

Introduction to Emission Inventories for Tribes

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Creating an emission inventory is a process in which air quality managers collect information on the emissions for particular pollution sources within a specific area, such as a reservation, to use in making planning and policy decisions.

It is important to note that an emission inventory serves a different purpose than air quality monitoring. An *emission inventory* tells a tribe what sources are emitting which pollutants into the air. *Air quality monitoring* samples the air to measure which pollutants are present and in what amounts, but does not tell where the pollutants are coming from. Emission inventories and air quality monitoring are both valuable tools for identifying and addressing air quality concerns on tribal lands, and EPA Regional contacts can help tribes decide where to start.

An Emission Inventory Helps Tribes Evaluate Air Quality

An emission inventory can help a tribe understand air quality on its lands and whether an air pollution control program is needed. A tribal emission inventory can include information about criteria air pollutants, hazardous air pollutants, major and minor point sources, area sources, and mobile sources.

A tribal emission inventory would include one year of emission data for sources associated with tribal land. Sources could include:

- **point sources** such as power plants or factories;
- **nonpoint sources** such as open burning or wood stoves; and
- **mobile sources** such as cars, trucks or tractors.

Tribes can also use an emission inventory to collect information about sources of greenhouse gas emissions.

Each tribal emission inventory should be tailored to the needs of the tribe that creates it. A tribal emission inventory could include only major sources and criteria pollutants, or a tribe might choose to inventory just hazardous air pollutants or area sources. Each tribe should determine the best scope for its inventory.

Reasons to Complete an Emission Inventory

- To identify sources of air pollution and problem areas
- To track trends in air quality on tribal lands
- To measure progress toward air quality goals
- To establish a baseline for future planning for air quality management
- To determine the need for ambient air monitoring and to site monitors
- To take an active and constructive role in regional and national air quality planning processes
- To demonstrate jurisdiction and capacity of tribes to address air quality on tribal lands

- To establish a basis for developing on-reservation permitting programs
- To provide input for human health risk assessment studies
- To improve EPA's and the tribe's knowledge about air quality nationwide and potentially be included in the National Emission Inventory (NEI)

The EPA Office of Air Quality Planning and Standards (EPA OAQPS) uses the data from individual emission inventories submitted by state, local and tribal governments to compile the National Emission Inventory (NEI).

Features of the NEI

- Lists sources and what was emitted for one year
- Covers the entire United States
- Includes criteria air pollutants and hazardous air pollutants
- Compiled every third year (2005, 2008, 2011, etc)
- Created from data submitted through the Emissions Inventory System (EIS)

Under the Tribal Authority Rule tribes are not required to develop an emission inventory or submit it to EPA OAQPS for the NEI, but EPA strongly encourages tribes to do so. Tribes also are not required to meet a due date for submitting an emission inventory so may miss the deadline for inclusion in the NEI. However, EPA OAQPS will accept and store all data submitted. The data are useful as a starting point for local planning, more refined air quality analysis, and future versions of the NEI.

Steps to Create an Emission Inventory

The Tribal Emission Inventory Software Solution (TEISS) is free to all federally recognized U.S. tribes and was designed specifically to help tribes develop emission inventories. TEISS is a software program that helps tribal air professionals calculate, organize, store and report on air pollution emissions on tribal lands. TEISS provides guidance on what type of data to enter, conducts calculations and unit conversions, and creates clear reports and maps for analysis.

There are 5 basic steps for tribes to create an emission inventory using TEISS.

Step 1: Plan the inventory

- Use TEISS to complete an Inventory Preparation Plan (IPP).
(If the tribe received an EPA grant for the emission inventory, the tribe is required to complete a Quality Assurance Project Plan (QAPP). The tribe can use the IPP as the basis of the QAPP, which EPA requires to ensure that data collected is valid and can be relied upon for its intended purpose. The tribe should work on developing an EPA-approved QAPP with the Tribal Air Coordinator in its Region.)
- Identify the purpose, geographic boundary and time period of the inventory.
- Identify the sources and pollutants of interest to the tribe.

Step 2: Collect data to estimate emissions

- Gather detailed information about sources and what they emit.

Step 3: Enter data into TEISS

- Use TEISS to calculate emission estimates for each source and organize the results.
- Analyze what the results show about air pollution and its impact on the tribal community.

Step 4: Apply quality assurance/quality control (QA/QC) procedures

- Document all data collection efforts and calculations.
- Use TEISS to document the emissions estimating methods.

Step 5: Write a summary report on the results organized in TEISS

- Submit the report to the EPA Regional Office (if this was a requirement under a grant) and/or the Institute for Tribal Environmental Professionals (ITEP) for review.
- Receive feedback from the EPA Regional Office and/or ITEP so the report can be finalized.
- Provide the final report to tribal leaders for use in setting tribal environmental priorities.
- File the report internally so the tribe can use it as a starting point when the emission inventory needs updated.

EPA encourages tribes to add Step 6.

Step 6: Submit the emission inventory to EPA OAQPS for the NEI.

- Transmit data to EPA OAQPS through the Emissions Inventory System (EIS).

Some tribes may have agreed to submit an emission inventory to an EPA Regional Office under the terms of a grant, but Regions do not submit tribal emission inventories to OAQPS for the NEI. A tribe can submit an emission inventory to OAQPS for the NEI on its own, or ITEP can submit the emission inventory on the tribe's behalf. Starting in 2009, all submissions for the NEI will need to be formatted in the Consolidated Emissions Reporting Schema (CERS) and submitted to OAQPS through the new Emissions Inventory System (EIS). TEISS will be updated to be compatible with EIS.

Tribes should set a schedule for updating and maintaining the emission inventory in TEISS as a reference for future air quality management planning. EPA also encourages tribes that have an older, paper-only emission inventory on file to enter the data into TEISS. Having the older data in TEISS will give the tribe a head start on updating future inventories.

Help is Available

ITEP can provide technical assistance, including QA and TEISS help. Most EPA Regions also have technical resources available to tribes for review and QA of emission inventories.

Learn More with Online Training

EPA recommends two online courses to tribal air professionals interested in completing an emission inventory.

Beginner course

This session is designed for individuals with no knowledge or limited knowledge of completing an emission inventory. This course is hosted on EPA's Air Pollution Training Institute Web site. <http://www.epa.gov/air/oaqps/eog/course419a/index.html>

Intermediate course

This session is for tribal air professionals and others interested in learning how to use TEISS to complete an emission inventory. TEISS is available at no cost to all federally recognized U.S. Indian Tribes. The training helps a tribe choose the type of emission inventory that best suits its needs. This course is hosted on the ITEP Web site.

http://www4.nau.edu/itep/trainings/teiss_OPx/index.asp

Note: This training remains the best resource for learning to use TEISS during EPA's transition to the Emissions Inventory System (EIS) in 2009. The EIS is the system state, local, and tribal governments will use to report data to EPA OAQPS for the NEI. EPA expects to update TEISS and the training courses to reflect the transition to EIS in 2009.

Other Resources

Tribes can consult these resources for additional information on emission inventories.

For technical information

- EPA's Clearinghouse for Inventories and Emission Factors (CHIEF)
<http://www.epa.gov/ttn/chief/>
- ITEP resource page (includes information on how to get TEISS)
http://www4.nau.edu/itep/Resources/terc_air_emission.asp

For grant information

- Tribal Air Grants: A Menu of Options
<http://yosemite.epa.gov/R10/airpage.nsf/webpage/Tribal+Air+Grants:+A+Menu+of+Options>
- Menu item for conducting an emission inventory
[http://yosemite.epa.gov/R10/AIRPAGE.NSF/283d45bd5bb068e68825650f0064cdc2/e34950b285534aa988256dfe0063be55/\\$FILE/Emissions%20Inventory%20v05.pdf](http://yosemite.epa.gov/R10/AIRPAGE.NSF/283d45bd5bb068e68825650f0064cdc2/e34950b285534aa988256dfe0063be55/$FILE/Emissions%20Inventory%20v05.pdf)