created the ability to link tables between databases, so that updated data only needs to be input once. The Wagon Wheel tool, illustrated in Figure 7-1, will undergo minimal updates for the 2020 NEI cycle, and EPA will post a version of the Wagon Wheel with (ideally) all possible methodology changes incorporated by July, 1 2021. This version of the Wagon Wheel will not be final as several activity data are not available until months later (see Section 7.2.2). EPA is encouraging states to only provide inputs to the Wagon Wheel Tool (also see section below). Oftentimes, late in the inventory cycle, EPA finds errors in the tools, and then must republish tools for states to go back and download and use again. SLTs lack the resources to rerun tools for resubmission, and so sometimes SLT-submitted data hasn't taken advantage of the latest updated version of the tool. By having EPA use one tool, we hope to eliminate errors in a cohesive way, and ensure that the data is consistently calculated by all data submitters.

**Figure 7-1:** EPA Wagon Wheel and some of the associated modules used to generate nonpoint estimates for 2020 NEI



### 7.2.1 Extended nonpoint submittal deadline and submittal option requirements

One of the biggest challenges with the nonpoint data category has been managing the release of the “final” EPA estimates (and tools). For the 2020 NEI, we are going to commit to where we ended up with the 2017 NEI: an extended submittal deadline for nonpoint to allow SLTs to submit inputs or emissions that leverage their point inventory throughput data (for ICI) or emissions (for other modules that need it).

We are anticipating very limited resources for new tool development or changes in processing and methodology for the 2020 NEI. Therefore, the 2017 NEI TSD will be a fairly complete and useful starting point for understanding how the EPA tools were developed. The primary focus will be on updating activity data input templates for the 2020 NEI, and more importantly, crafting an import tool. This will allow SLTs to load their inputs into the Wagon Wheel and then create draft emissions for comparison. We still strongly suggest that SLTs submit input templates where possible.

Any new nonpoint modules will be accompanied by new NEMOs (Nonpoint Emissions Methodology and Operating instructions) and input templates. At this point in time, we believe this is limited to agricultural silage.

Note: The Wagon Wheel does not generate emissions for every nonpoint source that EPA estimates. EPA has a separate Oil and Gas tool, and provides estimates for commercial marine vessels, locomotives, agricultural field

burning, portable fuel containers, ag livestock waste emissions, ag fertilizer emissions and biogenics. For these sources, EPA will generate estimates in the fall of 2021. SLTs can either submit their own estimates or use the nonpoint survey to indicate how these EPA estimates should be used as part of the March 31, 2022 submittal deadline. Also, draft EPA agricultural fire estimates will be provided on September 15, 2021, with SLT comments due November 15, 2021.

Nonpoint Inputs vs emissions submittal options for Wagon Wheel source categories

It is important to note that EPA will accept SLT inputs for the Wagon Wheel source categories on the same extended deadline as the nonpoint emissions and Nonpoint Survey schedule deadline of March 31, 2022. This is a full 2 months beyond the extended AERR-based deadline of January 15, 2022 that is in place for all other NEI data categories. SLTs are also able to run the latest-available version of the Wagon Wheel and/or submit their own estimates by March 31, 2022. EPA will provide the default templates for activity input submissions.

However, some activity data for year 2020 will not be available prior to the March 31, 2022 deadline. EPA plans to upload the latest-available activity data to the Wagon Wheel if it becomes available prior to “locking” in the final Wagon Wheel estimates later in the summer of 2022. Therefore, we strongly suggest submitting your own activity data inputs and/or selecting “Yes -Supplement my data with EPA Estimates” in the Nonpoint Survey. Doing so will ensure that the most-recently available default activity data are used in the 2020 NEI. In some cases, SLTs may have earlier access to more local data and if they submit their own activity data, can ensure that the 2020 NEI and Wagon Wheel are based on “EPA” data that include the most-current local activity data.

EPA will create SharePoint directory “2020 SLT Inputs for Wagon Wheel” on the NEI/NOMAD SharePoint site, shared w/ SLT submitters, to store default and SLT-submitted nonpoint input templates. EPA will create a spreadsheet in this directory, similar to Table 4-2 in the [2017 NEI TSD](#), which summarizes the SLTs and types of inputs submitted. When submitting activity input templates to SharePoint, we ask that SLTs follow the convention used in the 2017 NEI, with State or local abbreviation prefix (e.g., “KS” for Kansas), followed by the name of the input template and a date stamp.

**7.2.2 Wagon Wheel Updates**

A list of all Wagon Wheel source categories is provided in Table 7-2. The Input Template Required column indicates that we will be reflecting the status of ICI emissions or Input Template status submittal in the EPA Completeness Report sent to SLTs, Regional Offices and Air Directors -see Section 5. We plan to post a draft version of the 2020 Wagon Wheel, with default input data and any new or updated NEMOs, by July 1, 2021. Most Wagon Wheel source categories will not undergo any methodological changes; therefore, we refer SLTs to the appropriate location in Section 4 of the existing [2017 NEI TSD](#) for more information on the nonpoint tools. Another version of the Wagon Wheel that includes SLT-submitted Input data will be posted by September 1, 2022. A final version of the Wagon Wheel will be posted by February 28, 2023; this will include any EPA-solicited corrections to SLT-submitted Input Template data and will have the most feasibly up-to-date default activity data.

**Table 7-2:** List of Wagon Wheel source categories with those needing Point inventory subtraction noted

<b>Wagon Wheel Source Category</b>	<b>Point Inventory Subtraction?</b>	<b>Ability to Submit Control Information?</b>	<b>Input Template Required?</b>
ICI Fuel Combustion	Yes	County/SCC/pollutant-level	Yes
Ag Dust (from hooves)		No	
Ag Pesticides		County-level	
Ag Silage		To-be-determined	

Wagon Wheel Source Category	Point Inventory Subtraction?	Ability to Submit Control Information?	Input Template Required?
Ag Tilling		No <sup>3</sup>	
Asphalt Paving		County-level	
Aviation Gas Distribution Stage 1		No	
Aviation Gas Distribution Stage 2		No	
Commercial Cooking		County-level	
Composting		County-level	
Construction Dust: Non-Residential		No	
Construction Dust: Residential		No	
Construction Dust: Road		No	
Cremation: Human and Animal		County-level	
Landfills: working face (Hg-only)		County-level	
Mining & Quarrying		County-level	
Nonpoint Mercury (including human cremation)		County-level	
Open Burning: Land Clearing Debris		County-level	
Open Burning: Municipal Solid Waste		No	
Open Burning: Yard Waste		County-level	
Publicly-Owned Treatment Works (POTWs)	Yes	County/pollutant-level	
Residential Charcoal Grilling		County-level	
Residential Heating -Non-wood		County/SCC/pollutant-level	
Residential Wood Combustion		County/SCC-level	
Road Dust: Paved and Unpaved		County-level and by road type	
Solvents (to be renamed VCPs)	Yes	County/SCC-level	
Stage 1 Gasoline Distribution	Yes	County/SCC-level	

#### Removing HAPs from the Wagon Wheel

One of the most challenging issues in compiling the nonpoint component of the NEI is reconciling HAP estimates. This includes SLT-submitted emissions, HAP augmentation on SLT-submitted (e.g., VOC) emissions, and EPA-generated HAP estimates from the Wagon Wheel. An update to an EIS HAP Augmentation profile requires updating the emission factors in the EPA tools, and vice versa. Because EIS HAP augmentation is available in real-time and can be exported easily from EIS, we plan to remove HAP computations from the Wagon Wheel. Doing this will reduce a quality assurance issue (inconsistent HAPs being computed), and greatly reduce the size of the Wagon Wheel output files. To help SLTs who compute their own estimates using a version of the Wagon Wheel, EPA will export, format, and post on SharePoint a list of nonpoint HAP augmentation factors prior to the submittal window opening on July 1, 2021. EPA will enhance the EIS to include a “last updated date” and associated filter for HAP augmentation factors as well as HAP augmentation profile assignments. SLTs can then use this filter in EIS to obtain factors that may have changed after July 1, 2021. In addition, SLTs will continue to have the ability to submit their own CAP emission factors via the Wagon Wheel Central database Emission Factor Input Template table.

<sup>3</sup> While Ag Tilling doesn’t include a Control Factors option, there is the ability to control the number of tilling passes, acres impacted, and tilling assumptions of conventional, no-till, and conservation distribution of acres.

### Input Template Loading Ability

From SLT feedback on the 2017 NEI process, EPA realized that one of the SLTs' biggest limitations was their inability to load Input Templates into the Wagon Wheel to generate draft emission estimates. This was intentional for QA purposes; we did not want to receive emissions without also having the underlying activity input data that were used to generate it. However, EPA was not able to absorb SLT-submitted input data, run the Wagon Wheel, and then provide these draft emission estimates to SLTs. Therefore for 2020 NEI, EPA will develop a tool to enable SLTs to load and run the Wagon Wheel with their inputs to test the tools. We still strongly encourage SLTs to submit their input activity data to EPA, even if they submit their own emissions from the Wagon Wheel or other tool.

### Other Wagon Wheel Updates

At this time, we do not expect any other significant changes to the 2017 Wagon Wheel modules. We will use the NOMAD calls to discuss additional input templates (or Edit Assumption options) for a sector or two, but most resources for the 2020 nonpoint NEI development cycle will be dedicated to updating activity data and enabling SLTs to load their inputs directly to the Wagon Wheel. We encourage SLTs who choose to run the Wagon Wheel themselves to send EPA activity data and accept EPA estimates; this way, if EPA finds systemic issues with the tools, they can be holistically updated. Basically, if you generate acceptable estimates with the Wagon Wheel prior to March 31, 2022, we strongly prefer that you submit your inputs, not emissions, to SharePoint (EPA), and indicate "Yes – Supplement my data with EPA Estimates" in the Nonpoint Survey.

The exception to the status quo for nonpoint tools for the 2020 NEI is the following:

- Agricultural silage: A new source category capturing VOC emissions produced from microbial activity associated primarily with corn silage production, storage and feeding. This source category will generally only be present only at dairy farm operations. The NEMO for this category will show the emissions estimation procedure to be a standard emission factor times activity approach. It is expected that three new SCCs in Nonpoint will be added to cover these emissions using EPA methods.
- ICI: The current ICI module relies on state-level activity input data. EPA currently uses tortured algebra to run the ICI component of the Wagon Wheel for local agencies and states who do not submit activity data/emissions for the entire state (e.g., Nevada, Tennessee). We will work on streamlining this process for key states for the 2020 NEI.
- Solvents: A revamping of the methods and renaming the sector to volatile chemical products (VCP). Detailed discussion of this approach is provided in the following section.

#### *7.2.2.1 New approach for Solvents/VCP*

The current solvent sector includes more than 30 SCCs, which represent a diverse set of consumer and commercial chemical products, asphalt paving, and agricultural pesticides. Current EPA methods for estimating non-point solvent sector emissions include use of activity data (e.g. employment/population statistics), emission factors calculated from several sources (e.g. Freedonia Group Industry Report<sup>4</sup>, [EIIP](#), etc.), and point source subtraction for relevant emissions from the point source category to avoid double counting. Overall, chemical products emit significant quantities of VOCs and HAPs, with the 2017 NEI estimating that ~25% of all anthropogenic VOC emissions come from this sector. However, recent research has suggested that the NEI estimates for this sector are low biased by a factor of 2-3 ([McDonald et al., 2018](#)), indicating that this sector may be a dominant source of urban anthropogenic organic emissions. As a result, EPA's Office of Research and

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<sup>4</sup> While these reports are proprietary and cannot be shared, the resulting emission factors used will be provided.

Development (ORD) has explored the topic of chemical products and their emissions in recent years. After reviewing the existing NEI methods, they conclude:

- The NEI does not include the mass of organics from some product types and chemical functions.
- The NEI does not include assumptions related to fate-and-transport.

As such, efforts to improve the emissions from this sector have been undertaken and are currently in progress. The result of these efforts is a new framework for estimating emissions from this sector. This framework utilizes both current operational methods and introduces new modeling concepts.

First, total default national-level VOC emissions are expected to increase by a modest 10-30% in adopting this new methodology.

Second, there has been widespread confusion in the scientific literature and in the inventory development research related to this sector. As this sector is meant to represent total VOC emissions from chemical products and is not limited to organics that function as solvents in chemical products, we will likely rename this sector from “solvents” to “volatile chemical products” (VCP).

Third, in an effort to incorporate assumptions related to fate-and-transport, the new methodology (termed “VCPy”) will introduce 2 new SCCs for this sector and will map VCPy estimates into all other currently existing SCCs according to the tables shown below. VCPy will assign emissions to PUCs and sub-PUCs (Product Use Categories) as shown in Table 7-3 through Table 7-6 below (see the “VCPy sub-PUC” column). For example, Table 7-3 illustrates how the new mapping would work for the cleaning products product use category (PUC). In this case, cleaning products are further broken into two sub-PUCs (detergents & soaps and general cleaners). The VCPy methods creates emission factors for and maps emissions into the subcategories. Then, the emissions from these two sub-PUCs would be directly mapped to the existing SCCs in the 2017 NEI for these product types as shown in column 1 of each of the tables below. Similarly, in Table 7-4, mappings are shown for Personal Care Products PUC. Here two sub-PUCs are created via VCPy for daily-use and short-use products and these emissions (as the footnote indicates) are summed into the current SCC to represent this PUC.

**Table 7-3: Likely 2017 to 2020 NEI SCC mapping for Cleaning Products PUC**

2017 NEI SCC (Description)	VCPy sub-PUC	VCPy NAICS Mapping	Product Example
2460200000 (All Household Products) 2415000000 (Degreasing) 2460400000 (All Automotive Aftermarket Products)	Detergents & Soaps	3256111, 3256114, 3256117, 325611W	Household/Commercial/Institutional/Industrial: Soaps, Detergents, Laundry Detergents, Dishwashing Detergents, Metal Cleaners, Scouring Cleaners
	General Cleaners	3256125, 2356127, 2356121, 235611A, 2356130, 325612W	Household/Commercial/Institutional/Industrial: Disinfectants, Dry Laundry Fabric Softeners, Air/Room Fresheners, Glass/Oven/Toilet/Drain/Bathroom/Carpet Cleaners, Automotive Windshield Washer Fluid, Waterless Hand Cleaner, Automotive/Floor/Furniture/Shoe/Other Polishes and Cleaners, Chlorine/Nonchlorine Bleaches, Glycerol, Surfactants, Finishing Agents

The Cleaning PUC would also create emission factors for “Detergents & Soaps” and “General Cleaners.” However, the emissions from these two sub-PUCs would be mapped to the three existing SCCs (2460200000, 2415000000, 2460400000). The exact mapping/proportions are to be decided.

**Table 7-4:** Likely 2017 to 2020 NEI SCC mapping for Personal Care Products PUC

<b>2017 NEI SCC (Description)</b>	<b>VCPy sub-PUC</b>	<b>VCPy NAICS Mapping</b>	<b>Product Example</b>
2460100000 (All Personal Care Products)	Daily Use Products	3256204, 325620D, 325620G, 325620W, 3256207 (25%)	Hair Spray, Styling Products, Hair Color, Perfumes, Toilet Waters, Colognes, Cleansing/Foundation/Lubricating/Moisturizing Creams, Sunscreens, Cosmetic/Hand/Body Lotion and Oils, Lip/Eye Cosmetics, Deodorants, Nail/Face Cosmetics
	Short Use Products	3256201, 325620A, 325611D, 3256207 (75%)	Consumer/Professional Shampoo, Conditioners, Shaving Soap/Cream, Aftershave, Dentifrices, Mouthwashes, Gargles, Rinses, Toothpaste

The Personal Care Products PUC would create emission factors for “Daily Use Products” and “Short Use Products.” The emissions from these two sub-PUCs would be summed and directly mapped to the existing SCC (2460100000).

Mappings of existing 2017 SCCs to the VCPy Paints and Coatings PUC are shown in Table 7-5. VCPy sub-PUCs will be created based on separate emission factors for “Aerosol Coatings” and “Industrial Coatings”. As before, we will map emissions from these 2 sub-PUCs to the existing 18 solvent SCCs in a to-be-determined proportion.

For Paint Strippers---formerly called “Construction” in earlier VCPy work--- a new SCC is created for “Allied Paint Products”. VCPy generates a default emission factor and the appropriate emissions. Then, these emissions are directly applied to an existing SCC for paint thinners as shown as the last row in Table 7-5. Coordination is needed to ensure double counting does not occur as some SLTs reported to this SCC in the 2017 NEI.

**Table 7-5:** Likely 2017 to 2020 NEI SCC mapping for Paints and Coatings PUC

<b>2017 NEI SCC (Description)</b>	<b>VCPy sub-PUC</b>	<b>VCPy NAICS Mapping</b>	<b>Product Example</b>
2401001000 (Architectural Coatings)	Architectural Coatings	3255101, 325510W	Exterior/Interior Flat/Gloss Paints, Primers, Sealers, Undercoater, Lacquers, Finishes



2017 NEI SCC (Description)	VCPy sub-PUC	VCPy NAICS Mapping	Product Example
2460500000 (All Coatings and Related Products) 2401005000 (Auto Refinishing) 2401008000 (Traffic Markings) 2401015000 (Factory Finished Wood) 2401020000 (Wood Furniture) 2401025000 (Metal Furniture) 2401030000 (Paper) 2401040000 (Metal Cans) 2401055000 (Machinery & Equipment) 2401060000 (Large Appliances) 2401065000 (Electronic & Other Electrical)	Aerosol Coatings	3255107	Aerosol and Other Special-Purpose Coatings Including All Marine Coatings, Industrial, Construction, Maintenance Coatings, Traffic Marking Paints, Automotive, Interior/Exterior Industrial New Construction and Maintenance Paints
2401070000 (Motor Vehicles) 2401075000 (Aircraft) 2401085000 (Railroad) 2401080000 (Marine) 2401090000 (Misc. Manufacturing) 2401100000 (Industrial Maintenance Coatings) 2401200000 (Other Special Purpose Coatings)	Industrial Coatings	3255104	Automobile, Automobile Parts, Appliance, Wood Furniture, Wood & Composition, Metal Building Product, Container, Machinery, Non-Wood Furniture, Paper, Electrical Insulating, Other Finishing
2402000000 (Paint Strippers)	Allied Paint Products	325510B	Thinners, Strippers, Cleaners, Paint/Varnish Removers

The remaining PUCs not requiring changes to existing SCCs for the proposed 2020 sub-PUCs are provided in Table 7-6. The “Oil and Gas” and “Fuel and Lighter” PUCs do not map to any existing SCCs and will require new VCPy sub-PUC SCCs. In addition, for the Fuel and Lighter sub-PUC, we will need to ensure there is no double count with existing estimates in the Residential Charcoal Grilling module in the Wagon Wheel. Also, we have confirmed that this new Oil and Gas sub-PUC does NOT double count with the existing EPA Oil & Gas Tool estimates. Specifically, these emissions account for the fact that the oil and gas industry had 10 percent of US solvent demand by volume in 2015. Hydrocarbons, methanol, terpenes, and methyl soyate are used as solvents in both the production and the distribution of petroleum products, like crude oil and natural gas. For example, as part of the production process, hydrocarbons are commonly used to remove asphaltenes and paraffins from wells that have become clogged. In the distribution of natural gas, methanol is used in pipelines as a deicing agent.

**Table 7-6:** Remaining Proposed PUC mappings for existing and new VCPy sub-PUCs

PUC	2017 SCC (Description)	VCPy sub-PUC	VCPy NAICS Mapping	Product Example
Adhesives & Sealants	2460600000 (All Adhesives and Sealants)	Adhesives and Sealants	3255201, 3255204, 3255207, 305520A, 325520W	Natural Base Glues and Adhesives, Epoxy Adhesives, Other Adhesives, Structural Sealants, Nonstructural Caulking Compounds and Sealants

PUC	2017 SCC (Description)	VCPy sub-PUC	VCPy NAICS Mapping	Product Example
Printing Inks	2425000000 (Graphic Arts, employment)	Printing Inks	3259101, 3259104, 3259107, 325910A, 325910E, 325910H, 325910W	Letterpress, Lithographic, Gravure, Flexographic, Nonimpact/Digital Printing Inks
Pesticides & FIFRA Products	2460800000 (All FIFRA Related Products)	FIFRA Products	3253204, 3253207	Lawn and Garden Pesticides and Chemicals, Household and Institutional Pesticides and Chemicals
	2461850000 (Pesticide Application: Agricultural)	Pesticide Application: Agricultural	3251994, 3253201, 325320W	Bulk Pesticides/Other Synthetic Organic Agricultural Chemicals, Agricultural and Commercial Pesticides and Chemicals
Dry Cleaning	2420000000 (Dry Cleaning)	Dry Cleaning	N/A	Dry Cleaning Fluids
Misc. Products	2465900000 (Miscellaneous Products: NEC)	Misc. Products	N/A	Pens, Markers, Arts and Crafts, Dyes
Oil & Gas	Does not exist	Oil & Gas	N/A	Cleaners, Deicers
Fuels & Lighter	Does not exist	Fuels & Lighter	N/A	Lighter Fluid, Fire Starter, Other Fuels

Generally, the VCPy methods will develop emission estimates for all current SCCs which states can choose to accept via the solvent tool. And, VCPy will add the 2 new SCCs as shown in Table 7-6 for Oil & Gas and for “Fuels & Lighter”. In all cases, other than adding the new SCCs, we will map the new work into existing SCCs in this sector. The information under “VCPy” reflects mappings under the new methods Details on these new methods will be available to review and comment on in the upcoming months.

Not all solvents sources will necessarily use this new VCP approach. Currently, we anticipate asphalt paving and agricultural/industrial pesticides will likely continue to use the existing methods in the Wagon Wheel. In consultation with industry, new replacement methods are being considered for graphic arts with the outcome to be determined. The new approach for other SCCs will be available in a future version of Wagon Wheel for the 2020 NEI.

This sector’s timeline will adhere to the general one laid out in other parts of this plan for the nonpoint sector. However, because this is a new method requiring introduction and discussion, there are a few intermediate items in the schedule. Highlighted in Table 7-7 are some of those and some overall due dates.

**Table 7-7: Intermediate VCP inventory development milestones**

Item	Draft Completion Date	Comments
EPA/ORD develops new methods, introduces to NEI team, and develops initial documentation	May 2020	These items have been completed, including informational briefings for management

Item	Draft Completion Date	Comments
Introduce new methods to SLTs for the 2020 NEI cycle	<ol style="list-style-type: none"> <li>6/11/2020---brief mention in NEI newsletter</li> <li>In this plan, some details included, 7/1/2020</li> <li>9/16/2020--Detailed presentation by ORD on NOMAD call (will include introduction of new SCCs and other NEI-related items)</li> </ol>	There are 3 initial items to introduce new methods to our SLT stakeholders---via NEI newsletter, via this plan, and then via a NOMAD call
Address all comments from SLTs on these new methods	October 2020	This would be in response to comments on the plan as well as comments based on NOMAD presentation
Develop documentation via a NEMO	July 1, 2021	It is likely the methods will be written into a manuscript for publication prior to this date. When that document is available for general dissemination, it will be posted in a 2020 NEI/NOMAD SharePoint folder.
Other items	As indicated in the general Nonpoint schedule	We expect an initial draft inventory to be available by 11/1/2020. These estimates will be based on 2016/2017 activity and other data. Actual emissions for 2020 will not be available until late in 2022, when key activity data for 2020 become available -see "Solvents" in Table 7-1.

### 7.2.3 Milestones and deadline for non-WW related sectors

A list of all EPA estimates **not** generated via the Wagon Wheel is provided in Table 7-8.

**Table 7-8: EPA estimates not generated from the Wagon Wheel**

Nonpoint Tools/Estimates	EPA Tool or Stand-alone Database?	Point Inventory Subtraction?
Ag Fertilizer	database	No
Ag Livestock	database	No <sup>5</sup>
Agricultural burning (cropland residue burning)	database	No
Biogenics	database	No
Portable Fuel Containers (PFCs)	database	No
Oil and Gas Production & Exploration	Tool	Yes

The schedule for these nonpoint categories will generally follow the outline shown above for releases of data to the public and on the requirements for completeness reports. There are some differences as highlighted below in Table 7-9 for all three of the agriculture-based sectors shown in Table 7-8. The methods for each of these agriculture categories will be similar to those used in the 2017 NEI. As such, any tweaks we make to the methods will be highlighted in our draft documentation via NOMAD calls. No extensive revisions are planned to any of these NEMOS for the 2020 NEI.

<sup>5</sup> This is insignificant and not reconciled in the computation of nonpoint estimates

**Table 7-9: Schedule for all Ag Sectors (Ag Fertilizer, Ag Burning, and Ag Livestock Waste)**

<b>Item description</b>	<b>EPA or SLT</b>	<b>Date</b>	<b>Comments</b>
Review SCCs, suggest clean-ups and additions either via 2020 NEI plan, or via SharePoint site once analyses completed	EPA	8/1/2020	Might be done via NOMAD call or via group
Review methods, develop tweaks based on 2017 NEI comments, and other updates that have become available	EPA	10/1/2020	No major revisions to NEMOs expected for any of these categories. The ag burning method is in the published literature, Ag fertilizer methods soon will be. The methods are expected to be nearly identical to what was used in 2017 NEI. NOMAD calls will be used to correspond on any tweaks made to methods.
Develop draft emission estimates	EPA	5/1/2021	Post these estimates on SharePoint. Include draft documentation and any requisite summary files.
Comment process on draft emissions	SLT	5/1/2021-8/1/2021	This would include the SLTs looking at emissions, looking at activity data. After reviewing our estimates, letting EPA know if they accept our estimates, have comments, or would like to submit activity data on any of the sectors (acres burned for ag burning, livestock counts for ag livestock waste, and fertilizer use patterns for ag fertilizer)
EIS Production Submission window opens	SLT	7/1/2021	Submission window opens for any SLTs that would like to submit emissions for these sectors
Submission of alternative activity data	SLT	9/1/2021	The submitting agency should work with EPA to determine formats for submitting any activity data for any of these sectors
Submission window closes for Nonpoint in EIS	SLT	3/31/2022	
QA of all SLT data and responses back to SLTs	EPA	6/1/2022	EPA provides comments on all submitted emissions data by SLTs.
EPA works with submitted comments, any additionally submitted activity data, and other clean up that is required to develop final EPA emissions	EPA	8/1/2022	By May 2022, EPA will address all the comments, include any new activity data (as possible/feasible) and re-post "final" emission estimates.
Make decisions on which SLT data to tag out based on EPA QA of SLT submitted data	EPA	9/30/2022	Inform SLTs of any of their data we will need to tag out, not include or otherwise not be able to use.
Final QA of SLT and EPA data to check for errors	EPA	12/30/2022	
Finalize all these sectors in EIS	EPA	2/28/2023	
Public release of all these sectors, along with all of nonpoint	EPA	3/31/2023	Includes query tools, documentation, summary files

#### 7.2.4 ICI Tool Requirement: State total fuel consumption throughput needed

As mentioned in Section 3.2.2, the AERR has a requirement for submitting activity data (throughput) information of point sources. Because nonpoint estimates are created using total fuel consumption by state, this throughput is necessary to reconcile industrial (I) and commercial/institutional (C/I) fuel combustion in the nonpoint data category. If SLTs do not provide state-total nonpoint throughput by fuel type (e.g., natural gas, distillate oil, coal) and sector (I versus C/I), then EPA requests SLTs to submit state-total point throughput. In addition to the throughput, SLTs should include a valid Calculation Parameter Unit of Measure Code by fuel type, and 2-digit aggregated NAICS code which will be used to assign the I vs C/I sector.

EPA collaborated with the ICI NOMAD team (contact [Rich Mason](#) for more information) to develop the input templates used in the Wagon Wheel's nonpoint ICI component for the 2017 NEI. For the 2020 NEI, the Energy Information Agency (EIA) State Energy Data System (SEDS) state-level fuel consumption data will again be used. EPA, in collaboration with the NOMAD team, will review the latest SEDS data for changes to the emission methods, such as fuel consumption moving to different EIA sectors. The SEDS data will be used for computing nonpoint throughput if SLTs do not provide state-total nonpoint fuel consumption, split out for Industrial vs Commercial/Institutional facilities. Unchanged for the 2020 NEI, EPA will subtract fuel-specific SLT-submitted state-level point source I vs C/I throughput from the EIA consumption data to estimate the nonpoint I vs C/I throughput by fuel type. SLTs are strongly-encouraged to engage in this process; a lack of submitted nonpoint or point throughput data (or emissions submittal) forces EPA to implement the "default" method for estimating nonpoint emissions. The default is to compute emissions from total SEDS activity data, with no Point inventory subtraction, and possibly double-count ICI emissions with those in the point inventory. A lack of SLT-submitted data will lead to a larger than expected nonpoint ICI throughput computation, more than a complete point inventory throughput or direct nonpoint activity estimate.

For the 2017 NEI, the ICI tool was modified to no longer compute nonpoint emissions by subtracting point inventory emissions. There was gross over-estimation of the resulting nonpoint emissions with point source controls also not being reflected in the subtraction. The ICI tool also does not allow county-level throughput subtraction as we believe the input data (EIA SEDS) does not reconcile well with the point inventory at the county-level. Instead, the ICI tool will retain (only) the state-level activity (throughput) subtraction by sector and fuel type. The ICI tool will then allocate the resulting nonpoint throughput to county level throughput via sector employment data, which is already built into the ICI tool. For the 2020 NEI, we hope to craft a work-around for partial state and local agencies such as Nevada and Tennessee.

These Nonpoint ICI inputs will not be required if SLTs submit Nonpoint ICI emissions. However, EPA will no longer support the point inventory emissions subtraction to compute nonpoint ICI emissions in the ICI tool. We request that SLTs not use the existing versions of the ICI tool if they plan to submit their emissions rather than submitting inputs for use in the new version of the ICI tool. There will be a webinar later in 2020 to discuss the ICI tool methodology and Input Template submittal options; contact [Rich Mason](#) for more information.

#### 7.2.5 Utilization of EIS Option Group/Option Set evaluation to compile NEI

The EIS has an Option Group/Option Set (OGOS) feature that was first implemented for the 2017 nonpoint NEI. In the [Source Classification Code table](#), we define SCCs which have a hierarchical nature. That is, there may be a "general" group, as well as more specific SCCs within the same group. These relationships are defined by the "Option Group / Option Set" (OGOS) fields in the SCC table. When EPA and SLT datasets are placed in an NEI selection, there is the potential for double counting of emissions across these data sources. For example, the EPA may report emissions to a "general" SCC while SLTs report data to detailed SCCs. Without OGOS evaluation, both sets of data would be included in the NEI selection.

The current OGOS rules employed in the selection assumes that if a SLT submits data, they are submitting data for the entire group, and no additional data sets are to be used to “backfill” any SCCs within the same option set. The desired function is for the selection to backfill any SCCs within the same option set. Refer to “Appendix 6 - Option Group Option Set Enhancement EIS Requirements.pdf” on the [2017 National Emissions Inventory Documentation](#) website for a comprehensive discussion on the OGOS business rules. These were first implemented in EIS for the 2017 nonpoint NEI and, will be retained for the 2020 NEI.

### 7.2.6 Nonpoint survey

Because each agency has their own universe of sources and inventory development approaches, SLT nonpoint estimates may be reported differently. The nonpoint survey gathers information specifically for each SLT regarding which source categories are covered by point, nonpoint, or both, or, if there are no emissions for a source category.

The nonpoint survey was first implemented in 2014 but was greatly simplified for the 2017 submittal process. Implementing the previously discussed Option Group/Option Set feature automates how EPA data are used to gap fill SLT submittals. One of the primary purposes of the nonpoint survey is to prevent EPA double-counting. This includes sectors where SLTs and EPA report emissions for different SCCs but similar processes and to prevent EPA estimates gap-filling where SLTs did not submit emissions. EPA does not anticipate making any structural changes to the nonpoint survey for the 2020 NEI.

The nonpoint survey defaults to “Accept All EPA Emissions Estimates” (yes) for all SCCs (sources) that EPA estimates. This has the following consequences:

- If SLTs do not complete and submit the nonpoint survey, EPA estimates will be used where computed **and where SLTs do not submit emissions in that Option Group/Option Set assignment**. For example, if SLTs submit emissions for some type of woodstoves with inserts (EPA SCC or not), your SLT emissions will be used and EPA emissions will not. And, if you submit emissions for **only part of an option group** (e.g., only certified wood stove inserts), but not for other SCCs of the option group (e.g., non-certified woodstoves), then EPA data will be used (gap-fill) for those unreported SCCs. However, if you submit a “total” woodstove inserts, then EPA data for certified and uncertified woodstove inserts will not gap-fill.
- If SLTs do not submit **any emissions for this Option Group**, EPA estimates **will** be used (gap fill). This is an important distinction: if you submit emissions for an Option group, they will be in the NEI unless you actively remove them from your data or contact EPA prior to the submittal deadline to request EPA remove (“tag-out”) your data. For QA reasons, EPA necessarily prefers less tagging.
- If you indicate “No” in the nonpoint survey, EPA emissions will not appear in the NEI for the Option Group. You must select one of the 4 reasons for not accepting EPA estimates:
  1. I do not have this source
  2. This source is included in my Point Source contributions
  3. My agency uses different SCCs
  4. My inventory is complete. It does not need to be supplemented.

There is also an option to “Yes - Supplement reported location SCCs” only. You would choose this to allow EPA to fill in expected pollutants if your submittal does not include all expected HAPs and CAPs. This option also prevents EPA data from making it into the NEI where SLTs purposely do not report emissions for some counties. For example, you submit an inventory for some CAPs and an incomplete set of expected HAPs for outdoor hydronic heaters in the limited counties you expect them to exist (e.g., not urban counties). Meanwhile, the EPA residential wood combustion tool, with more simplified spatial allocation has these devices in counties which you did not submit any emissions to. By choosing this conditional-yes option, EPA data will only gap-fill outdoor

hydronic heater emissions for pollutants that SLTs did not report but where at least one pollutant was reported. Meanwhile, if SLTs reported no pollutants, then no EPA data will be chosen in the selection. Note, if your goal is to ensure that State data is used for reported counties and EPA data to gap-fill non-reporting counties, then you need to use the “Accept All EPA Emissions Estimates” option, and **not** this “Yes – Supplement reported location SCCs” option.

Note: if an SLT submits a full suite of CAP emissions for an SCC (and location), but not (for example) the HAPs and/or full set of PM components (e.g., PM10-FIL, PM25-FIL, PM-CON), the SLT can still indicate “No” (my inventory is complete...) as HAP and PM augmentation will be performed regardless; the resulting HAPs and PM components, based on SLT-submitted (generally VOC/PM) data are considered “SLT” data.

### **A very important note on using the Nonpoint Survey**

If you submit activity inputs to the EPA Tool category, you need to accept EPA estimates (do nothing for that tool) to ensure that your inputs will be processed by the EPA tool and generate an inventory. **You only edit an SCC** (to choose one of the 4 “No” options or to restrict EPA supplementing data to reported locations only) **if you are not submitting activity inputs, and/or submit complete emissions for the SCC or indicate that these EPA-generated nonpoint sources should not gap-fill in the nonpoint survey. Please contact [Rich Mason](#) if you have any questions on how to fill out the Revised Nonpoint Survey.**

### **Revised Nonpoint Survey Examples**

Some screenshots on how the revised nonpoint survey will function are provided here. As seen in Figure 7-2, when you first enter the Nonpoint Survey, you will be greeted with a Survey Status:

- Complete (green): There is an answer for every SCC that EPA estimates.
- In progress (yellow): There is at least one SCC in the survey that has an answer, but also has at least one SCC without an answer
- Not started (red): No SCCs in the survey have an answer

Once you edit and save a category in the following screens, the survey will be yellow until all categories are complete. If you select the “Accept All EPA Estimates” button then this will set the answer for every SCC in the survey to “Yes – Supplement My Data With EPA Estimates”, and this will “Submit” the survey and once pressed, no further action is required by your agency. These, and the detailed business rules populate the text in this opening page as well.

Figure 7-2: Example of the Nonpoint Survey opening page

The screenshot shows the 'Agency Organization Detail' page for the 'CURRENT AGENCY'. The agency is the North Carolina Department of Environmental Quality, a State agency, with ETL Process Group 2. The 'Survey Status' is 'Survey Complete', indicated by a green dot. A callout box points to this status, stating 'Shows current Status of Agency Survey'. Below this is a navigation bar with links: Agency Responsibilities, Agency Members, Program System Codes, Allow Access, Feedback Reports, and Nonpoint Survey. The main heading is '2017 NONPOINT SURVEY', with an 'Inventory Year' dropdown set to 2017. The text explains the purpose of the survey and provides instructions. A callout box points to the 'Go To Survey' button, stating 'Opens Agency Survey Summary Page'. Another callout box points to the 'Accept all EPA Estimates' button, stating 'Main Page "Easy" Button'. The page also lists several options for accepting EPA estimates, such as 'Yes - Supplement my data with EPA estimates', 'No - Do Not Supplement My Data' (with four sub-options), and 'Yes - Supplement Only for Missing Pollutants at my reported Counties or Tribe'.

Once you select “Go To Survey” on the opening page, you will be directed to the Nonpoint Survey summary page, shown in Figure 7-3. Each EPA Tool Estimate Category is listed on the left. These categories (not necessarily EIS sectors), represent each EPA nonpoint “tool” such as “Residential Wood Combustion”, “ICI Fuel Combustion”, “Solvents”, “Ag Pesticides”, “Oil and Gas” and so on.



Figure 7-3: Example Nonpoint Survey category summary page

### Agency Organization Detail

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#### CURRENT AGENCY

Agency Description: North Carolina Department of Environmental Quality  
 Agency Type: State  
 ETL Process Group: 2  
 Survey Status: ● Survey Complete

Agency Responsibilities
Agency Members
Program System Codes
Allow Access
Feedback Reports
Nonpoint Survey

**Summary Page “Easy” Button. Sets all SCCs in the Category to “Yes”, and will mark “Category Complete” to “Yes”.**

**Navigate to SCCs within the Category**

EPA Tool Estimate Category	Category Complete?		
Ag Burning Estimates	Yes	Accept All EPA Emissions Estimates	Edit SCCs
Ag Fertilizer Tool	Yes	Accept All EPA Emissions Estimates	Edit SCCs
Ag Pesticide Tool	Yes	Accept All EPA Emissions Estimates	Edit SCCs
Ag Tilling Tool	Yes	Accept All EPA Emissions Estimates	Edit SCCs

A “Category Complete?” is marked as “Yes” when every SCC within the category has been answered and “submitted”. It is marked “No” if at least one SCC within the category has not been submitted in the survey. If you select “Accept All EPA Emissions Estimates” then:

- Each SCC within the category will be given an answer of “Yes – Supplement My Data With EPA Estimates”.
- This implies a “Submit” action
- You can also go back and edit individual SCCs later

The overall survey status changes when the category complete status changes from “Yes” to “No”.

If you decide to not accept EPA estimates for every SCC in the category, then you must click on the “Edit SCCs” button, which will then navigate you to the example detailed SCCs screen shown in Figure 7-4. This is where you can select specific SCCs that you do not want EPA to supplement, or, where you can have EPA supplement only at locations (counties) where you reported at least one pollutant. These options were laid out in the beginning of this section. Once you drag the SCC from the Yes (default) column on the left into the No column on upper right, you choose one of the 4 “No – Do Not Supplement My Data” via the drop-down dialogue box. Pressing the “X” from either the “No...” or “Supplement...” boxes will move the given SCC back to the default “Yes...” box. The “Reset” button will move all SCCs (for this category) back to “Yes”, regardless of what the answers were initially. The “Save” button saves the answers for every SCC as it currently stands; this does NOT submit your answers; it only saves your current progress. You are encouraged to save often. If you click “Submit” then you are officially committing to your answers, data is saved, and you are sent to the previous Summary page. You must click

“Submit” to complete the survey. If you click “Cancel”, then any changes you made since you last saved will be ignored, and you will be returned to the previous Summary page after you select “Yes” to the confirmation message “Are you sure you want to exit this page? Any changes to the SCCs in this Category will NOT be saved.” If you click “Cancel”, you will stay on the SCC detail page.

EPA received a request to add two optional, free text comment boxes to the nonpoint survey. SLTs could utilize these to aid EPA in understanding the selections SLTs have made, and whatever text is input by the SLT could serve as part of the official record. EPA will collaborate with the NOMAD committee and EIS developers on this enhancement.

Figure 7-4: Example Nonpoint Survey SCC detail page

### Agency Organization Detail

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#### CURRENT AGENCY

Agency Description: Minnesota Pollution Control Agency  
Agency Type: State  
ETL Process Group: 2  
Survey Status: ● Survey Complete

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[Agency Responsibilities](#) | [Agency Members](#) | [Program System Codes](#) | [Allow Access](#) | [Feedback Reports](#) | [Nonpoint Survey](#)

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## EPA Tool Estimate Category Mercury Tool

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*Should EPA supplement your agency data?*

Drag and drop the desired SCC into an Answer box. If choosing "NO - Do Not Supplement My Data", you may choose a reason by clicking on the comment bubble that appears next to the SCC. To move an item back to the "Yes - Supplement my data with EPA estimates", click on the red "X" next to the SCC.

#### Yes - Supplement my data with EPA estimates

2620030001 - Landfills: Muni Dump/Crush/Spread New Material

2650000000 - Waste Disposal: Total All Processes

2810060200 - Cremation - Animals

2650000002 - Waste Disposal: Shredding

#### No - Do Not Supplement My Data

2861000000 - Lamp Breakage (Landfill emissions) ⋮

2810060100 - Cremation - Human

2851001000 - General

**Yes - Supplement Only for Missing Pollutants at my reported Counties or Tribe**

#### 2861000000/Lamp Breakage (Landfill emissions) ✕

Should EPA Supplement your agency data?

Cancel

Reset button will "undo" all changes to SCCs. All SCCs will move back to "Yes" box. →

ResetSaveSubmitCancel

## 8 Mobile sources

### 8.1 Overview

Mobile sources are the source of pollution caused by vehicles transporting goods or people (e.g., highway vehicles, aircraft, rail, and marine vessels) and other nonroad engines and equipment, such as lawn and garden equipment, construction equipment, engines used in recreational activities, and portable industrial, commercial, and agricultural engines.

The EPA generates a comprehensive set of mobile source emissions data for criteria and hazardous air pollutants, and greenhouse gases for all states, Puerto Rico, and the U.S. Virgin Islands as part of the NEI. The EPA uses models to estimate emissions for most of the mobile source categories. With the exception of California and Tribes, the EPA requires SLT agencies to submit MOVES model inputs where applicable, rather than emissions. EPA can then use those inputs if MOVES is updated and for consistent future year mobile source projections.

### 8.2 Onroad process changes for 2020

The EPA will continue to use MOVES for the 2020 NEI for both onroad and nonroad emissions, the exact version will be determined prior to the submittal window opening in July 2021.

Collection of inputs, rather than emissions, is required to provide EPA the ability to run varying model scenarios and future projections from the same input basis. Collection of model input data will be like the process used for the 2017 NEI. The EPA is interested in comments on the current MOVES input process in planning improvements for the 2020 NEI cycle.

### 8.3 Nonroad process changes.

For the 2020 inventory cycle and beyond, only MOVES input format (CDB) files will be accepted. The 2020 NEI will use the same SCCs for mobile sources as used in the 2017 NEI.

### 8.4 Commercial marine vessels changes

Similar to the 2017 NEI, EPA plans to again use Automatic Identification System (AIS) data points from the US Coast Guard to identify ships and their activity. Unless an agency has similar, or more granular AIS-based emissions, it is unlikely that agency will have superior emissions estimates. SLTs are encouraged to review the 2017 methodology and accept EPA CMV data for 2020. Once computed, EPA will provide the data for SLTs to comment and EPA can also provide detailed gridded files for SLTs to better understand the spatial allocation of emissions offshore and at resolutions finer than county level. Although EPA will generate gridded hour-specific files for modeling consistent with the NEI data, the data stored in the EIS/NEI will be by county as annual and in addition potentially monthly totals. NEI port emissions will be in over-water shape files and underway emissions in county files. The port shapes do not cross counties and can be readily summed to individual port or to county.

### 8.5 Rail changes

For the 2020 inventory cycle, line-haul rail emissions will be at the county level. Rail yards will still be at the facility level as point sources. EPA will be using rail estimates developed via the Eastern Research Technical Advisory Committee (ERTAC), as was done for 2017 NEI. SLTs are encouraged to be involved in this process. For the years 2011, 2014, and 2016, ERTAC supplied rail emissions for the country. Once available, states had the option of accepting the ERTAC rail data or submitting their own data for the current NEI cycle. Rail for the 2017 NEI was grown from the 2016 estimates. EPA plans to again use the ERTAC development process for the 2020 NEI. However, if ERTAC does not have the resources to supply data for the 2020 NEI, EPA will consider a contingency plan to grow 2016 estimates to year 2020 using individual rail company reports.

## 8.6 Aircraft changes

For the 2020 inventory cycle, we are using the same methodology as the 2017 NEI. We will collect landing and take-off (LTO) inputs which SLTs will be asked to review/update. Note: an LTO operation is considered a single complete aircraft operation. If landings and takeoffs were counted separately, then emissions would be double counted. Then EPA will run the Federal Aviation Administration's model to estimate emissions. For the 2020 NEI, we will use the Aviation Environmental Design Tool (AEDT) for EPA estimates. There may be a version update provided by the Federal Aviation Administration (FAA). The AEDT model treats airports as point sources. Emissions associated with airports include commercial aviation, air taxis, general aviation, military, ground support equipment and auxiliary power equipment. Although these are 10-digit SCCs, they can only be associated with point-source airport facilities: they cannot be at the county level.

## 9 Events

### 9.1 Overview

As proposed, the revised AERR does not require SLT agencies to report emissions from wildfire or prescribed burning (wildland fires) sources. Rather, these sources are reported as events to EIS. For the purposes of this plan, the approaches described here assume use of the event format and voluntary participation from SLT agencies to help EPA to create the most accurate inventory of these sources. We encourage states to submit actual inputs (activity data) and not emissions for Events. We also encourage SLTs to accept EPA emission estimates if a SLT has no activity to submit. Note the NEI process for EVENTS allows SLTs to review and comment on EPA's draft emission estimates. EPA can address these comments in creating the final estimates; this is one way for SLTs to "accept EPA estimates."

Air agency EVENT (day-specific emissions from wildfire and prescribed burning) data is an important data source in the NEI. Many pollutants such as PM, VOCs and numerous HAPs are emitted in significant amounts by the large fires. Note, rangeland fires (e.g. Flint Hills prescribed fires) are now a part of the EVENTS fire dataset. For EVENTS, the EPA provides a default dataset that covers the entire U.S (including AK, HI, PR, and the Virgin Islands). States should carefully check these emissions and strongly consider accepting them before deciding to submit emissions. The EPA prefers to use consistent methods and pollutants where possible. An ideal approach is SLTs working with EPA to have the best estimates possible and then accepting those estimates. If, after review of EPA's final EVENT emissions (after provision of activity data), an agency deems it absolutely necessary to submit emissions, then care must be exercised to keep the pollutant coverage the same as what EPA methods estimate. More details on the inventory development for wildland fires is provided here.

#### 1. Reassembly of the Fires Workgroup

We will hold calls on a periodic basis to understand EPA methods, get work group comments and suggestions, and incorporate comments to the best of our ability into our estimation process. We will also include agricultural fires (which is currently in nonpoint and is discussed in the NOMAD WG) in these discussions. We may build further off the WG that had been set up to handle fire emissions for 2016 modeling platform use.

#### 2. Solicitation of 2020 Activity Data

EPA will send a request by email to all SLTs to collect activity data for wildland fires. These activity data include, but are not limited to, fire-occurrence input data such as: acres burned, fuel moisture, fuel consumption and type of fires. EPA will provide an Excel-based template for SLTs to populate and return to EPA.

3. Memo to SLTs on EVENTS process for 2020

EPA will send a memo explaining EPA methods and why EPA would prefer SLTs and others to only submit activity data for wildland fires, and not emissions. In addition, if an SLT chooses to submit emissions, we will explain what needs to be submitted (including CAPs, HAPs, and GHGs---and EPA will provide appropriate EFs) including parameters needed for emissions modeling such as the heat released by each fire and its unit of measure and how one can estimate that value.

4. Questionnaire to SLTs

Concurrent with the memo to SLTs on EVENTS process, a questionnaire will be sent to SLTs to help EPA assess how complete their activity data is. This will help EPA appropriately use other datasets in conjunction with what the SLTs submit. It is extremely helpful for SLTs to fill out and submit the questionnaire, even if you decide to submit emissions.

5. EPA Communication back to SLTs

EPA will provide feedback to SLTs that submitted as to the quality of the activity data and if/how those data can be used in emissions processing. EPA will further use questionnaire results to ensure SLTs agree with bringing in newly-available activity datasets as defaults for their domains.

6. Create SMARTFIRE2/Bluesky based draft emission estimates for SLT review

Activity data agreed to by SLTs for their areas will be used with or without other activity datasets to estimate emissions via the SMARTFIRE2 ([Satellite Mapping Automated Reanalysis Tool for Fire Incident Reconciliation](#))/Bluesky (SF2/BS) framework and approach that has been used for previous inventories. For those SLTs that did not submit activity data, default activity data will be used. Draft methodology will also be provided, and SLTs are requested to make comments for corrections, including revised activity data they may possess. For the initial draft 2020 WLF event emissions, EPA may run the SF2/BS model without any state-submitted activity information (even if we receive it prior to that run). Once these draft estimates are posted, EPA will use the comments and any activity data provided by SLTs to rerun the SF2/BS model. The reason for this is the uncertain nature of resource allocation to EPA for developing WLF emissions estimates in the many NEI cycles.

7. Rerun SMARTFIRE2/BlueSky with revisions

Emissions will be regenerated based on suggested revisions from the review process. SLT submitted activity data will also be included as resources allow. Accompanying documentation outlining differences between the draft estimates and this rerun will be provided. SLTs who do not comment should see no changes in emissions.

8. Finalizing Wildland fires inventory

SLTs will be able to review the SMARTFIRE2/BlueSky rerun emissions; minor comments or edits that will be addressed and reflected in the Final NEI. Any SLTs who approve the EPA estimates must have submitted their emissions prior to the extended-AERR deadline for wildland fires, January 15, 2022. SLTs that submit emissions must submit other parameters required for emissions modeling, such as heat released by each fire, (which can be estimated from the [CONSUME](#) model). For those SLTs that submit emissions, EPA will provide HAP and PM2.5 composition emission factors for SLTs to use. EPA will provide all required parameters prior to the AERR submittal deadline.

## 9.2 Event process changes

For the 2020 NEI process, we expect the following items to be new/changed from the 2017 NEI process:

- Like the 2017 NEI, we continue to strongly encourage SLTs to submit activity data and NOT emissions for this data category. Even so, a couple of states do continue to submit emissions for this category.

- As in the 2017 NEI, more parameters are required if SLTs submit data (emissions) to this category, including heat content (“Heat Release” and “Heat Release UOM” (unit of measurement) —see step 3 in the previous section for further details) for each fire as well as other parameters needed for emissions modeling of these fires. Without heat release and the heat release unit of measure, it is not possible to compute plume rise for fires.
- Those Agencies that decide to submit emissions data must include smoldering and flaming components. The smoldering and flaming components are each important for many activities including data used for climate assessments. This is because the PM2.5 chemical composition is different for the smoldering vs. the flaming component. If a SLT does submit emissions, the smoldering component should correspond to the “Residual Smoldering” component that comes out of the [CONSUME](#) model. Flaming can include both “flaming” and “regular smoldering”. Note that if an SLT does submit emissions, they will be prohibited from submitting a total, they will only be able to submit smoldering and flaming emissions. If SLTs only have total emissions and they need to re-apportion to the flaming and smoldering components, then they can use EPA estimates to develop those needed ratios or consult with EPA about the best way to resolve this.
- We will review the possibility of including lead (Pb) as a pollutant from these large fires in the 2020 NEI. If we adopt an EPA method for Pb in the 2020 NEI, agencies that decide to submit actual emissions data should also plan on submitting Pb emissions. An emissions factor and procedure for estimating Pb emissions from PM2.5 fractions will be provided by the EPA as needed. If EPA decides to include Pb from fires, it will be highlighted via the fires WG process that will be setup for the 2020 NEI.
- SLTs that submit emissions must also submit HAPs, GHGs, and PM species as reported in EPA data for EVENTS. EPA will provide the requisite EFs.
- By July 2021, EPA will decide which version of the BS process will be coupled with SMARTFIRE2 to estimate emissions. Current evaluations are looking at using Bluesky Pipeline as an alternative to Bluesky Framework, which is what has been used for the past couple of NEI cycles. Once a decision is made (expected by July of 2021), EPA will let all outside parties know.
- As discussed earlier, if we switch to the “Bluesky Pipeline” process, it’s possible a new set of SCCs will be included for pile burns. This will be in the technical memo provided in the activity-data collection memo. If this is included, EPA will estimate pile burn emissions, and the new SCCs will allow for SLTs to submit pile burn emissions, if they choose to do so. SLTs can also submit activity data (and questionnaire responses) for this new category of fires.
- Agencies should make it clear to the EPA that the activity data they are submitting is a complete set for both prescribed and wildfires. That way, the EPA will ensure no other default data is brought into the process of estimating emissions for those SLTs. As in the 2017 NEI process, EPA will send out a questionnaire to address how complete an agency’s activity data are.
- We encourage agencies to send in activity data as soon as possible after EPA’s “request for 2020 WLF activity data” note goes out. Due to resource constraints this year and the fact that EPA’s draft estimates will be based on only national default activity data, EPA will likely provide more time for SLTs to submit activity data. We strongly encourage all agencies to review and comment on the draft EVENTS NEI that we expect to post in the summer of 2021. This includes submitting additional activity data, commenting on the draft emission estimates, and other items that will facilitate getting us to a final WLF inventory.
- By July 2021, EPA will decide whether we need to add SCCs to cover pile burning. This will only happen if we make the choice to switch to the Bluesky Pipeline process. Pipeline will allow EPA methods to estimate pile burn emissions, which is not possible currently with the Framework process.

## 10 EIS Gateway, Reports, and Tools

### 10.1 CERS Schema Changes

Through the Consolidated Air Emissions Reporting (CAER) project, several new fields have been identified for inclusion in EIS. We have taken this opportunity to add these other fields to the CERS XML Schema. The 2020 inventory will be the first inventory year to use the new schema. More information on these changes are provided in Section 4.1.3 and can also be found [here](#).

### 10.2 Bridge Tool

The Bridge Tool will be modified to work with the new CERS Schema for the 2020 inventory. This includes new columns for existing items, as well as the new facility control structures. The revised bridge tool will be available in August of 2020. Note, while the updated EIS Bridge Tools are to be used only for year 2020 submittals and SLT testing prior to January 2021.

### 10.3 Reports

The EIS comparison report allows you to compare any number of datasets against a single, user-specific base dataset. This could be used, for example, to compare point emissions in the NEI 2017 against your agency submitted data for 2020. An additional example would be to compare your submitted data against TRI data so you can see what facilities have reported to TRI and what is being reported by your agency. The comparison reports provide an absolute difference, percent difference and ratio between the baseline data value and the comparison value for each dataset being compared. We encourage SLT air agencies to take advantage of this report after having made your submission as an additional QA tool.

In addition, new reports will be available for assessing whether your submissions have met the 2020 NEI completeness criteria. Use of this completeness report is described in Section 5.

## 11 Conclusion and Points of Contact

The EPA has created this plan to assist SLT agencies with their own planning needs for the 2020 NEI cycle. Please direct comments on this plan to [Rich Mason](#). The EPA recognizes that SLT air agency staff will have many questions, ideas, and improvements that we have not addressed here, and your comments will help us improve this plan and the 2020 NEI process. Points of contact for various NEI data source categories and functions are provided on the [Air Emissions Inventories Points of Contact website](#).