

Emissions Inventory Workgroup

AIRPACT Emissions Inventory Update

NW-AIRQUEST Annual Meeting

Seattle, WA

June 12, 2018

AIRPACT Emissions Inventory Update

Update schedule: Every 3 years to correspond to National Emissions Inventory (NEI) cycle.

- Last major update approximately 3 years ago.
- Partial updates in interim.

Main Data Sources:

- State inventories.
- EPA NEI 2014 v2, EPA 2016 modeling platform (if timely).
- Canadian inventories.

AIRPACT Emissions Inventory Update

Base Year: Nearest year available for forecast period. Differs by source category and area.

Pollutants: Criteria, ammonia, some toxic tracers.

SMOKE Version: 4.5

AIRPACT Emissions Inventory Update

Sources except fires and biogenics

Idaho, Oregon, Washington

Point Sources: 2017 state emission inventories. 2014 NEIv2 or 2016 platform for gap filling, if necessary.

Aircraft: 2014 NEIv2 or 2016 platform.

Confined Animal Feeding Operations (CAFOs): 2014 NEIv2 or 2016 platform county total estimates allocated to point locations provided by states for counties and animal types where locations are available. Otherwise, treat as nonpoint county totals.

AIRPACT Emissions Inventory Update

Sources except fires and biogenics

Idaho, Oregon, Washington

Nonpoint: 2014 NEIv2 or 2016 platform for most sources.

- **Residential Wood Combustion:** Current AIRPACT already has most recent OR estimates, but they may update to 2017. WA may update 2014 estimates, or produce 2017 estimates.

Locomotives: 2014 NEIv2 or 2016 platform.

Commercial Marine: 2014 NEIv2 or 2016 platform for ID, OR, and WA waters outside of Puget Sound and Straits. 2016 WA maritime EI for Puget Sound Straits.

AIRPACT Emissions Inventory Update

Sources except fires and biogenics

Idaho, Oregon, Washington

Nonroad (MOVES sources): States will run MOVES for 2019.

Onroad: States developed 2019 MOVES inputs and activity data. IDEQ (Wei Zhang) generated the static lookup tables and set up the daily SMOKE-MOVES model run process. The files are complete and can be integrated into AIRPACT. Refueling emissions are included.

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Sources except fires and biogenics

Border States

Point, Nonpoint, Locomotives, Commercial Marine, Aircraft: 2014 NEIv2 or 2016 platform.

Nonroad (MOVES sources): States will run MOVES for 2019.

Onroad: States developed 2019 MOVES inputs and activity data. IDEQ (Wei Zhang) generated the static lookup tables and set up the daily SMOKE-MOVES model run process. The files are complete and can be integrated into AIRPACT. Refueling emissions are included.

AIRPACT Emissions Inventory Update

Sources except fires and biogenics

Canada

Onroad: States develop 2019 MOVES inputs. Activity data – we need to contact Canadian agencies for data availability. IDEQ generated the static lookup tables and set up the daily SMOKE-MOVES model run process.

Other sources: We will contact Canadian agencies for data availability. EPA modeling platforms.

AIRPACT Emissions Inventory Update

Fires and biogenics

Biogenics: Emissions are calculated at WSU on a daily basis using the Model of Emissions of Gases and Aerosols from Nature (MEGAN).

Fires: Wildfire and prescribed burn emissions are calculated at WSU on a daily basis, using the US Forest Service BlueSky model (v3.5.1) and the Satellite Mapping Automatic Reanalysis Tool for Fire Incident Reconciliation v2 (SMARTFIRE-2).

AIRPACT Emissions Inventory Update

Supporting Data

Review spatial surrogates, temporal profiles, and chemical speciation profiles.

Review report formats.

Schedule

Late 2018 or early 2019

AIRPACT Emissions Inventory Update

Related work

- Developed spatial surrogates for 1.3-km grid to use in special projects.
- Explore bidirectional Ammonia CMAQ processing.
- Ecology's Environmental Assessment Program is working with WSU to study ocean acidification in Puget Sound and nearby waters. We are providing an anthropogenic CO₂ inventory for WA for the project.

We'll miss you, Chris!
Thank you so much!
All our best to you and your family!

