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Chapter 3 Goal Setting & Data Gathering for a TIP

Since a Tribal Implementation Plan (TIP) only addresses the criteria pollutants regulated by the National Ambient Air Quality Standards (NAAQS), it may be just one part of a broader tribal air program that is concerned with many different pollutants and air quality problems. This chapter explains the federal air quality designations based on the NAAQS, and discusses what your tribe should consider when setting its air quality goals in relationship to the NAAQS. Technical information can help the tribe evaluate the air quality on your reservation, set air quality goals, and determine the most appropriate control measures for meeting those goals. This chapter also discusses two tools for gathering such information: emissions inventories and air quality monitoring systems.

Air Quality Designations

How is air quality classified in relationship to the NAAQS?

Bighorn Canyon National Recreation Area, MT & WY
Established by an act of Congress on October 15, 1966, the Bighorn Canyon National Recreation Area houses the Yellowtail Dam. Named after the famous Crow chairman Robert Yellowtail, the dam harnesses the waters of the Bighorn River. (National Parks Service)

The Clean Air Act (CAA) section 107(d) establishes three air quality designations relative to the NAAQS:

» **Nonattainment** - any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the primary or secondary NAAQS for the pollutant

» **Attainment** - any area (other than an area identified as being in nonattainment) that meets the primary or secondary NAAQS for the pollutant

» **Unclassifiable** - any area that cannot be classified on the basis of available information as meeting or not meeting the primary or secondary NAAQS for the pollutant

EPA is generally required by the Clean Air Act to make designations for the entire country 2 to 3 years after each new standard is adopted.[1] However, for the 8-hour ozone standard and $PM_{2.5}$ NAAQS, Congress established specific schedules and EPA is now moving forward with implementation and rules for the $PM_{2.5}$ and the 8-hour ozone standards. It is the EPA's intent to promulgate designations for those standards after 2003. A variety of tools are used to determine the designation for an airshed area, including nearby monitors, modeling, or other methods to determine if an area is or is not meeting the standard. Air pollutant modeling has proven that some pollutants can be transported great distances. Therefore, it is possible that relatively rural areas (e. g. Indian country) with no nearby sources of air pollutant emissions may not meet the NAAQS. An area can be in attainment for some pollutants and in nonattainment for others. In some cases when there is insufficient air quality data to determine whether ar area meets the NAAQS, the area may be designated as "unclassifiable." Such areas are treated in the same manner as an attainment area. The

attainment/nonattainment status of your reservation may influence your air quality goals.

Some areas in the eastern US that are designated attainment are treated in the same manner as nonattainment. In the 1990 CAAA these areas were established by Congress as the Ozone Transport Region. The Region is comprised of the States of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and the Consolidated Metropolitan Statistical Area that includes the District of Columbia..

" **Attainment Areas**

The CAA establishes three classes of attainment/ unclassifiable areas, Class I, II, and III.[2] Class I areas are held to the strictest air pollution standards. "Federal Class I" areas are the Class I areas that were created in the CAA. These areas include national wilderness areas and national memorial parks greater than 5,000 acres, national parks greater than 6,000 acres, and international parks. Additional areas have since been reclassified as Class I areas, including some Indian reservations.

Class II areas initially were all those areas that were in attainment or unclassifiable that were not established as federal Class I areas. Class II areas can be redesignated as Class I and receive greater air quality protection; information on that process is found later in Chapter 4 in the section on Regional Air Quality. Class II areas can also be redesignated as Class III areas, which allows for more intensive development and greater emissions of criteria pollutants.

" **Nonattainment Areas**

The 1990 CAA Amendments require nonattainment areas in states to be further classified for some pollutants, depending on the severity of the air pollution problem.[3] Areas designated nonattainment for the 1-hour ozone standard are divided into five classifications, depending on the ambient air quality: marginal, moderate, serious, severe, and extreme.[4] The regulatory requirements increase for each class of nonattainment area, with extreme ozone nonattainment areas having the most stringent set of

requirements. Attainment deadlines also vary from 3 years for marginal areas to 20 years for extreme areas.

Carbon monoxide and particulate matter (with a diameter less than or equal to 10 micrometers; PM_{10}) nonattainment areas are classified as either moderate or serious.[5] Each class of nonattainment area has different regulatory requirements and attainment deadlines. As with ozone nonattainment areas, tribes have the flexibility to work with EPA to ensure that appropriate regulatory requirements are applied to Indian country sources.

For lead, sulfur oxides, and nitrogen dioxide nonattainment areas there are no further classifications. Currently, there are no nitrogen dioxide nonattainment areas.[6]

To find out if your tribe's reservation is in or near a nonattainment area, your tribe can consult the Green Book - Nonattainment Areas for Criteria Pollutants. The Green Book contains nonattainment areas by county which could be helpful in determining air quality if your tribe submits a designation recommendation to EPA (see below). Online, The Green Book can be found at http://www.epa.gov/oar/oaqps/greenbook. The Green Book also contains pertinent Federal Register notices.[7]

How are air quality areas determined?

Figure 3-1. Multiple nonattainment (NA) areas within a larger NA area. This map shows two SO_2 NA areas inside the Pittsburgh-Beaver Valley ozone NA area.

For states, after the promulgation of a new or revised NAAQS, the Governor of each state is required to submit to the EPA a list of recommendations for all areas that are in nonattainment, attainment, or are unclassifiable with respect to the new or revised standards. A state recommendation for designation of an area including or adjoining an area of Indian Country does not necessarily determine the designation for that area of Indian country. However, the conditions that support the state's designation recommendation, such as air quality data and the location of sources, may indicate the likelihood that similar conditions exist in that area of Indian Country.

Tribes are encouraged, but not required, to submit designation recommendations for their reservations, or other areas under their jurisdiction, to EPA. In cases where tribes do not make recommendations, the EPA, upon

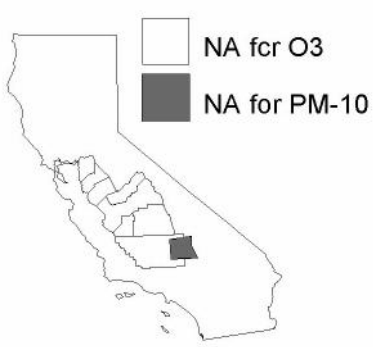


Figure 3-2. Overlapping NA areas. This map shows the Searles Valley PM_{10} NA area which partially overlaps the San Joaquin Valley ozone NA area.

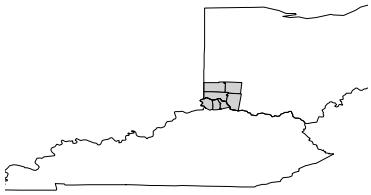


Figure 3-3. A NA area in more than one state. This map shows the Cincinnati-Hamilton moderate O_3 NA area, which overlaps the states of Ohio and Kentucky.

consultation with the respective tribe(s), will promulgate the designation it deems appropriate.[8] If a tribe chooses to recommend a designation, EPA will consult with the affected tribe if EPA wishes to modify the recommendation.

Designations tell the public about the nature of the air quality in a given area for one pollutant. The EPA in the past has used political or physical boundaries as the default boundaries for area designations. Political boundaries could include Metropolitan Statistical Area (MSA) or Consolidated Metropolitan Statistical Area (C/MSA) boundaries, county or Indian Country boundaries. MSAs and C/MSAs are often used as useful default boundaries for urban areas which capture a densely populated and socially and economically integrated area. Physical boundaries such as a watershed, valley, or mountain range, may also define a designation area.

Designation boundaries can be larger or smaller than any area of Indian Country, county, or urban area. A tribe may want to recommend larger area boundaries, for example, if sources outside their reservation or other areas under their jurisdiction contribute to violations within such areas. On the other hand, a tribe may want to recommend smaller boundaries, for example, if a proposed nonattainment area covers multiple air basins or includes counties or areas of Indian Country which are rural in nature. It is possible for several small nonattainment areas for one pollutant to be found inside one larger one for a different pollutant (see Figure 3-1), for two areas designated nonattainment for different pollutants to overlap (see Figure 3-2)., or for a nonattainment area to encompass area in more than one state (see Figure 3-3).

Some of the factors tribes may wish to consider when submitting nonattainment area boundary recommendations, rather than C/MSA boundaries, particularly in Indian country that may not have adequate or any air quality monitors, include:

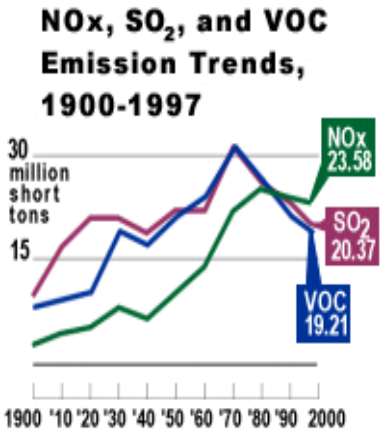
» Location of and data from nearby air quality monitors
» Geographic location of the land

» Proximity to the nearest designated nonattainment area
» Prevailing meteorology
» Location of nearby emissions sources both inside and outside the area
» Population density
» Degree of urbanization on or nearby the area (including existing and future commercial and industrial development)
» Current level of emissions control
» Expected future growth of emissions sources

Air Quality Goals

What should be considered in setting air quality goals for your TIP?

The existing air quality on your tribe's reservation is the most important factor in determining the goals for your TIP. Diverse factors can affect air quality on reservations. Some reservations are adjacent to urban areas and are affected by pollutants from the urban area as well as sources within their boundaries. Other reservations are more rural, and may or may not have sources of pollutants within their boundaries. Because pollutants can travel great distances, reservations may also be affected by emissions from sources far outside their boundaries.



National emission trends.[9]

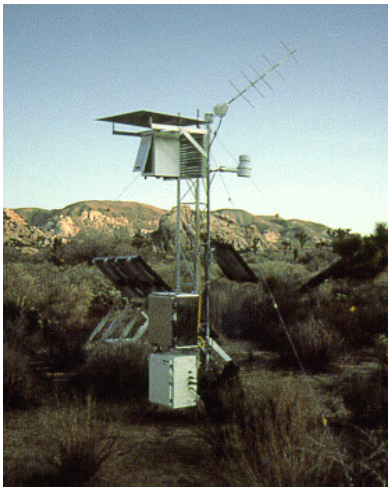
Two measures of the existing air quality are the concentrations of the criteria pollutants (particulate matter, ozone, sulfur oxides, nitrogen dioxide, carbon monoxide, and lead) and the impaired view of distant vistas. For those pollutants with concentrations below the NAAQS, the tribe would develop a TIP to specify the actions that will maintain good air quality and prevent deterioration of air quality. For those pollutants with concentrations above the NAAQS, the tribe would develop a TIP to specify the actions the tribe could take to reduce the emissions from sources on the reservation. If there are some pollutants that meet the NAAQS and others that violate the NAAQS, or if the tribe does not know about the air quality, a tribe may develop both types of TIPs, one to maintain air quality and one to improve it, depending on the pollutant.

In addition to the existing air quality on your reservation, other factors to consider when setting air quality goals include: the importance or value of clean air and clear

vistas to the members of your tribe and the tribal economy; the existing sources and types of air pollutants on or near your reservation; public health or environmental problems related to air quality; and the potential for new air pollution sources to locate on your reservation. You may also want to develop air quality standards that are more stringent than the NAAQS for criteria pollutants. Tribes can also develop air quality goals for non-criteria pollutants to address their particular social, cultural, and environmental needs; these goals and strategies to meet them would not be included in a TIP.

What are some typical initial air quality goals?

Your preliminary air quality goal may be to assess the current situation on your reservation by developing an emissions inventory and establishing an air quality monitoring network. An **emissions inventory** is a list of facilities and activities that cause air pollution, including the types and amounts of pollutants emitted from those activities. An **air quality monitoring network** is one or more sites where instruments are located to sample the air continuously, daily, or periodically. Meteorological stations often are part of air quality monitoring networks. Monitoring data can be used to determine the concentrations of pollutants in your communities, and which of the NAAQS, if any, are being violated. Information on emissions inventories and air quality monitoring is provided later in this chapter.



Air quality monitoring equipment.

This is an Optec NGN-2 nephelometer operated with solar power in the Mojave Desert. Also on the tower are an air temperature sensor, datalogger, and data collection platform with antenna.
(Photo courtesy of Air Resource Specialists, Inc.)

If your tribe has good reason to believe that existing pollutant concentrations are below the NAAQS (e.g., there are no significant sources of air pollution on your reservation or in adjacent areas), your goal may be to develop maintenance strategies for one or more air pollutants. The goal of a maintenance strategy is to limit air pollutant emissions so as to maintain pollutant concentrations at levels below the NAAQS. If there are significant sources of air pollution on your reservation, or in adjacent areas, the existing concentrations of some pollutants may violate the NAAQS. If this is the case, your goal may be to develop an attainment strategy to reduce the concentrations of those pollutants to levels below the NAAQS. For more information on these options, see Chapter 4.

How can nonattainment areas be redesignated as attainment areas?

A nonattainment area can be redesignated to attainment if the following conditions are met:[10]

» The EPA must determine that the NAAQS are attained based on an appropriate demonstration, which could include air quality modeling

» The applicable implementation plan must be fully approved by EPA as meeting all applicable requirements

» The EPA must determine that improvements in air quality are due to permanent and enforceable reductions in emissions; attainment resulting from temporary reductions in emissions rates (such as reduced production, shutdown, or temporary adverse economic conditions) or unusually favorable meteorology would not qualify

» The EPA must fully approve the maintenance plan under the CAA section 175A. Maintenance plans may be submitted prior to or at the same time as the redesignation request. Section 175A defines the general framework of a maintenance plan, which must provide for maintenance of the relevant NAAQS in the aea for at least 10 years after redesignation. The core provisions that should be included to ensure maintenance of the relevant NAAQS are:

  › An attainment emissions inventory
  › A maintenance demonstration showing future emissions will not cause a violation of the NAAQS
  › Contingency measures to promptly correct any violation of the NAAQS that occurs after redesignation, including all measures that were contained in the attainment strategy prior to redesignation

Requirements for Redesignation from Nonattainment to Attainment:

» NAAQS attained
» EPA has approved the implementation plan
» Improvements in air quality are permanent and emissions reductions are enforceable
» EPA has approved the maintenance plan
» All applicable requirements in the attainment strategy are met

Tribes are encouraged to work closely with states and their regional EPA office early in the redesignation process to help ensure that a redesignation request has a high

likelihood of being approved by EPA (see Appendix A, *Tribal Contacts at EPA*).

What if you want to set standards more stringent than the NAAQS?

If the air quality on your reservation is currently better than the NAAQS, your tribe may want to set air quality goals more protective than the NAAQS. The Prevention of Significant Deterioration (PSD) program is a source preconstruction permitting program applicable to areas with air quality that is better than the NAAQS. The primary purpose of the PSD program is to preserve good air quality in areas that meet the NAAQS while still allowing economic development to occur. For more information on this program, see Chapter 4.

Developing An Emissions Inventory

What is an emissions inventory?

An emissions inventory identifies the activities on your reservation that cause air pollution and the types and amounts of pollutants emitted by those activities. A source of air pollution is any activity that causes pollutants to be emitted into the air. An emissions inventory is a quantitative list of the amounts and types of pollutants that are entering the air from all sources within a certain area. The fundamental elements in an emissions inventory are the characteristics and locations of the sources, as well as the amounts and types of pollutants emitted.

How can an emissions inventory be useful to your tribe?

An emissions inventory can help identify air pollution concerns and determine the air quality goals your tribe wants to meet. Detailed information on activities on your reservation that cause air pollution, and the types and quantities of pollutants generated by those activities, can help your tribe set and attain its air quality goals.

An emissions inventory is one of the most basic tools of air quality management. With an emissions inventory, your tribe can simulate air pollutant formation and transport (e.g., ozone), estimate potential pollutant concentrations on your reservation, and estimate the effectiveness of potential emission reduction requirements. Chemical transformation

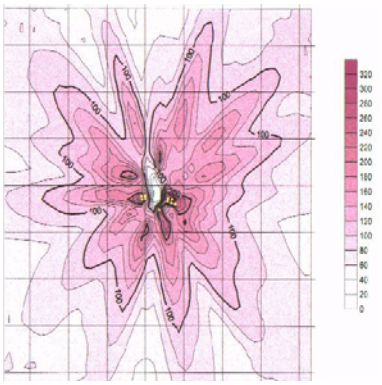
and computer dispersion models use emissions data and meteorological data to project how pollutants will form and spread (disperse) across a region.

Are there any regulations governing the tracking and reporting of emissions?

For many years EPA has maintained a number of requirements for emissions inventory reporting. EPA recently revised and simplified the reporting requirements, added several new requirements related to particulate matter and regional haze, and moved them all to a single location in the Code of Federal Regulations. This action was called the Consolidated Emission Reporting Rule (CERR).[11] Although the notice publishing the rule says specifically that Tribes are not required as a general matter to develop emission inventories or to comply with the requirements of the CERR, it provides additional guidance to Tribes on how to develop and quality assure emission inventories, and discusses some of the benefits of reporting emissions from Tribal lands into the National Emission Inventory.

What types of emissions inventories are there?

There are three types of emissions inventories, depending on the intended use of the data: base-year, periodic, and modeling.



Dispersion models use emissions and meteorological data to project how pollutants will spread (disperse) across a region.[12]

» **Base-year inventories** provide information about the emission levels at the start of pollution-control efforts. These inventories provide a baseline against which progress in reducing or maintaining emissions can be measured. They also inform decision-makers about how much and what types of pollutants are being emitted which can be used in future permitting decisions. The other types of inventories are derived from the base-year inventory, so it is important that it is as comprehensive, accurate, and current as possible.

» **Periodic inventories** are generally done every 1-3 years after the base-year inventory, depending on the needs of your program. Periodic inventories are used to track changes in emissions over the time that emission reduction strategies are implemented in nonattainment areas. They can be compared to the base-year inventory to identify the progress achieved in reducing emissions over the interim period.

» **Modeling inventories** are only prepared to support air quality modeling efforts. Air quality models are used to simulate the chemical reactions of pollutants and their dispersion in the atmosphere. Very specific information on emission sources is required for air quality models (e.g., stack height, emissions temperature, etc.). Modeling inventories are based on either allowable or actual emissions, depending on the purpose of the modeling. Allowable emissions are the type and quantity of emissions allowed by regulations. Allowable emissions for the base-year and projected for the attainment year are used to evaluate whether an attainment strategy will reduce emissions enough to meet the NAAQS. Actual emissions are the type and quantity of emissions actually emitted from sources during normal operation and may be more or less than the allowable emissions. Actual emissions data are used with air quality monitoring data to evaluate model performance.

What is an Inventory Preparation Plan?

Careful and thorough planning can greatly facilitate the inventory development process and prevent the need for costly revisions. Before an inventory is developed, an Inventory Preparation Plan (IPP) should be prepared.[13] An IPP is a concise, prescriptive document that includes inventory objectives and general procedures, and clearly describes how the tribe will document and present the inventory to EPA and/or others.

As part of the IPP process, the tribe should consider:

» Scope of the inventory
» End uses of the data
» Availability and usefulness of existing data
» Strategy for data collection and management

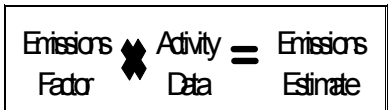
In general, most IPP's:

» Define the geographic inventory area
» Define the attainment or nonattainment status of the area
» Define the scope of the inventory (i.e., identify which types of sources and pollutants will be covered, and for which year)

» Specify who is responsible for preparing the inventory and each person's responsibilities
» Identify plans for data collection, analysis, and emission estimation procedures
» Describe quality control and quality assurance procedures[14]

How does your tribe start creating an emissions inventory?

To begin creating an emissions inventory, your tribe will need to identify potential sources of emissions on your reservation. The EPA's Office of Air Quality Planning and Standards, Emissions Monitoring and Analysis Division, maintains a preliminary database of emissions inventory information on many sources in Indian country and the states. A local business directory and phone book can also be a good starting point. Service and retail businesses can usually be ruled out (with some exceptions, such as sources that use a lot of solvent or gasoline distribution facilities); concentrate on manufacturing, treatment plants, assembly, extraction, storage, engines, and utilities. Other types of sources include burning and dust from construction and unpaved roads.



Formula for calculating emissions estimates.

While planning your inventory, the tribe may want to send a letter to the business asking for general information on the work they do. Your tribe can also obtain information by visiting the facility and asking for a tour. Once you have a list of sources, the tribe can begin compiling information for your inventory.

To collect data, the tribe may need to develop reporting forms. Your regional EPA office and the states surrounding your reservation may have a sample reporting form that your tribe can use or modify. Examples of the type of information it would be useful to obtain from each source:

» The name and location of the source
» The owner/operator's contact information
» A description of the activities causing the emissions
» The source's current compliance status with regulations
» The source's operating parameters and schedules
» The pollutants emitted (controlled and uncontrolled)
» The emission rates of each pollutant emitted
» The control methods used

» Characteristics of the emissions (i.e., ground level, roof level, stack, gas temperature)
» Activity data (i.e., tons per year of input used (e.g. gallons of paint) or output produced)

The EPA provides several resources and guidance documents to assist the tribe in planning and developing an emission inventory.[15]

» *The ClearingHouse for Inventories and Emissions Factors (CHIEF)*

» Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter NAAQS and Regional Haze Regulations

» *The Emissions Inventory Improvement Program (EIIP)*

» The Compilation of Air Pollutant Emission Factors, AP-42, *Volumes I and II*

» Additional information, including the types of sources and emissions to include in an emissions inventory, approaches to inventory development, and additional resources, are provided in Appendix F, *Emissions Inventories*.

Developing An Air Quality Monitoring Program

What is an air quality monitoring program? Does your Tribe need one?

An air quality monitoring program provides information on the ambient pollution levels for a given area. This information can be used to identify changes in air quality and to determine whether the area meets the NAAQS for the criteria pollutants. Air quality data are also important for determining the goals of your TIP and the actions necessary to obtain or sustain good quality air. However, your tribe does not need to have a NAAQS determination or monitors to develop a TIP.

Jay Littlewolf, Administrator of the Northern Cheyenne Tribe's Air Quality Program, checks PM monitoring equipment.

Information on existing monitoring stations is available through the Office of Air Quality Planning and Standards at www.epa.gov/oar/oaqps/qa/monprog.html. You can discuss with EPA what currently available ambient monitoring data may be representative of pollutant levels for your reservation. Based on this discussion, your tribe may decide to accept the existing ambient monitoring networks as being adequate to provide data which are representative of your reservation. Or your tribe may decide, in conjunction with EPA, that additional monitoring on your reservation by either your tribe or EPA is needed to establish and track ambient pollutant levels there.

The tribe is not required to have an air quality monitoring network in order to adopt TIP measures. If your tribe decides to implement an air quality monitoring system, data from an emissions inventory can be useful in determining where to site or locate the monitors.

What should a monitoring program achieve?

Scott Williams, technician for the Norther Cheyenne Tribe's Air Quality Program, changes a filter on a PM monitor.

Monitoring programs usually measure the concentrations of the criteria pollutants across an area at regular intervals; the concentrations of hazardous air pollutants can also be measured. Before designing a monitoring network, it is helpful to determine your purpose in monitoring. Does the tribe want to:

» Determine whether average pollutant concentrations are above or below the NAAQS?
» Determine highest levels of air pollution expected to occur in the area?
» Determine the extent of regional pollutant transport?
» Determine representative levels of air pollution in areas of high population density?
» Determine general background concentrations of pollutants?
» Determine the impact of significant sources of air pollution on overall levels of air pollution?
» Determine the economic, cultural and public welfare-related impacts of pollutants on visibility, vegetation, health, and other factors?

If an objective of your monitoring program is to determine if the NAAQS are being met, the program must satisfy the technical requirements given in 40 CFR 58 to achieve the following goals:[16]

- Acceptable quality assurance procedures, which are necessary to provide data that meet the basic objectives and to minimize loss of data
- Proper equipment and methods
- Proper location and number of monitoring stations
- Proper location of the equipment that collects air samples (after selection of the general location of a monitoring station)
- At least one monitor that operates during air pollution emergency episodes

How does the tribe report and use the data?

Data on air pollution levels obtained using federal reference methods are submitted to the EPA's Aerometric Information Retrieval System-Air Quality System (AIRS-AQS). This database provides easily-retrieved information on the levels of the criteria pollutants in all areas of the country. The EPA's procedures for reporting and using data ensure timely and widespread access to accurate information. Anyone who has access to the World Wide Web may browse and obtain reports from AIRS-AQS at www.epa.gov/airs/.

A monitoring station used by the Norther Cheyenne Tribe's Air Quality Program.

If your tribe is administering an air quality monitoring program, the tribe should also prepare an annual statistical report for the EPA. This report should summarize information about the highest levels recorded for each criteria pollutant and monitoring station.

Your tribe can use the data collected to determine whether the reservation's air quality is better or worse than the NAAQS. If the tribe is collecting data for determining whether an area meets the NAAQS, EPA's regulations require complete data from three consecutive calendar years. The requirement of complete data underscores the importance of following quality assurance procedures because they ensure minimal data loss. If your tribe is collecting data to compare to air quality modeling results, it is also useful to collect meteorological data, such as temperature, wind speed, and wind direction.

How does your tribe start an air quality monitoring program?

Outdoor training and evaluation platform at the TAMS Center in Las Vegas.

In addition to the resources mentioned above, there are additional resources available to assist your tribe in developing an air quality monitoring program:[17]

» 40 CFR Parts 50, 53, 58

» EPA's *Air Pollutant Monitoring* website provides general monitoring information and information on existing monitoring systems (www.epa.gov/oar/oaqps/montring.html).

» The EPA's *Ambient Monitoring Technology Information Center* (www.epa.gov/ttn/amtic) provides technical information on monitoring programs and methods, along with monitoring guidance documents and articles.

» The *Tribal Air Monitoring Support Center (TAMS)*, located at EPA's Radiation and Indoor Environments National Laboratory at the University of Nevada, Las Vegas, provides hands-on training and support services for tribal air professionals on the topic of air quality monitoring (www.cet.nau.edu/itep/TAMS/TAMS_default.htm).

» Additional information, including the types of monitors and monitoring networks, the objectives of a monitoring network, the spatial scales for monitoring networks, and additional resources are provided in Appendix G *Air Quality Monitoring*.

Conclusion

The air quality goals your tribe sets for criteria pollutants can be addressed in a TIP. To set such goals, it may be helpful to gather data about the sources of air pollution and the ambient air quality on your reservation through an emissions inventory and an air quality monitoring program. If your tribe develops a monitoring program, your tribe should periodically review it to determine whether it achieves the basic objectives. If the program does not achieve its objectives, it can be modified. The tribe can use information from these data gathering techniques to guide your decision-making, determine which control strategies to use, and later, evaluate the effects of your efforts.

Endnotes

1. The EPA revised the air quality standards for particulate matter and ground level ozone in 1997. Implementation of the revised standards was delayed by litigation until February 27, 2001, when the U.S. Supreme Court ruled in the case. EPA must determine how it will implement the revised standards consistent with the Court's decision.

2. For more information on Class I, II, and III designations of attainment areas, see the CAA section 162.

3. For more information on the NAAQS, see the Office of Air Quality Planning and Standards' NAAQS information page (www.epa.gov/airs/criteria.html) and criteria pollutant page (www.epa.gov/oar/aqtrnd97/brochure/sixprin.html). Information on NAAQS standards can be found at www.epa.gov/ttn/oarpg/t1main.html. For more information on nonattainment areas, see the Office of Air Quality Planning and Standards nonattainment website, www.epa.gov/airs/nonattn.html. For a complete listing of nonattainment areas, see EPA's *Green Book*, accessible at www.epa.gov/oar/oaqps/greenbk/index.html.

4. For more information on ozone nonattainment area requirements, see the CAA sections 181 through 185.

5. For more information on carbon monoxide nonattainment area requirements, see the CAA sections 186 and 187. For more information on PM nonattainment area requirements, see the CAA sections 188 through 190.

6. For more information on sulfur oxide, lead, or nitrogen dioxide nonattainment area requirements, see the CAA sections 191 and 192.

7. The Green Book can also be found at 40 CFR Part 81.

8. For more information on ozone designations, see EPA's *Guidance on 8-Hour Ozone Designations for Indian Tribes,* available on the Office of Air and Radiation's TribalAIR website, www.epa.gov/oar/tribal/airprogs/tribe8hd.html.

9. This graph is from the *National Air Pollutant Emission Trends Update: 1970 - 1997*, December 1998, www.epa.gov/ttn/chief/trends/trends97/index.html.

10. The criteria for redesignation from nonattaiment to attainment are given in the CAA section 107(d)(3)(E).

11. The Consolidated Emission Reporting Rule (CERR) can be found in the Federal Register, 67 FR 39602, June 10, 2002 (www.access.gpo.gov/su_docs/fedreg/a0206/oc.html).

12. Image provided courtesy of AirNova, Pennsauken, NJ.

13. For more information on developing an Inventory Preparation Plan, see EPA's, *Handbook for Criteria Pollutant Inventory Development: A Beginner's Guide for Point and Area Sources* (www.epa.gov/ttn/chief/txt/beginner.pdf) or see *Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter NAAQS and Regional Haze Regulations* (www.epa.gov/ttn/chief/txt/eidocfnl.pdf; reference number EPA-454/R-99-006).

14. Quality Control (QC) includes the system of technical activities your tribe implements to measure and control the quality of the inventory as it is being developed. Examples of QC measures include technical reviews, accuracy checks, and the use of approved emissions estimation procedures. Quality Assurance (QA) is an external review and audit conducted by personnel not working on the inventory's development to assess the effectiveness of the QC program and the completeness and accuracy of the inventory.

15. The following resources on emissions inventories are presented in this chapter:
    - » The ClearingHouse for Inventories and Emissions Factors (CHIEF) at www.epa.gov/ttn/chief is an on-line resources with information on emissions factors, emissions inventories, and emissions estimation software. This site includes a link to the *Handbook for Criteria Pollutant Inventory Development: A Beginner's Guide for Point and Area Sources* (reference number EPA-454/R-99-037).
    - » *The Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter NAAQS and Regional Haze Regulations,* April 1999, www.epa.gov/ttn/chief/txt/eidocfnl.pdf (reference number EPA-454/R-99-006). This document contains information about preparing IPPs, as well as information concerning the preparation of emission inventories for nonattainment area planing.
    - » The Emissions Inventory Improvement Program (EIIP). The primary guidance on inventory development is summarized in the *EIIP Document Series, Volumes I-X,* accessible through the EIIP website (www.epa.gov/ttn/chief/eiip/techreport/index.html) and the National Technical Information Service (www.ntis.gov/ or (703) 605-6000). These volumes contain information on planning an emissions inventory, estimating emissions from different types of sources, data management, recordkeeping, and quality control and quality assurance.
    - » The Compilation of Air Pollutant Emission Factors, AP-42 (www.epa.gov/ttn/chief/ap42/), contains information on over 200 stationary, including brief descriptions of processes used, potential sources of air emissions from the processes and in many cases common methods used to control these air emissions. Volume II contains information on emission factors from mobile sources.

16. Regulations on ambient air quality monitoring can be found in 40 CFR 51 Appendix P and 40 CFR 58 .

17. The following resources on air quality monitoring are presented in this chapter:
    - » Information on existing air quality monitoring stations is available through the Office

of Air Quality Planning and Standards at www.epa.gov/oar/oaqps/qa/ monprog.html.

- The Aerometric Information Retrieval System—Air Quality System (AIRS-AQS) is a database with information on the levels of the criteria pollutants in all areas of the country (www.epa.gov/airs/).
- 40 CFR Parts 50, 53, 58.
- The EPA's Ambient Monitoring Technology Information Center (www.epa.gov/ttn/amtic) provides technical information on monitoring programs and methods, along with monitoring guidance documents and articles.
- EPA's *Air Pollutant Monitoring* website provides general monitoring information and information on existing monitoring systems (www.epa.gov/oar/oaqps/montring.html).
- The *Tribal Air Monitoring Support Center* provides hands-on training and support services for tribal air professionals on the topic of air quality monitoring (www.cet.nau.edu/itep/TAMS/ TAMS_default.htm) or (702) 798-2559.

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