

# NONPOINT WORKGROUP CHARGE

1/19/18

## 1. General Tasks

1. Develop a scope of work for developing base and future year inventories
2. Develop a 2016 inventory in the form of SMOKE inputs
3. Develop projection approaches to 2023 and 2028, including activity forecasts and emissions controls
4. Project the 2016 inventory to 2023 and 2028
5. Develop and/or collect ancillary data needed to prepare the inventories for photochemical grid models
6. Document the process and data used to develop the base and future year inventories

## 2. Inventory Years

- Base year = 2016
- Projection Years = 2023, 2028

## 3. Timing and Deliverables

The expected timeline for completing the inventory, with interim milestones, are as follows:

- January 2018: 2016alpha
- Summer 2018: 2016beta with projections to 2028
- Early 2019: 2016v1.0 with projections to 2023 and 2028

## 4. Documentation

Data files will not be considered complete without documentation. Documentation will be based on the Inventory Collaborative [Specification Sheet Format](#). The workgroup is charged with providing documentation for the 2016 and future year nonpoint inventory development process and data in the form of a specification sheet. Per the specification sheet template, documentation will include data sources, processing, inventory analysis, projection methods, and workgroup membership.

## 5. Workgroup

The workgroup will be composed of state and EPA staff who have volunteered to review and as necessary improve the draft Nonpoint emissions input files and the draft methodologies to grow and control the inputs. The workgroup will be led by two leads: Caroline Farkas (EPA) and Chris Swab (Oregon DEQ). As implied by the name, each workgroup member agrees to contribute substantially to

the technical development, documentation and/or communication of the final work products. No contractor support is anticipated for workgroup activities. EPA staff at OAQPS are directed to provide data, information and advice to the workgroup as requested. The workgroup will meet at least monthly between January and December 2018 to coordinate their work. The workgroup will provide periodic analysis and progress briefings to the 2016 leadership workgroup and the national Nonpoint workgroup. Each workgroup should plan to use their own resources to store and share files among themselves. The Nonpoint workgroup is responsible to the 2016 leadership committee who may revise the charge as needed. A list of current Nonpoint group members may be found in the attachment.

## **6. Scope**

The Nonpoint workgroup is charged with delivering working base and future non-point emission files in SMOKE input format for use in air quality modeling for the target dates of (1) August 2018 and (2) January 2019. In addition, the initial documentation will be updated to reflect changes to the initial draft materials. If these are not provided by the target dates, the modeling team is directed to proceed with the last complete working set, which, at a minimum, may be the initial EPA draft Nonpoint files. The selected base and future Nonpoint files will be quality assured by USEPA. The files will be named by the workgroup according to a naming convention devised by the 2016 leadership workgroup. SMOKE input data files are the format desired, however in some cases the workgroup may have to process inventory data through SMOKE.

### **6.1 Initial Materials**

Initial materials include 1) draft 2016 alpha Nonpoint files, 2) Draft growth and control files in Emission Modeling Framework (EMF) format; and 3) documentation. The draft 2016 alpha Nonpoint files will be annual averages in FF10 format and will be for every county in the Continental United States (CONUS). The emissions will be based on the 2014NEIv2 with improvements as described in the draft documentation also provided by EPA. The emissions files will be shared by EPA for download from an ftp. In addition, files assigning spatial and temporal distribution by SCC may be provided.

### **6.2 Source Categories**

Among the first tasks of the Nonpoint group will be to decide which of sub-sectors will be improved, and how they should be improved. For the 2014 NEI, EPA worked with a group of State, local, and regional planning organization representatives to create new methodology for specific categories. The effort resulted in Microsoft Access Tools that allow S/L/T agencies to calculate annual emissions from specific source categories for ongoing NEI data submittals. Some of the categories may be nearly finalized before the workgroup gets started, while others may be at a good spot for the group to give feedback or work collaboratively with Abt Associates (EPA contractor) while Abt continues to work on the tools. Table 1 details core sectors and categories of potential interest for EI Modeling Platform development, including those categories covered by Abt. The Nonpoint group should decide which categories in Table 1, or any additional categories, should be prioritized.

**Table 1.** Potential nonpoint sectors

<b>Core Sector</b>	<b>Categories</b>
EPA Tools Categories: Used in previous NEI cycles	Non-permitted fossil fuel combustion (c)
	Residential wood combustion (b)
	Solvent use: coating, degreasing, graphic arts (c)
Agriculture	CAFO
	Pesticide application (a)
	Fertilizer application (a)
Fugitive dust	Construction (a)
	Paved road (b)
	Unpaved road (b)
	Agricultural tilling (a)
	Mining & quarrying (a)
Waste disposal	Landfills
	Open burning (a)
	Wastewater treatment (c)
Other nonpoint	Architectural surface coating
	Asphalt paving (a)
	Commercial cooking (b)
	Consumer & commercial solvent use
	Cremation
	Dry cleaning
	Residential charcoal grilling (a)
Petroleum storage, transport and dispensing	Aviation gas (a)
	Bulk terminals (non-permitted)
	Portable fuel containers (PFC)
	Truck transport
	Stage I gasoline distribution (c)
	Stage II gasoline distribution
Hg categories (b)	Dental alloy
	Cremation
	Fluorescent lamp breakage

(a) Abt Associates Bin 1 category: Needs final QA. Methodology (NEMO) posted to EPA SharePoint site.

(b) Abt Associates Bin 2 category: Abt has begun work on these categories. The RWC tool is nearly finished and it is anticipated that there will be no method change.

(c) Abt Associates Bin 3 category: Work not started due to budget constraints. Solvent and fuels tools are completed and it is anticipated that there will be no method change to these tools.

## 7. Inventory Development

### 7.1 Base Year

The workgroup may choose to analyze the initial emissions and documentation to identify outliers and anomalies. In addition, the workgroup may identify new sources of input data. Consideration may be given to temporal and spatial aspects of the data. Chemical speciation of the output may be reviewed and revised. The workgroup will be responsible for making changes to the emissions and providing adequate documentation and QC of the changes; see section 8 for suggested QC checks before submittal to EPA.

Ideally, consistent methods should be used to estimate emissions across the country to the extent that input data supports this. In the past state input files have been considered of higher quality and incorporated instead of the EPA defaults, but this can lead to discontinuities in methods used in different parts of the country. With the introduction of highly resolved new datasets as described in the initial draft documentation, a higher standard may be set to accept state provided data. The workgroup should evaluate this question and develop and implement a plan to analyze, quality assure, document and incorporate state data. At a minimum, state data should result from recognized sources and the state should provide documentation of their approach and sources. The workgroup will devise and execute a plan to include such data and documentation into the reference input files.

### 7.2 SMOKE input format

For reference, the SMOKE User's Manual may be found here:

<https://www.cmascenter.org/smoke/documentation/4.5/html/>

SMOKE input file format may be found here, nonpoint files beginning with prefix AR\*

<https://www.cmascenter.org/smoke/documentation/4.5/html/ch08s02.html>

*(Note - not all fields of the 2014 EI Modeling Platform v.7.0 nonpoint SMOKE input files are populated)*

### 7.3 Chemical Speciation, Temporal and Spatial Data Review

As a starting point for consideration and review of chemical speciation, temporal profiles and spatial surrogate data for model platform development, information on data used in the 2014 EI Modeling Platform v.7.0 may be found here:

<https://www.epa.gov/air-emissions-modeling/2014-version-70-platform>

### 7.4 Future Year Inventory Development

This workgroup is charged spinning off a subgroup to updating the universal growth factors used across both point and nonpoint sources by SCC. These factors are based on indicators such as fuel usage (from the annual Energy Output from the Energy Information Agency EIA-AEO), population and business patterns, etc. Initial growth and control factors along with documentation will be provided in EMF packet format by EPA for download from an ftp for a limited timeframe. Except for the northeastern states, where defaults were exchanged for state specific growth factors, these factors will be national or regional in nature. The workgroup will examine these factors and decide on what factors should be

updated and how they should be updated. The workgroup may choose to analyze the initial packets and documentation to identify outliers and anomalies. In addition, the workgroup may identify new sources of input data. Only highly reliable data sources should be considered. The workgroup will be responsible for making changes to the packets and providing adequate documentation and QA of the changes. At a minimum, the fuel usage factors from the EIA-AEO should be updated to reflect AEO 2018 when they become available in spring 2018.

As a starting point for consideration and review of projection data, nonpoint sector projection data for 2011 NEI to 2023 methods may be found here:

[https://www.epa.gov/sites/production/files/2017-11/documents/2011v6.3\\_2023en\\_update\\_emismod\\_tsd\\_oct2017.pdf](https://www.epa.gov/sites/production/files/2017-11/documents/2011v6.3_2023en_update_emismod_tsd_oct2017.pdf)  
(2011 Emissions Modeling Platform for the Year 2023)

## **8. QC Checks Prior to EPA Delivery**

In addition to the initial outlier and anomaly check, the workgroup should perform a final QC check, time permitting. The QC check will consist of a ranking check for outliers, a check for expected pollutants, followed by initial mapping if necessary.

## Attachment

Current Nonpoint Group members, shaded cells indicate group co-leads

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