NATIONAL TRIBAL AIR ASSOCIATION

2016 Status of Tribal Air Report

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National Tribal Air Association

The National Tribal Air Association (NTAA) is a Tribal membership organization with over 100 member Tribes whose mission is to advance air quality management policies and programs consistent with the needs, interests, and unique legal status of federally recognized Tribes.

Additionally, the NTAA serves as a communication liaison and information conduit between Tribes, USEPA, and other federal agencies. The NTAA exists to assist Tribes in air quality policy work while respecting and supporting Tribal sovereignty and the Tribes' rights to a government-to-government relationship with the federal government.

All federally recognized Tribes are eligible to become member Tribes of the NTAA. Tools, such as the policy response kits, developed by the NTAA are available online for download and are readily accessible by members of the public.

NTAA Goals

- To advocate for and advance the development of Tribal air policy for the protection of environmental, cultural, and economic interests at all levels of government (Tribal, federal, state, local, and international);
- To promote the development, funding, and capacity building of Tribal air management programs;
- To promote and facilitate air quality policy and technical information that may include research, scientific and/or medical studies;
- To advance the recognition and acceptance of Tribal sovereign authority by conducting effective communication with and outreach to state, local, federal and international agencies, and to the general public; and
- To encourage and support appropriate consultation of state, local, federal and international agencies with all Tribal governments in accordance with Tribal structures and policies.

To learn more about the National Tribal Air Association, please visit: www.ntaatribalair.org and www.tribalairquality.org

Credits and Acknowledgments

The ***2016 Status of Tribal Air Report*** is the result of the dedicated work and contribution of many people, including tribal representatives, organizations, and USEPA personnel. We thank everyone that contributed a story, data, valuable time, effort and resources to making this project a success. We acknowledge and thank the NTAA Executive Committee Members and the NTAA Member Tribes.

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Welcome from NTAA Chairman

On behalf of the NTAA Executive Committee

Kwey-Ha! Nedabe (*Welcome to you, friend*)

On behalf of the National Tribal Air Association, thank you for taking the time to read this Status of Tribal Air Report (STAR). This is an amalgamation, a refined collection of data from across the nation that details the successes and challenges of protecting and improving air quality in Indian Country. NTAA does one thing, and we do it well: we exist as a conduit of information that flows both ways between Tribes and the federal government.

The effectiveness of the NTAA is in large part due to the relationship that has been fostered by the current Administrator of USEPA and the Acting Assistant Administrator of OAR. We look to continue this successful partnership with the incoming administration, for the sake of the air quality of all Tribes.

Within this document you will find numerical data provided by USEPA and the metadata of what it means to each Tribe that has shared. We have many allies in such a pursuit. These entities will be acknowledged, as they should be. Such work takes the participation of people who are dedicated to protecting and improving the status of the air shed of one of our country's most impacted populations.

You will find within this STAR a most basic principle – funding for Tribal Air Programs is well utilized. Many Tribal programs with several components are operated by a single individual, keeping pace with the air quality operations of states and cities, in all of the monitoring and policy work that such work entails. Much of the monitoring equipment is old and failing, but kept alive with parts from other machines.

It comes down to this… We have a personal investment.

This STAR is the current snapshot of Tribal Air Programs in a published document. Please read through and discover the successes and challenges of people who are engaged in protecting air quality, Tribal communities and public health within their lands and surrounding regions. They do good work, and it speaks highly of those who contribute to it, as well as of those who read about it.

In addition, we welcome you to visit our NTAA online STAR (www.tribalairquality.org), which is a living document. It is updated frequently. The work of the NTAA never rests.

Upchich G'nomial Nedabe (*Till next we speak with each other*).

Sincerely,

Bill Thompson, Chairman
National Tribal Air Association

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Executive Summary

The NTAA is pleased to present the 2016 Status of Tribal Air Report (STAR) to Tribal Nations, the U.S. Environmental Protection Agency (USEPA), and to other federal agencies and interested parties. The 2016 STAR outlines current conditions in Indian Country with respect to air quality management. This report is also intended to serve in part as a primer on Tribal Air Programs for the incoming USEPA administration. The 2016 STAR will provide an overview of Tribal Air Programs, their importance, highlight successes and challenges from Tribal Air Programs around the U.S, and outline recommendations for USEPA and other federal agencies to ensure continued success of these programs.

Monitoring and managing air quality is necessary to protect public health. Both ambient and indoor air pollution pose serious threats to human health and have been linked to an array of concerning health effects such as asthma, congestive heart failure, diabetes, and decreased cognitive function. Tribal communities are more vulnerable to air pollution impacts, and experience higher than average rates of diabetes, heart disease, and childhood asthma. In addition, Tribal communities are at higher risk of exposure to mercury and other air toxics due to traditional life ways, particularly subsistence practices.

Tribes are important co-regulators of air quality, and work alongside federal, state, and local agencies to assess, monitor, and manage regional air quality. Tribal Air Programs play an important role in guiding federal air quality policies, and participate in data-sharing programs that have led to a better understanding of regional air sheds. The NTAA supports Tribes in development of these programs, and facilitates their success through building capacity and partnerships.

As Tribal Air Programs have grown in number, annual federal funding has remained stagnant. As a result, more Tribes compete for less money, it's difficult for Tribes to obtain grant funding to establish new air programs, and existing programs are forced to make due with less. Given these circumstances, these programs operate with high levels of success. However, current funding levels cannot sustain – let alone grow – Tribal Air Programs in the long term.

The 2016 STAR describes various successful projects and pressing challenges expressed by Tribal air quality management professionals in Indian Country. The following recommendations are presented for consideration by USEPA and other federal and state agencies. In addition, the NTAA Air Quality Budget Analysis (Appendix A) provides specific funding recommendations.

2016 STAR Summary of Recommendations

1. **Restore funding to Tribal air programs:** Budget cuts have forced many Tribal Air Programs to reduce their operational capacity, while the demand and need for Tribal air management only increases. Specific funding recommendations can be found in **Appendix A: NTAA Air Quality Budget Analysis**.

   Tribes recognize that air quality funding is limited, however, additional funding for Tribal air quality programs must be made available to:

   - Restore funding to existing established Tribal Air Programs to at least highest historical funding levels;
   - Provide assistance to Tribes seeking to establish an air program of their own;
   - Create new funding streams targeted at addressing critical needs such as indoor air quality;
   - Provide new funding to Tribes to keep pace with the increased number of major source permitting to cover associated costs;
   - Replace and repair aging air monitoring equipment.

2. **Greater support for Alaska**: Provide greater support to Alaska Native Tribes and Villages, as they represent over 40% of federally recognized Tribes in the U.S. and due to their geographic location, bear significant burdens caused by air pollution and climate change. Alaskan Native Tribes and Villages require increased funding and assistance for air programs and climate change adaption planning. Specific recommendations can be found in **Appendix A: NTAA Air Quality Budget Analysis.**
3. **Conduct air quality needs assessment**: Tribes recognize the need for a comprehensive air quality needs assessment and invite the USEPA to partner with Tribes to conduct such an assessment in order to gain a better understanding of the complex and unique issues Tribes face today. These issues can be as varied as the Tribes themselves, thus it is imperative to have a complete understanding of the true status of Tribal air quality programs.
4. **Uphold Tribal sovereignty**: Federal agencies need to demonstrate their commitment to Tribal sovereignty through **(1)** appropriate allocation of funding for Tribal Air Programs, **(2)** engage proactively in government-to-government consultation with Tribal Nations, **(3)** uphold Trust responsibility by developing and implementing air programs that are responsive to the feedback provided by Tribes, and **(4)** respond to Tribal requests and recommendations in a timely manner.
5. **Facilitate partnerships**: Partnerships between Tribes and other established air quality entities should be encouraged and funded, especially in the areas of monitoring, analysis, co-regulation, and indoor air quality testing and remediation.

Acronyms

AAQ	Ambient Air Quality
AIEO	American Indian Environmental Office
AI/AN	American Indian/Alaska Native
ANTHC	Alaska Native Tribal Health Consortium
APA	Administrative Procedure Act
AQRV	Air Quality Related Value
AQS	Air Quality System
AWMA	Air & Waste Management Association
CAA	Clean Air Act
CAAAC	Clean Air Act Advisory Committee
CAFO	Concentrated Animal Feeding Operations
CFR	Code of Federal Regulations
CPP	Clean Power Plan
DITCA	Direct Implementation Tribal Cooperative Agreements
EI	Emissions Inventory
EO	Executive Order
EPM	Environmental Programs and Management Budget
FARR	Federal Air Rules for Reservations
FIP	Federal Implementation Plan
FR	Federal Register
HAP	Hazardous Air Pollutant
HUD	Housing and Urban Development
IAQ	Indoor Air Quality
IGAP	Indian General Assistance Program
IHS	Indian Health Service
ITCA	Inter Tribal Council of Arizona
ITEP	Institute for Tribal Environmental Professionals
MJO	Multi-jurisdictional Organizations
MNSR	Minor New Source Review
NAA	Non-attainment Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NPM	National Program Manager
NSR	New Source Review
NTAA	National Tribal Air Association
NTF	National Tribal Forum on Air Quality
NTOC	National Tribal Operations Committee
OAR	Office of Air and Radiation
ODEQ	Oklahoma Department of Environmental Quality
OECA	Office of Enforcement and Compliance Assurance
OITA	Office of International and Tribal Affairs

OTAQ	Office of Transportation and Air Quality
OTS	OAR Tribal System
PAC	Policy Advisory Committee
PCB	Polychlorinated biphenyls
PM	Particulate matter
PPA	Performance Partnership Agreement
PRK	Policy Response Kit
QAPP	Quality Assurance Project Plan
RFP	Request for Proposal
RPO	Regional Planning Organization
RTOC	Regional Tribal Operations Committee
SIP	State Implementation Plan
SOP	Standard Operating Procedure
SRMT	Saint Regis Mohawk Tribe
STAG	State and Tribal Assistance Grant
TAC	Tribal Air Coordinator
TAMS	Tribal Air Monitoring Support Center
TAR	Tribal Authority Rule
TAS	Treatment in the same Manner as a State
TEK	Traditional Ecological Knowledge
THHN	Tribal Healthy Homes Network
TIP	Tribal Implementation Plan
TSCA	Toxic Substances Control Act
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VOC	Volatile Organic Compounds

1 NTAA Briefing for the Current and Incoming Administration on Tribal Air Quality Programs

NTAA has prepared this 2016 STAR to brief both the existing and incoming federal administration on the status of Tribal Air Programs, and to help the incoming administration familiarize itself with the challenges and successes of Tribal Air Programs, which play an important role in protecting public health.

NTAA was founded in 2002 with a grant from the U.S. Environmental Protection Agency Office of Air and Radiation, and continues to work with Tribes, states, and federal agencies to facilitate Tribal Air Programs and protect air quality in Indian Country. Tribes are effective co-regulators of air quality and possess unique environmental knowledge that makes them important partners for agencies working to understand and address climate change.

To maintain the operational effectiveness of Tribal Air Programs, it is imperative that additional funding be allocated to these programs. Though Tribal Air Programs around the country continue to successfully meet objectives, doing so is becoming increasingly difficult as aging equipment begins to fail and an annually stagnant budget is stretched to fund an increasing number of programs.

1.1 Funding

A majority of Tribal Air Programs rely heavily on USEPA grant funding from Clean Air Act (CAA) and General Assistance Program (GAP) grants. Unfortunately, funding from these sources has decreased in recent years, at the same time as Tribal Air Programs have grown in number – creating a situation where more Tribes are competing for less funds. Table 1 (next page) and the NTAA Air Quality Budget Analysis (Appendix A) both illustrate recent annual declines of State and Tribal Assistance Grant (STAG) allocations, which are funded under the CAA. Some Tribes are able to augment their air programs by diverting resources from their governments' operating budgets, but most Tribes do not have available funds to do so. This is a serious problem for many Tribes that rely heavily on federal funding and are being forced to cut air program staff and hours, and in some cases postpone necessary equipment or software purchases, and/or maintenance.

Due to limited resources and federal funding, Tribal Air Programs are often small and understaffed. And while these programs may be underfunded, they continue to successfully operate as valuable co-regulators with state and federal agencies and are relied on by Tribal and non-Tribal communities alike to safeguard public health.

Table 1 State and Tribal Assistance Grant (STAG) Allocations for Fiscal Years 2012-2016

Annual State and Tribal Assistance Grant (STAG) Allocations					
Region	**2012**	**2013**	**2014**	**2015**	**2016**
1	$657,063	$613,577	$622,967	$621,504	$594,273
2	$440,175	$424,265	$424,983	$417,874	$403,087
4	$330,964	$312,481	$316,989	$313,173	$315,674
5	$1,263,752	$1,145,597	$1,179,144	$1,226,435	$1,228,784
6	$1,305,009	$1,174,439	$1,176,253	$1,181,133	$1,141,449
7	$465,216	$434,188	$499,756	$524,625	$534,917
8	$2,109,888	$2,002,337	$2,096,474	$2,070,039	$2,001,325
9	$3,259,737	$2,933,750	$2,974,502	$2,885,487	$2,967,439
10*	$2,657,197	$2,421,367	$2,466,932	$2,443,631	$2,464,053
Total	**$12,489,000**	**$11,462,001**	**$11,758,000**	**$11,683,901**	**$11,651,001**

***** Includes Alaska

1.2 Emissions Inventories (EI)

After receiving federal funding, Tribal emissions inventories and baseline air quality assessments are initial steps in establishing a Tribal Air Program. Establishing these baseline inventories helps Tribes to track changes in emissions and air quality over time. Further, the USEPA uses these along with data from state and local agencies to prepare the National Emissions Inventory (NEI), which improves overall understanding of regional and national air quality.

1.3 Monitoring and Data Sharing

Tribal Air Programs are not uniform throughout Indian Country. Some Tribes utilize advanced equipment and participate in broad air monitoring and data sharing programs with the USEPA and/or regional agencies, while others monitor just a number of concerning air pollutants and collect data for internal use, using old or outdated equipment. Some Tribes are unable to monitor air quality due to lack of funds from U.S. government agencies. Tribes significantly contribute to air quality protection as a means of exercising Tribal sovereignty through air quality program activities.

The appendices at the end of this document provide an in-depth look at Tribal Air Program activities around the nation. The NTAA Air Quality Budget Analysis can be found in Appendix A. Appendices D, E, and F include data summaries provided by the USEPA's Office of Air and Radiation at the request of the NTAA.

1.4 Partners in Regulation

Tribes are important partners in monitoring, regulating, and co-regulating air quality, and are involved in formal partnerships with federal, state, and local air management entities. Tribal Air Programs play an important role in understanding local, regional, and national air quality profiles; without these partnerships, there would be significant data gaps. Tribes are uniquely qualified to study and manage air quality due to their traditional knowledge of their local and regional environments. A growing number of Tribes are exercising their sovereignty by implementing air quality management and regulatory programs of their own, and by working with neighboring agencies to maintain the quality of regional air sheds.

2 Why Tribal Air Programs Matter to Public Health

Monitoring air quality is a critical component of protecting the public health and cultural resources on Tribal lands. American Indian and Alaska Native (AI/AN) communities are unfairly and disproportionately impacted by air quality issues. According to the U.S. Department of Health and Human Services' Office of Minority Health and the CDC's 2013 National Health Interview Survey, AI/AN children are 80% more likely to suffer from asthma than non-Hispanic White children, while AI/AN adults are 60% more likely to be obese, 2.7 times as likely to suffer from diabetes, and 30% more likely to be diagnosed with coronary heart disease than non-Hispanic White counterparts.[1,2]

Air pollutants are not bound by borders and many Tribes are forced to live with air pollutants that they played no role in creating. Further, many Tribes are unfairly burdened with pollution resulting from dirty mining or power generation projects within or near their borders. Economic development is certainly important for the livelihood of Tribes; however, it is important that development does not threaten the health of nearby communities.

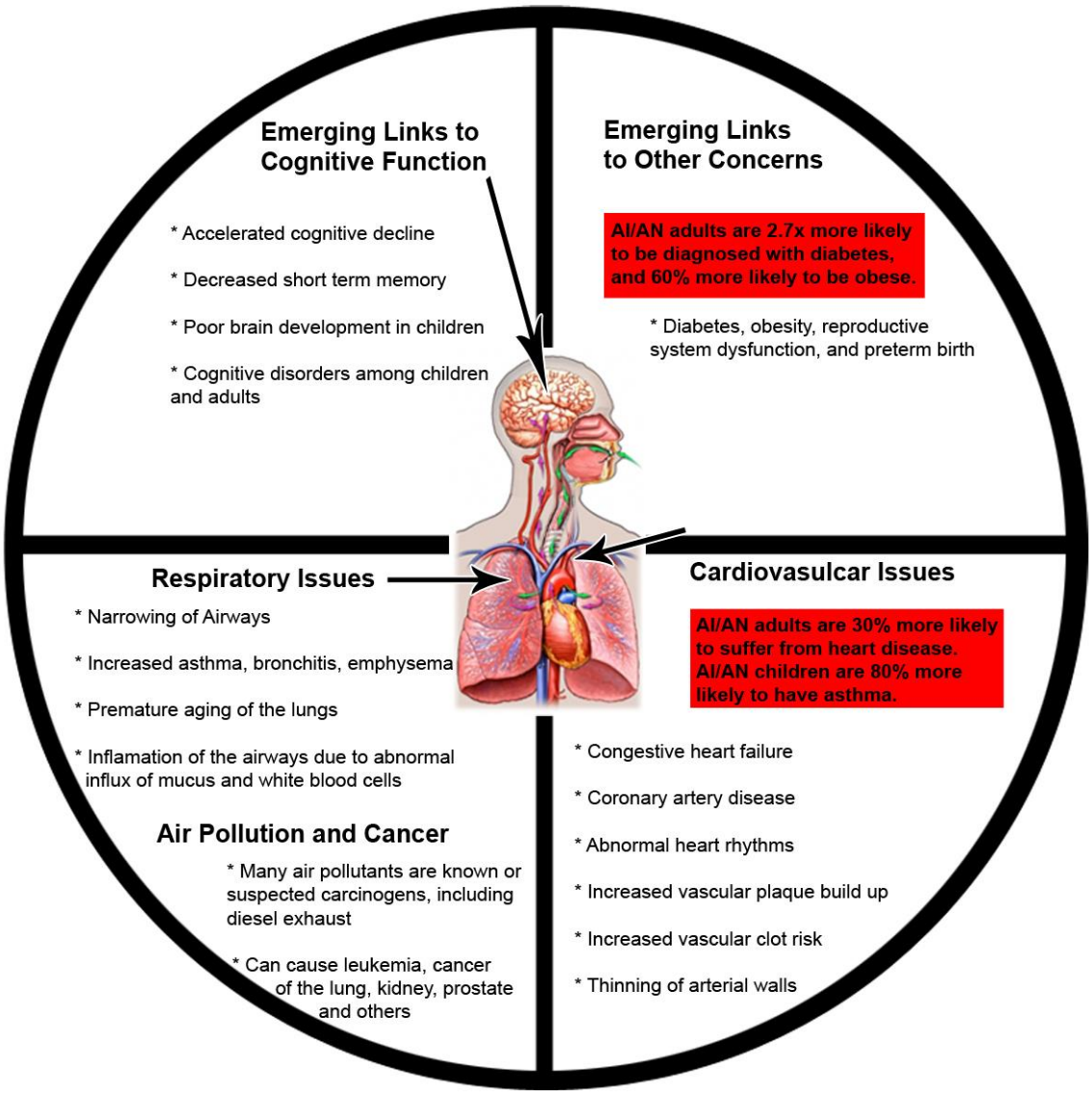
Tribal Air Programs play an integral role in monitoring air quality in Indian country. In partnership with the USEPA, Tribal Air Programs can identify and monitor air pollution problems and effectively focus site-specific mitigation efforts to reduce pollution and improve health.

Findings from the USEPA, the Centers for Disease Control and Prevention (CDC), and World Health Organization (WHO), and a multitude of independent studies, show that both long and short-term exposure to poor air quality, including ambient and indoor air pollution, hazardous air pollutants, and mobile source pollutants, is linked to a wide variety of health concerns, such as those described in the diagram on the next page.

1 U.S. Department of Health and Human Services/Office of Minority Health. (2016). Profile: American Indian/Alaska Native. Retrieved from http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=62

2 Tables A-1—A-20: Blackwell DL, Villarroel MA, Clarke TC. Tables of Summary Health Statistics for U.S. Adults: 2013 National Health Interview Survey. 2015. Available from: http://www.cdc.gov/nchs/nhis/shs/tables.htm

Health Effects of Common Air Pollutants



2.1 Ambient Air

Ambient air is comprised of nitrogen, oxygen, and argon gases as well as a whole host of criteria and hazardous air pollutants that vary in concentration as a function of proximity to air pollution sources, geographic location, and weather patterns. Tribal concerns regarding specific ambient air pollutants are as varied as the composition of the air itself and in many instances, dictated by the major sources of pollution that are proximal to tribal lands. These pollutants are produced by many sources, including industry, forest fires, agriculture, and transportation.

Ambient air pollution is known by the USEPA, CDC, California Air Resources Board (ARB), and WHO, to cause a variety of health impacts and lead to missed school or work days, increased emergency room visits, hospitalizations, and premature deaths. Many studies have linked air pollutants to heart and lung disease. Further, recent studies have linked air pollutants to alarming health outcomes including obesity, diabetes, poor neurological development in children, and decreased cognitive function in adults.

2.2 Indoor Air

Much like ambient air quality, monitoring and maintaining indoor air quality (IAQ) plays a very important role in maintaining health within Tribal communities. Common indoor pollutants include mold, allergens, radon, particulate matter, and second-hand smoke. These are linked to a wide variety of health impacts that may cause symptoms immediately or years later. IAQ issues can vary widely depending on the season and region, meaning Tribes across North America face different challenges when mitigating the impacts from indoor air pollution at any given time.

While the pollutants and health impacts associated with IAQ are very similar to those of ambient air quality, the challenges to monitoring and maintaining IAQ are much different. Due to the large number of indoor environments that must be assessed, monitoring IAQ can be much more time and resource intensive than ambient air quality. Additionally, many Tribal communities have poor housing conditions that amplify indoor air quality problems.

Monitoring indoor air quality and maintaining healthy indoor environments is critically important. The USEPA has found that Americans spend as much as 90% of their time indoors, where levels of air pollutants are often 2, 5, or even 100 times higher than levels outside.[3] A recent study led by researchers at Harvard University compared the cognition of workers in conventional office buildings to their counterparts in well-ventilated buildings, and highlights the value of healthy indoor air quality. The researchers found that people working in conditions with better-than-average air quality showed "significantly higher cognitive

3 Environmental Protection Agency. (2016). Air and Radiation: Basic Information. Retrieved from https://www3.epa.gov/air/basic.html

function" and scored nearly 300% higher when tested for cognitive strategy and information usage.[4]

2.3 Hazardous Air Pollutants (HAPs) and Mobile Sources

Hazardous air pollutants (HAPs) are known or suspected to cause serious health effects such as cancer, neurological problems, and birth defects. The USEPA lists 187 known toxic air pollutants including benzene, asbestos, mercury, and lead compounds. Humans can be exposed to hazardous air pollutants by breathing contaminated air, eating contaminated food (e.g., fish, meat, eggs, vegetables, etc.), drinking contaminated water, or simply coming into contact with contaminated soil, dust, or water. Due to bioaccumulation, a process in which these toxins accumulate in body tissues, humans face long term impacts by ingesting even small amounts of toxins over long periods of time. This can be of particular concern for Tribes who may be more exposed due to subsistence and traditional life ways.

Mobile source emissions are released by highway vehicles and non-road equipment and are known or suspected by the USEPA to cause cancer or other serious health outcomes. While mobile source emissions of air toxics have been reduced by about 50% since 1990, these emissions continue to pose hazards to human health. Diesel exhaust is of particular concern, classified by the USEPA as likely carcinogenic to humans, and was classified as a known human carcinogen by the WHO in 2012. This is of significant concern to tribal communities that often rely on old or "legacy" fleets of diesel vehicles and equipment that produce high levels of air pollutants.

2.4 Climate Change

NTAA has a history of working on climate change issues and communicating the concerns of Tribes to the USEPA. In 2009, NTAA developed a report on the impacts of climate change in Indian Country after a request by then-Office of Air and Radiation Assistant Administrator, Gina McCarthy. As a result of work such as this, the USEPA released the Clean Power Plan Final Rule with the goal of reducing greenhouse gas emissions. This rule states: "Tribal communities whose health, economic well-being, and cultural traditions that depend upon the natural environment will likely be affected by the degradation of ecosystem goods and services associated with climate change[5]."

The consequences of climate change will endanger public health, both directly and indirectly. The USEPA's Endangerment Finding cites numerous health concerns associated with increased levels of atmospheric greenhouse gasses. The USEPA predicts that the negative

4 Harvard T.H. Chan School of Public Health. (October, 2015). Green office environments linked with higher cognitive function scores. Retrieved from http://www.hsph.harvard.edu/news/press-releases/green-office-environments-linked-with-higher-cognitive-function-scores/

5 Environmental Protection Agency. (2009) EPA's Endangerment Finding. Retrieved from http://www3.epa.gov/climatechange/Downloads/endangerment/EndangermentFinding_Health.pdf

effects of extreme hot days will outweigh the positive effects of less exposure to extreme cold, a scenario that will disproportionately impact poor communities that cannot afford or do not have access to air conditioning. Climate change will likely exacerbate ground-level ozone pollution as well as the many associated health impacts. Changes in temperature and precipitation patterns will increase risks associated with aeroallergens (i.e. pollen and mold) and vector-borne diseases. Finally, climate change is leading to more frequent extreme weather events, which have the potential to severely impact Tribes, depending on preparedness and geographic location.[6]

Climate change threatens Tribal lifestyles by decreasing food security, endangering culturally significant flora and fauna and forcing them towards extinction, increasing the risk of extreme weather events, and endangering public health in general. Long-term climate change and near-term weather variation are both leading to changes in biodiversity, abundance of important flora and fauna species, and seasonal changes that are impacting traditional hunting, foraging, and farming. Longer summers and warmer winters in Alaska are causing sea-ice to melt early and reducing Alaska Natives' ability to move around their region to hunt or gather. In the upper-Midwest, moose and wild rice habitats are shifting with the changing climate, restricting their availability as a resource. Changing temperature and precipitation patterns are permanently altering biomes across the southwest, changing where many culturally significant plants can grow and even leading towards their extinction. Further, climate change is threatening food security based on subsistence agriculture, particularly in the west where a lack of rainfall has created long-term drought conditions.

2.5 Funding Issues

The vast majority of Tribes are small, isolated, and have limited budgets. As such, federal assistance for Tribal Air Programs is critical to their operation. As shown in the NTAA budget analysis (see Appendix A), funding levels have decreased in recent years, causing stagnation of Tribal Air Program growth. These programs have continued to achieve more with less, however, this is not sustainable. As monitoring equipment ages and breaks down, Tribal Air Programs are unable to continue operations with the same levels of success and data QAQC. Additional funding is necessary to maintain current Tribal Air Programs, to build capacity, and grow these programs in the future.

[6] Environmental Protection Agency. (2009) EPA's Endangerment Finding. Retrieved from http://www3.epa.gov/climatechange/Downloads/endangerment/EndangermentFinding_Health.pdf

3 Regional Successes and Challenges in Effectively Managing Air Quality and Climate Change Effects

NTAA received stories from around Indian Country describing the successes and challenges they've had with managing air quality and the effects they are experiencing from climate change impacts to their communities and way of life. Several of those received are profiled below to help illustrate the status of Tribal Air Quality Programs around Indian Country. These stories are organized by USEPA Regions.

3.1 Region 10 – 229 *Tribes, Alaska*

There are 229 federally recognized Tribes in USEPA Region 10-Alaska. The following list highlights some of the many recent successes of Tribal Air Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Successes

- The Alaska Native Tribal Health Consortium (ANTHC) Tribal Air Quality Program developed an assessment tool to help Tribes prioritize their air quality concerns. The Tribal Air Quality Phase 1 Assessment has been successfully completed by 97 communities statewide. Current data indicates that Road Dust, Indoor Air Quality, and Solid Waste Burning are the top three (3) tribally-identified air quality concerns in Alaska;
- The Native Village of Ruby is conducting a pilot dust mitigation project funded by the US Department of Transportation Federal Highways Program that involves applying two palliative products (dust suppressants), using lightweight equipment that can be flown in on small aircraft, and pre and post air quality monitoring. Partners on the project also include USEPA Region 10, the Alaska University Transportation Program, and the Alaska Department of Environmental Conservation;
- Alaska Native Tribal Health Consortium (ANTHC) continues to work with Tribes to identify communities with high rates of respiratory illness among children, and work with Tribes to improve housing units with high potential for poor indoor air quality;
- Aleknagik Traditional Council conducts indoor air quality monitoring and produces videos to educate residents about Indoor Air Quality;
- Since 2012, Bristol Bay Native Association has surveyed IAQ of 405 homes to assess the feasibility of wood heating system exchange programs and identify appropriate wood smoke reduction measures;
- Seldovia Village Tribe continues to monitor PM10 at three sites using DustTrak aerosol monitors on loan from the Alaska Native Tribal Health Consortium, and has submitted air data to USEPA through the Air Quality System (AQS).

Challenges and Priorities

- Funding presents the major challenge to Alaska Native Villages that are not eligible to receive federal monies designated for Tribes with Reservation lands. USEPA is not able to add new programs or provide special project funding because Tribal air grant funds have not increased since 2012;
- Road dust is a major issue, especially in remote areas;
- Landfill burning;
- Indoor air quality and weatherization;
- Wildfires;
- Wood smoke;
- Climate change adaption;
- Fugitive dust from mining operations;
- Cruise ship emissions.

Alaska Native Tribal Health Consortium – Healthy Homes

In 2008, Alaska Native Tribal Health Consortium (ANTHC) Environmental Health Services Department received a request from a pediatric pulmonologist at the Alaska Native Medical Center to investigate the home environments of children experiencing chronic respiratory illness. ANTHC developed a project with the primary aim to determine if home modification activities reduce the need for respiratory medical care among a high risk group of Alaska Native children. A secondary aim is to develop a model for addressing respiratory disease through home modification that can be replicated in other regions of Alaska, as well as on Tribal lands throughout the United States.

Each year, ANTHC has worked with regional/local tribal housing authorities, regional tribal health organizations, and local Tribes to determine which communities have a combination of children with frequent and/or severe respiratory illness and housing with potential for poor indoor air quality. For the purpose of this project, frequent and/or severe respiratory illness is defined as a child that has been hospitalized at least once during the past 12 months or has visited the clinic at least four times in the previous 12 months for respiratory conditions. ANTHC has partnered with Tribal housing authorities to make low-cost improvements to those homes with the goal of improving the indoor air quality. The project has been funded by the Commission for Environmental Cooperation (CEC) and Housing and Urban Development (HUD).

The selected homes were monitored and assessed for air quality baselines and then modifications were made. Homes with leaky wood stoves received new replacement USEPA certified wood stoves, as well as, education on how to properly use them. A combination of mechanical and/or passive vents were also installed in homes, and homeowners were provided with education about how and when to uses these vents. Residents also received education about removing chemicals and cigarette smoke from indoors and proper wood

burning practices. Over the course of the project, the residents received check-up phone calls, reminder post-cards, and educational visits from ANTHC staff members, which all served as tools to maintain and track progress. Along with education about impactful lifestyle changes and how best to utilize the modifications, residents were also provided with report cards with the results of the indoor air monitoring, CO_2 monitors to self-check the adequacy of their ventilation, and mold and moisture booklets. Air quality in the homes was regularly monitored throughout the program to provide a record of progress.

Initial results show an improvement in air quality in regards to volatile organic compounds, particulate matter, and carbon dioxide. Lung health questionnaires completed with the families, to be verified by medical chart reviews, suggest fewer missed days of school, fewer hospitalizations, and fewer clinic visits for respiratory illness. ANTHC staff members will incorporate the principles and methods from this program's work into a permanent program to use home modifications and education to improve the respiratory health of children in Alaska and throughout the United States.

Aleknagik Traditional Council

Figure 1 Image from an Aleknagik Traditional Council instructional video, "How to Maintain Your HRV (Heating, Recovery, and Ventilation).

Aleknagik Traditional Council has been producing videos to educate residents on Indoor Air Quality and as an educational tool for other villages. Through a grant from Alaska Native Tribal Health Consortium's Mini Air Grant Program, our initial project included collecting air samples from 24 homes. Most homes had high Particulate Matter$_{2.5}$ ($PM_{2.5}$) and high levels of Carbon Dioxide, which were attributed to poor ventilation. With the next grant project, a video on ***Simple Steps for a Healthier Home*** was produced-to show how a resident could improve air quality in their home with little or no money. The next project grant included a video on ***How to Maintain Your HRV (Heating, Recovery, and Ventilation)*** in Yupik, which was highlighted at the Alaska Tribal Conference on Environmental Management (ATCEM) and everyone said it was great. We are now producing another video on ***Protecting Yourself Against Wildfire Smoke***.

Bristol Bay Native Association

Bristol Bay Native Association received CAA 103 Special Project funding in FY2012 to collect baseline information on residential heating systems, steam baths, smoke houses and wood harvest practices in Dillingham and Aleknagik, and also conduct educational outreach to participating households. A total of 405 homes were surveyed, representing about 46 percent of owner-occupied housing units for both communities. Study findings are being used to assess the feasibility of wood heating system exchange programs, assist with research need to determine sustainable biomass harvest levels for both communities, and to identify appropriate wood smoke reduction measures.

Figure 2 Smokehouse air quality is just one of the local AQ issues Bristol Bay Native Association is studying.

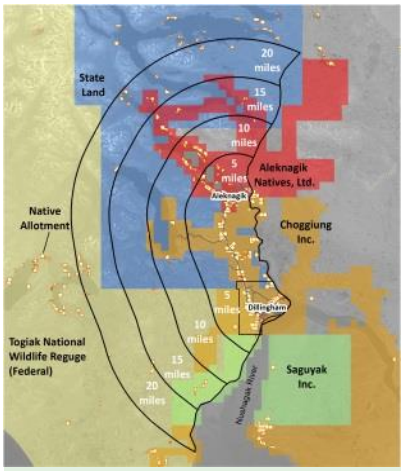


Figure 3 Map showing the Bristol Bay Native Association's study area.

Bristol Bay Native Association is also collaborating with partners on a pilot project to develop a cost-effective methodology for quantitative and process linked observations of erosion occurring on coastal, river and lake communities. We are also working with Tribes in our region to prepare Multi-Hazard Mitigation Plans that will include discussion of climate change as part of the risk assessment and identification of mitigation strategies.

Seldovia Village Tribe

Figure 4 Co-located DustTrak aerosol monitor and High Volume Air Sampler at one of SVT's PM-10 monitoring sites.

Road dust is a big issue for Seldovia as we have a large proportion of elders in our community and the main road into and out of town (Jakolof Bay Road) is not paved and many people live, bicycle, drive, and walk along this road. Up until 2012, palliative was not regularly applied. During the summer months (when it is dry), vehicles and ATVs can stir up large dust plumes, despite staying within the speed limits posted. Out of concern of the health risks posed by the road dust, we have been collecting PM 10 data through DustTrak aerosol monitors (loaned to us through the Alaska Native Tribal Health Consortium) since 2012 at two sites along Jakolof Bay Road and recently added a third site in 2015 along a connecting road. Additionally, in 2013 and 2014, we co-located equipment with high volume air samplers loaned to us through the Alaska Department of Environmental Conservation (ADEC).

We are currently acting in a consulting capacity, through a Cooperative Agreement with ANTHC, to the Native Village of Nunam Iqua as they develop methods and a Quality Assurance Project Plan for measuring the effectiveness of palliatives on mitigating their road dust using an experimental design first established in Colorado, which is a mobile dust collector, essentially a filter box connected to a generator and a suction pump which attaches to the back of a vehicle.

Seldovia is the only Tribe in Alaska that has submitted air data to USEPA through the Air Quality System (AQS) which is part of the Exchange Network. We are presently working on making all our air data publicly available through our spatial viewer and hope to continue doing road dust monitoring. The challenges with submitting our data into AQS have been with the high volume air sampling data that the form we received the data in did not match the final version of the form the data needed to be in to be approved by ADEC for submission into AQS as we were under their QAPP when we utilized their equipment. We did not know this until we had already configured our Node to accept and flow the data in a particular way. Also, regarding our DustTrak data, there were great delays and mixed messages received on whether we could submit that data to USEPA.

3.2 Region 10 – *42 Tribes, Idaho, Oregon, Washington*

The Concern

The Tribes realize USEPA has experienced reduced overall funding for several years. However, we feel that Tribal Air Programs represent a better fiscal to health improvement investment than many other programs.

The Challenge

The stagnation and cuts in Tribal funding in the last 10 years means there have been reductions in ongoing programs and no funding for new Tribal AQ programs.

Tribes are supplementing environmental staff with tribal money needed for health and youth programs. Small Tribal programs, which have been allowed only a partial FTE through USEPA funding, have now seen money reduced to unsustainable levels to the point where Tribes are eliminating environmental programs. Larger Tribes are losing experienced staff because of the need to reduce wage rates. Monitors funded in the early days of the programs (i.e., 2000-2010) are not being funded enough to replace equipment. Education and Outreach to Tribal members is one of the first to suffer cutbacks and choices have to be made between IAQ concerns and ambient air quality programs.

The Need

- Funding
    - Restoration to the highest pre-reduction levels for current programs (Funding which USEPA used to get and allocate to the Tribes to establish AQ programs)
    - Tribal Monitoring program, Credentialed Inspector Program, Regional Partnership Organization (e.g., WRAP), Federal Air Rules for Reservations (FARR) Revision, Diesel Emissions Reductions Act (DERA), Toxics monitoring
- IAQ
    - Increased funding stream, separate from the current grant program
    - Allowed in all regional STAG Tribal applications
    - Federal entities need to work out means for Tribes to obtain funding through USEPA to use HUD/HHS funding for IAQ tasks without having to apply for separate grants
- Climate Change
    - Separate funding stream from current grant program
    - Federal entities need to work out means for Tribes to obtain funding through USEPA to use BIA funding for climate change tasks without having to apply for separate grants
- USEPA Staffing
    - Restore positions
    - Cutbacks have nearly eliminated experienced staff to help Tribes with specific problems; superfund sites, toxic source impacts, etc.
    - Current USEPA staff turnover/position elimination has left remaining USEPA staff struggling to help Tribes

Region 10 (42 Tribes, Idaho, Washington and Oregon)

- 42 Federally recognized Tribes in the region
- 16 Tribes have Air Quality Programs
- 14 Tribes have air monitoring programs

Confederated Tribes of the Colville Reservation – Indoor Air Quality and Wildfire Smoke

Figure 5 Taking precaution to avoid inhalation of wildfire smoke.

A quarter million acres of the Colville Reservation burned during the devastating 2015 fire season. Ambient $PM_{2.5}$ concentrations exceeded the three permanent monitor's capacity to measure at over 1000 micrograms per cubic meter (µg/m3) for extended periods of time. A haze in facilities such as daycare, head start, health clinics and government buildings was visible. The Air Quality Program (AQP) conducted indoor air surveys using a Met One Aerocet 831 mass profiler to estimate $PM_{2.5}$ concentrations indoors. The results lead to developing strategies to cope with unhealthy indoor air. Strategies included air conditioner operations, door use, varying workday schedules, N-95 mask use, educational opportunities and mitigating health impacts. Catastrophic fires will continue to occur making the need for developing preplanned actions and strategies essential.

Figure 6 A great reminder to prevent wildfires.

On August 25, 2015, sampling air in the air quality office detected a concentration of 405 µg/m3, falling into the hazardous category on the Air Quality Index (AQI). Other buildings proved to be worse with concentrations up to 800 µg/m3 in the administration building where the Emergency Service Center is located. Other facilities with at risk populations such as head start, day care and the clinic had concentrations in the hazardous AQI category. The next day conditions degraded substantially with indoor readings above 1400 µg/m3. The Colville Business Council and the Executive Director granted administrative leave for the next two days (Thursday and Friday) and a late start the following Monday.

The AQP produced two documents to help people cope with the indoor smoke. The first, ***Masks for Smoky Conditions***, provided simple instructions on how to wear a N95 filter mask and the various types available. A week or so into the fire, a large number of masks were donated by various entities and AQP helped distribute these where needed. The second, a guide for ***Managing Buildings for Clean Air*** was produced in order to help facilities to manage their indoor air. People were using multiple doors, using air conditioners that did not recirculate indoor air, running air filters with the ionization setting on and not wearing masks inside.

Additionally, the AQP developed Standard Operating Procedures (SOP) to sample and report findings in a consistent manner. The SOP identifies procedures to sample $PM_{2.5}$, carbon monoxide, and carbon dioxide. The health hazards are similar for all three at high

concentrations — headaches, shortness of breath, dry throat and nasal passages. The symptoms can be mitigated by leaving the area to get cleaner air, staying in a building with adequate air conditioning or finding a clean air refuge. Unfortunately, the concentration of smoke throughout the Reservation was high so people traveled over three (3) hours to get cleaner air. Most people do not have home air conditioning that recirculates the air or could handle a HEPA filter and no clean air refuges exist.

Many people did end up in the hospital due to extreme smoke conditions, however, the efforts of a large number of individuals kept many more from needing to go to the hospital. The AQP played a small role in the effort and combined with others kept people healthier. In anticipation of future smoke events, the AQP will develop ***Smoke Ready Communities***, a comprehensive approach to mitigating the effects of wildfire smoke.

In addition, The Air Quality Program established three permanent, continuous $PM_{2.5}$ monitoring sites; compiled eight (8) years of emissions inventory data; gained USEPA point source inspector credentials; established a vigorous education and outreach program.

USEPA delegated three portions of the Federal Air Rules for Reservations (Region 10 FIP) to the Tribes.

The greatest success is keeping people healthy by helping them understand air quality and the greatest challenge is providing these services with dwindling funds. The program has built up capability to accomplish tasks at a high level but the capacity to accomplish these is capped by funding limitations.

3.3 Region 9 – *148 Tribes, Arizona, California, Hawaii, Nevada*

There are 148 federally recognized Tribes in Region 9, 27 of which operate 40 Tribal air monitoring sites. The following list highlights recent successes of Tribal Air Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Successes

- After 10 years of work, the Gila River Indian Community's Air Quality Management Plan was approved by the USEPA, allowing the Community to exercise its sovereignty and regulate sources of air pollution within the Community;
- The Gila River Indian Community was awarded nearly $400,000 in Diesel Emission Reduction Act funding to replace construction vehicles in the Community.

Challenges and Priorities

- Adequately fund and support existing established air programs, and support Tribes that want to create air programs;
- Targeted funding and support for Tribes affected by new ozone standards;

- Targeted funding and support for Tribal indoor air programs;
- Retaining knowledgeable staff;
- The majority of air pollution sources are off Tribal lands.

Gila River Indian Community

The greatest success story in the last five (5) years for the Gila River Indian Community's (GRIC or Community) Air Quality Program (AQP) was USEPA's approval of the Air Quality Management Plan (AQMP) – a process that was over 10 years in the making. The purpose of the AQMP is for the protection of outdoor air within the boundaries of the Community. The AQMP allows GRIC to exercise its sovereignty over air quality within the Community. The AQMP also allows the GRIC Department of Environmental Quality (DEQ) to meet the requirements of the Federal Clean Air Act to protect and preserve air quality within the Community through the regulation of sources of air pollution (primarily industrial) within the Community and continually monitoring the quality of the outdoor air for key pollutants.

In 2002, the GRIC DEQ began drafting Phase I of a Tribal Implementation Plan (TIP), which included ordinances containing definitions, general authorities, procedures for preparation, adoption and submittal of the TIP, and adoption of the National Ambient Air Quality Standards (NAAQS) as GRIC standards. Phase II of the TIP was completed in December 2004, and included ordinances containing permit requirements and fees, civil and criminal enforcement, administrative appeals, area source emission limits, generally applicable source requirements, source category specific emission limits and federal emission limits incorporated by reference. After conducting public hearings and addressing comments, the GRIC DEQ originally planned to submit Phase I and II of the TIP to USEPA for approval, but USEPA and GRIC DEQ discovered that some of the elements proposed in the TIP (e.g., Title V permitting program, NESHAPs, NSPS, etc.) are not approvable under a TIP and could cause an approvability problem. As a result, Phase I and II of the TIP were combined into a single document known as the Air Quality Management Plan (AQMP), which included all the elements originally contained in the TIP as well as the non-TIP elements. The AQMP was approved by the Tribal Council on December 6, 2006. After making a few technical changes to the document at the request of USEPA, the revised AQMP was approved by Tribal Council on August 20, 2008. The AQMP was approved by the USEPA Region 9 Administrator on January 19, 2011, making the AQMP a federally enforceable regulation.

A more recent success story for the AQP is the rollout of USEPA's Air Quality Flag Program (AQFP) within the Community and associated publishing of the Community's ambient air monitoring data on AirNow and the GRIC DEQ website for availability to the Community members. The goal of both of these programs is to raise awareness of local air quality conditions and allow for Community Members and visitors to take action to protect their health, especially those with asthma. Implementation of the USEPA's AQFP began as a project for the ITEP Summer Intern who assisted the AQP in the summer of 2014. The first location to implement the AQFP on the Community was the Ira H. Hayes Memorial Library in Sacaton in the summer of 2015, which was followed shortly thereafter by the GRIC Governance Center and three of the Community schools. In support of the AQFP, the AQP configured the ambient air monitoring data management software (AirVision) to report the Community's current air quality data to the AirNow website. Once in the AirNow database, the Community's air quality data can be viewed in near real-time on GRIC DEQ's webpage and via the AirNow app on any mobile device. Both the AQFP and near real-time monitoring data can be used to help plan outdoor activities for the day.

Figure 8 A green AQFP flag seen flying below the GRIC flag at the community's Governance Center.

Figure 7 GRIC children holding up one of the community's Air Quality Flag Program flags. Green flags represent good air quality conditions.

However, all of the successes in the AQP are not without challenges. The greatest challenges in moving the AQP forward are probably common among other Tribes and include internal processing of vacant positions for advertisement and hiring, retaining knowledgeable staff, and the general lack of resources (usually financial) to complete all program objectives. Air quality regulations at the Federal, state, and local levels are constantly changing due to advances in atmospheric science, environmental and biological effects of air pollution, air pollution control technologies, and sampling methods. Court cases and feedback from stakeholders (e.g., the regulated entities, Community members, complainants) also cause changes in air quality regulations. Maintaining a relevant regulatory air quality program requires keeping up with these frequent changes to air quality regulations, including determining what regulatory changes are applicable to the Community and where the AQP needs to devote resources for requirements such as providing comments on proposed Federal, state, and local rules. Keeping up with the constant flux of air quality regulations in addition to the regular duties of the AQP (e.g., monitoring, permitting, compliance and enforcement) requires a consistent number of personnel.

Santa Ynez Band of Chumash Indians – Community Energy Efficiency, Conservation, and Renewable Energy

As a project featured by the USEPA's Climate Showcase Communities Program, the Santa Ynez Band of Chumash Indians launched the Chumash Community Energy Program (CCEP) in order to create jobs while reducing greenhouse gas (GHG) emissions, energy consumption, and associated costs throughout the Tribal community and beyond. To achieve these benefits, the Tribe developed a job training program and subsidized building performance assessments, energy efficiency retrofits, and solar installations on residential, commercial, and government buildings. Over the course of the grant, 50 community members received training and completed 62 building assessments, 55 efficiency upgrades, and 58 solar projects. Five Tribal members were hired for full time jobs by partner contractors. In addition, this project involved extensive outreach to educate community members about energy efficiency, conservation, and renewable energy opportunities and inform non-community members about the CCEP and its benefits. For more information on the Santa Ynez project, you can visit: https://www3.epa.gov/statelocalclimate/local/showcase/santaynez.html

3.4 Region 8 – 27 *Tribes, Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming*

There are 27 federally recognized Tribes in USEPA Region 8. The following list highlights recent successes of Tribal Air Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Successes

- Southern Ute Indian Tribe's successful wood stove exchange program;
- The Southern Ute Tribe has been doing a great job leading the way on administering the Tribe's USEPA approved Title V Operating Permit program (i.e., permitting, compliance and enforcement).

Challenges and Priorities

- Limited funding is the most significant challenge to Tribal Air Programs in Region 8;
- Rebuilding relationships with the USEPA that have deteriorated in the wake of employee retirements and travel budget cuts;
- Oil and gas development.

Southern Ute Indian Tribe

The Southern Ute Indian Reservation (Reservation) was established as a joint air quality control region in 1999 through an intergovernmental agreement (IGA) entered between the Southern Ute Indian Tribe (Tribe) and the State of Colorado. An Environmental Commission

was created, consisting of six appointed Commissioners with equal representation from the Tribe and the State of Colorado, with the purpose of maintaining and improving air quality by prescribing air quality programs for the Reservation through the Reservation Air Code (RAC).

Subsequently, the Tribe was fully delegated a Clean Air Act (CAA) Title V Operating Permit Program (Title V Program) by the USEPA on March 2, 2012. All major sources (air emission sources having the potential to emit greater than either 100 tons per year (tpy) of any criteria air pollutant, 10 tpy of any single hazardous air pollutant (HAP), or 25 tpy of any combination of hazardous air pollutants), located within the exterior boundaries of the Reservation are subject to the Tribe's Title V Program, regardless of land ownership status.

The Tribe's Air Quality Program (AQP) has been assigned the duties of administering the permitting, compliance, and civil enforcement of the Title V Program and delegated New Source Performance Standards (NSPS) and National Emission Standard for Hazardous Air Pollutants (NESHAP) subparts. The AQP successfully completed a three-year Transition Plan in March 2015, effectively transferring all USEPA issued Part 71 Title V operating permits over to Tribally issued Part 70 Title V permits. AQP issued Title V permits to thirty-one (31) former USEPA permitted sources and five (5) permits to new sources, totaling thirty-six (36) major sources under the jurisdiction of the Tribe's Title V Program.

The AQP began full implementation of the Title V Program's Compliance Monitoring and Enforcement Program in 2015, consistent with the Reservation-specific Compliance Monitoring Strategy (CMS) approved by the USEPA on September 17, 2014. Compliance and enforcement procedures are defined for AQP and regulated sources in the AQP's Tribal Council approved Inspector Protocol Manual (IPM) and Enforcement Procedures and Penalty Policy. The main objective of the Enforcement Procedures and Penalty Policy is to ensure timely, appropriate, and fair enforcement response by AQP to alleged violations of the Clean Air Act. This policy is consistent with USEPA policies and guidance for enforcement actions including the USEPA's High Priority Violator and Federally Reportable Violations policies.

To date, AQP has conducted nineteen (19) full compliance evaluations and two (2) partial compliance evaluations, in adherence with the schedule set forth in the CMS. Notice of Violations have been issued for three (3) permitted sources and enforcement cases have been settled for two (2) permitted sources. The AQP is required by USEPA to enter the Title V Program's compliance and enforcement history into the USEPA's Integrated Compliance Information System (ICIS). All required compliance and enforcement reporting has been entered into ICIS and this information becomes available to the public on USEPA's Enforcement and Compliance History Online (ECHO).

3.5 Region 7 – 9 *Tribes, Iowa, Kansas, Missouri, Nebraska*

There are nine (9) federally recognized Tribes in USEPA Region 7, seven of which are NTAA member Tribes. The following list highlights recent successes of Tribal Air Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Successes

- Prairie Band Potawatomi Nation completed an Emissions Inventory, established ambient air and meteorological monitoring sites, completed radon mitigation training and measurements, and healthy home certification;
- In July, both Tribal and USEPA representatives met for the first Region 6 & 7 Indoor Air Quality Stakeholders Meeting, hosted by the Eastern Shawnee Tribe Environmental Department.

Challenges and Priorities

- Lack of sufficient funding;
- Maintaining monitoring equipment;
- Need for greater USEPA support with ambient air monitoring issues;
- Concentrated animal feeding operations and agricultural emissions.

Prairie Band Potawatomi Nation

The Prairie Band Potawatomi Nation (Nation) completed an Emissions Inventory (EI), established ambient air and meteorological monitoring sites, completed radon and mitigation training and measurements, and healthy home certification. Other successes included conducting an Asthma Screening Workshop, attended by 24 community children and families; collaborated with fellow Tribal departments with a growing network among Housing, Schools, and Health Care professionals.

The challenges faced by the Nation are maintaining monitoring equipment during unforeseen issues and lack of funds. Furthermore, the Nation seeks greater USEPA support and follow through with ambient monitoring issues.

3.6 Region 6 – *66 Tribes, Louisiana, Arkansas, Oklahoma, New Mexico, Texas*

There are 66 federally recognized Tribes in USEPA Region 6. The following list highlights recent successes of Tribal Air Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Successes

- The United Keetoowah Band of Cherokee Indians in Oklahoma established a Tribal air program in October 2013, and completed the Tribe's first emissions inventory in September 2015;
- Pueblo of Laguna's Treatment in the Same Manner as a State (TAS) under CAA 105 & 505 (a)(2) was approved;
- The Inter-Tribal Council of Northeast Oklahoma joined the Four States Clean Air Alliance (FSCAA), an organization that works on ground-level ozone issues. FSCAA's membership mainly includes county level governments from Missouri, Kansas, Oklahoma, and Arkansas;
- In July, both Tribal and USEPA representatives met for the first Region 6 & 7 Indoor Air Quality Stakeholders Meeting, hosted by the Eastern Shawnee Tribe Environmental Department.

Challenges and Priorities

- Continued development of Tribal Air Programs, including indoor and ambient air quality;
- Jurisdictional issues;
- Additional funds for Tribal Air Programs;
- Retaining staff.

United Keetoowah Band of Cherokee Indians in Oklahoma

The success of the United Keetoowah Band of Cherokee Indians in Oklahoma included starting a Tribal air program in October 2013, and completing the Tribe's first emissions inventory in September 2015.

United Keetoowah Band indicated their challenge is mainly jurisdictional issues and accessing funds, including finding fund-able projects that do not include ambient monitoring, and uncertainties regarding funding of radon projects.

Pueblo of Laguna

Pueblo of Laguna indicated their success was the approval of Treatment in the Same Manner as a State (TAS) under CAA 105 & 505 (a)(2) in 18 months, and continuing to build the program's capacity. While building capacity has been steady, Pueblo of Laguna saw challenges with staff turnover.

3.7 Region 5 – *35 Tribes, Michigan, Minnesota, Wisconsin*

There are 35 federally recognized Tribes in USEPA Region 5, and 17 are NTAA Member Tribes. In 2015, 16 Tribes in Region 5 received CAA 103/105 funding and two received SIRG Radon funding. However, there is further need in Region 5: no funded Tribes received full funding,

one Tribe was not funded, and multiple other Tribes did not apply for funding at all due to lack of STAG funding, previously denied requests, and the fact that writing grants is resource and time intensive. Five Tribes in Region 5 have Treatment as a State (TAS) status. Additionally, three more TAS applications are pending. The following list highlights recent successes of Tribal Air Programs in this Region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these Region 5 Tribal Air Programs.

Successes

- The Tribal Air Resources Journal, an annual publication by Tribes in Region 5, highlights Tribal Air Quality achievements, challenges, setbacks and successes. This year all 35 Tribes in Region 5 are included in the Journal. The Journal may be accessed and read at the following link, http://www7.nau.edu/itep/main/ntaa/TribalAirResources/Regional5/;
- The Leech Lake Band of Ojibwe is partnering with USEPA on the Air Quality Small Sensor Pilot Study to compare accuracy and usefulness of small PM sensors in comparison with FRM monitors;
- The Fond du Lac and Bad River Bands are in the active process of Class 1 redesignation; and following a 14-year effort for Class 1 redesignation, Forest County Potawatomi finalized negotiations seven (7) years later to designate Class 1 AQRVs and thresholds;
- USEPA notifies the Tribes in R5 of Title V permits reviewed or submitted to USEPA upon their receipt. This allows Tribal review and information sharing of these permits within the Tribal Areas of Interest;
- Many Tribal Representatives in Region 5 serve on regional and national workgroups, such as the NTAA, CAAAC, TAMS, CRCPD, AWMA and work with LADCO, NTOC, RTOC, NTSC among others.

Challenges and Priorities

- Funding must be increased in order to establish new Tribal Air Programs and to support and continue to build capacity of existing air programs, of which many are operating in "keep the lights on" mode;
    - Often Tribes are perceived to have adequate funding, but the reality is that Tribes are very good at making do and finding creative alternatives, that are not solutions, but rather make the best of the situation. This can create a false perception of fulfillment;
- Air monitoring efforts are in jeopardy due to aging equipment and lack of spare parts or replacement funds;
    - Use of monitoring for: Class 1 Redesignations, AQRV baseline, model proofing, determine trends and identify potential impacts;
- Tribal participation in the RPOs/MJOs;
- Climate change adaption. Flora and fauna shifts;

    - Examples include: moose, wild rice, tulibee, traditional plants;
- Protection of Ceded Territories as well as Treaty Rights;
- Lack of technical and financial support for indoor air quality programs (IAQ).

Tribal Air Resources Journal

The Tribes of USEPA Region 5 (Minnesota, Wisconsin, and Michigan) prepare the Tribal Air Resources Journal (TARJ) annually to highlight their achievements and successes in the air quality management arena, as well as share obstacles and setbacks encountered in their Tribal communities. The Tribes in Region 5 (R5) have prepared the TARJ annually since 2008. In this Journal, each Tribe in R5 submits a one page entry on their air quality issues and concerns, which reflects their diverse nature and the unique issues faced by each.

Figure 9 Since its inception in 2008, the Journal has grown to include all 35 Region 5 Tribes.

Included in the Journal is a summary on the status of Tribal funding and involvement in local/regional/national air quality management issues. The TARJ contains an updated map of Indian Country in R5, including the Ceded Territories in MN, WI, and MI, and a contact list for Tribal Air Professionals for networking and developing potential partnerships. The overall goal of the Journal is to communicate and promote potential partnerships and leverage resources for Tribes in R5 now and into the future.

Each year the Journal grows not only in the number of Tribes it embodies, but in content to assist and educate USEPA, other federal partners, interested parties/agencies and Tribes across Indian Country. The 2015 edition included submissions from all 35 Tribes in R5.

Small Sensor Pilot Project

The Air Quality Small Sensor Pilot Project between Leech Lake Band of Ojibwe (Band) and USEPA OAQPS commenced operation in October 2015, with the goal of assisting all parties in understanding local-scale air quality issues and potential differences between local-and regional-scale particulate matter (PM) monitoring.

USEPA is lending three PM sensor devices to the Band to help evaluate the potential benefits and determine the limitations of small sensor continuous PM measurements. MetOne loaned Leech Lake the use of a PM 2.5 Neighborhood Monitor to evaluate in conjunction with the pilot study. This pilot study strives to examine small sensor precision and accuracy comparing data collected from the small sensors with onsite collocated FRM PM 2.5 data in a cold, inclement climate.

Figure 10 Foreground FRM PM 2.5 monitor head, midground Small Sensor Project, background MetOne Neighborhood sensor on met tower.

Additionally, this pilot project will evaluate spatial gradients in concentrations near PM emission sources. While the equipment and monitoring data collected during the study are not intended for regulatory purposes, this pilot will help USEPA evaluate next generation monitoring and air sensors for citizen science and potentially provide cost-effective tool for air quality screening in Indian country.

R5 Permit Review Notification to Tribes

USEPA R5 and Tribes in R5 have created a notification system to notify Tribes of permits to be or in process of review or issuance by USEPA R5. Tribes in R5 have submitted a database of the Tribal Areas of Interest (i.e., counties) of which Tribes are requesting to receive updates on permit applications, permit reviews and comment periods that USEPA engages in. We, as Tribes, provide this information to USEPA R5 to assist them to make notification/information sharing more efficient so Tribes can contribute to the process.

Tribes in R5 raised this concern to R5 USEPA over the past few years both directly and in the NTAA priorities presentations. During this past year, USEPA has taken steps to address the NTAA R5 Priorities, of which USEPA addressed the permit notification concern and established a notification review protocol for R5 USEPA Staff. To date, notifications have been timely and useful to not only notify and engage Tribal involvement, but also for Tribes to share information with USEPA regarding the facility in review.

3.8 Region 4 – *6 Tribes, Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee*

There are six federally recognized Tribes in USEPA Region 4, four of which are NTAA member Tribes. The following list highlights recent successes, challenges, and priorities related to Tribal air quality in the region.

Successes

- Poarch Band of Creek Indians partnered with the University of South Alabama to construct a MET station and joined the regional Mesonet;
- NTAA In-person Executive Committee Meeting held in Atmore, Alabama
- The Catawba Indian Nation's Ambient Air Program:
    - Initiated ozone monitoring for 2016;
    - Continues to monitor $PM_{2.5}$ levels;
    - Is partnering with TAMS to receive capacity building technical training and implement QA/QC audits utilizing air monitoring equipment loan program;
    - Is utilizing the Tribal Data Toolbox for data management;
- The Catawba Indian Nation's Indoor Air Program:

- Continues to partner with ISWA Housing conducting IAQ assessments, providing detailed findings and solutions to address IAQ issues in housing and Tribal Government Buildings;
- Collaborated with ITEP to host "Indoor Air Quality in Tribal Communities" and developed partnership with the University of North Carolina Healthy Homes Program to bring IAQ, Green Cleaning and Integrated Pest Management training to staff and residents;
- Participated in integrating, energy efficiency, IPM and IAQ best management practices into the home renovation process for Catawba. This activity was initiated through the participation and technical assistance from Henry Slack and Danny Orlando (USEPA Region 4) and their assistance in coordinating blower door and duct testing to implement and verify best practices to achieve what we're calling "renewable ready" homes. We're looking forward to incorporating these measurements and best practices into our home renovation program;
- Partnered with Indian Health Service to develop an "environmental trigger checklist." This innovative partnership will hopefully be a model for other Tribes as they continue to address and provide solutions to tribal members with asthma and other upper respiratory challenges.

Challenges and Priorities

- Air program development and TAS;
- Improving and monitoring indoor air quality;
- Climate change research and adaption planning, and incorporating traditional ecological knowledge into these efforts;
- Increasing levels of dust pollution caused by drought;
- Hydraulic fracturing pollution.

Poarch Band of Creek Indians

From January 12-14, 2016, the NTAA held an in-person meeting in Atmore, AL, hosted by the Poarch Band of Creek Indians. The meeting included various discussions including how to strengthen partnerships; develop a transitional document for USEPA to the incoming new administration; teleconference meeting with Ms. Janet McCabe, USEPA Assistant Administrator of Office of Air and Radiation; and drafted a letter to the USEPA Administrator requesting funds for Tribal Air Programs, in response to availability of $21 million in the Omnibus budget.

In addition to the meeting, the host Tribe provided a tour of their community, their MET station by way of a wagon hay ride and a tour of their museum. The meeting proved to be a success largely credited to the great hospitality of the host Tribe.

Poarch Band of Creek Indians

The Poarch Band of Creek Indians (PBCI) started a partnership with the University of South Alabama (USA) in 2014. The meteorological department at USA has a Mesonet of 26 weather stations that spans 13 Gulf Coast counties across three (3) states. The Mesonet is nationally recognized as evidenced by its participation in the Digital Hurricane Consortium (a group of university researchers engaged in hurricane landfall research) and the National Mesonet Pilot Program (to promote the establishment of a National Mesonet). Working with the USA Mesonet, PBCI constructed a meteorological station that provides near real-time weather data for 18 parameters. PBCI entered into a Memorandum of Agreement (MOA) with USA to form a partnership and for PBCI to join the Mesonet.

The MET station was constructed with funds through an USEPA Clean Air 103 project grant. PBCI contracted the construction of the station using blueprints and specs provided by USA so that the MET station would be in compliance with the other stations in the Mesonet. USA also provided a list of equipment to be purchased that is standard with all other stations. Staff from USA provide assistance to PBCI staff in on-site maintenance and assist with calibration of equipment at the site per the MOA. The roles that both PBCI and USA staff fulfill are designated in the MOA and it has proved to be beneficial to both entities.

Figure 11 The NTAA Executive Committee inspects the MET station operated by the Poarch Band of Creek Indians.

The Poarch Band of Creek Indians have had several challenges throughout the process of getting the MET station put in place as well as establishing an air program at all. Some of the challenges we have faced in establishing the MET station stem more from the technical side. We have been unable to establish a connection to send data through the internet as was originally planned. We have been working almost a year trying to solve this dilemma. The other main challenges we originally faced with the MET station were the site location, land availability, and at times accessibility.

Other problems we face are funding and a small staff. Due to the Region's small number of Tribes, there is not a lot of funding available for all six (6) Tribes. Because of the lack of funding, it is not possible to dedicate one person's entire time to the Air program or hire another person to be dedicated solely to the Air program. Lack of funding also leaves the Tribe unable to move forward with its desired plan to start ambient air monitoring.

3.9 Region 2 – *8 Tribes, New Jersey, New York, Puerto Rico, US Virgin Islands*

There are eight federally recognized Tribes in USEPA Region 2, two of which are NTAA members. The following list highlights recent successes of Tribal Air Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Successes

- The Saint Regis Mohawk Tribe's IAQ program continues to provide IAQ assessments and recommendations for residential and office buildings, as well as educational outreach to the Tribal community on reducing exposure to indoor pollutants;
- The Saint Regis Mohawk Tribe is currently sampling household dust for polychlorinated biphenyls (PCBs) and dioxin pollutants that may have come from the nearby Superfund site;
- The Saint Regis Mohawk Tribe through a grant from USEPA Region 2 drafted a climate change adaption plan including plans for the Shinnecock Nation and the Nations represented by the Haudenosaunee Environmental Task Force.

Challenges and Priorities

- Application requirements, including matching funds, and scarce funding opportunities make it difficult for Tribes to acquire funding for air programs;
- Funding is needed to weatherize homes and remediate problems associated with excess moisture;
- Creating standards for airborne PCBs from a superfund cleanup site;
- Air quality and environmental contamination issues related to the now-closed General Motors and Alcoa industrial sites;
    - Mobile source emissions from the shipping industry and on-road/non-road sources;
- Hydraulic fracturing of Marcellus Shale;
- Climate change adaption and planning.

Saint Regis Mohawk Tribe

The Saint Regis Mohawk Tribe's success is drafting a climate change adaptation plan. It is uniquely theirs as it follows their Thanksgiving address and has more meaning to everyone at Akwesasne. Another success includes upgrading their National Atmospheric Deposition Program (NADP NY22) site to solar power to conserve energy and make the site self-sufficient.

Figure 12 Solar panels powering a Saint Regis Mohawk Tribe monitoring site.

Several challenges include having sufficient money and creating standards for PCBs present in the air. Money to help the community repair and remediate problems with homes from excess moisture found in their area. Since there are no current standards for PCB's in air, they are hoping to create a standard of their own in order to have more say in the processes and industries that affect them. With a superfund site adjacent to their border, their people are exposed to supposedly "safe" level of PCB's, a carcinogen, according to USEPA.

Another challenge faced by the Tribe is coming up with the required match on grants including the decreased amounts of the grants. It has been shown that Tribes can do a lot with a little. Sometimes it's not worth it to go for a smaller pot of money; however, the impact can sometimes be far greater. Thus the challenge is weighing the costs and benefits and ensuring there's a win-win for the Tribe.

3.10 Region 1 – 10 Tribes, Connecticut, Maine, New Hampshire, Rhode Island, Vermont

There are 10 federally recognized Tribes within USEPA Region 1, two of which are NTAA member Tribes. The following list highlights recent successes of Tribal Air Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Successes

- In the face of budget cuts, the Penobscot Nation's Air Program has managed to grow its capacity by leveraging state partnerships and voluntary pay cuts.

Challenges and Priorities

- Insufficient funding has resulted in Tribal air program budget cuts and reduced program capacity;
- Payroll cut and reduced hours make it difficult to retain employees;
- The Penobscot Nation's Air Program manager chose to take a pay cut in order to maintain the program's operational capability;
- Climate change and associated impacts on ozone and human health;
- Particulate matter is the region's most problematic priority pollutant.

Tribal Air Programs becoming more and more efficient

The ironic thing about budget cuts and work hour reduction is that more equipment becomes available if there is no one to run it. Such is the case of the Penobscot Nation's NADP/MDN site: ME04 in Carrabassett Valley, Maine.

Figure 13 Penobscot Nation Air Program air quality monitoring site.

Because of the symbiotic working relationship between the state's air bureaus and the Tribes throughout the area, whenever the equipment needs to be repaired, everyone checks to see if they have an old device in storage that might offer up a needed part. Likewise, when workers are laid off due to budget cuts and aspects of the air program become shuttered, the preference is to offer the device up on loan to anyone who would be willing to run it according to a mutually agreed-upon QAPP. If so, then the data is shared with everyone else in the network.

In such a manner, human life and the environment is kept protected, or at least watched after. The Penobscot's Air Program manager faced a dilemma a couple of years ago: reduce the size of the monitoring program or take a cut in pay. He could have reduced the amount that the program paid for sample analysis on filters and in precipitation collections, but instead chose to get paid for fewer hours. His counterparts in the state offices found themselves having to do both of these things. Thus, a particulate sampler (BAM) became available and he was asked if he would like to run it. The state would cover the cost of the machine's consumables, including a data transmission line to the internet.

He agreed and spent several months readying the site in the mountains of Maine where it would be located. In the face of budget cuts, a little bit of elbow grease goes a long way.

3.11 Case Study: A Successful Partnership between Tribes and USEPA

USEPA's Clean Air Status and Trends Network (CASTNET) Tribal Monitoring Sites

The Clean Air Status and Trends Network (CASTNET) is a national, long-term monitoring network established to assess trends in ambient concentrations, atmospheric deposition, and ecological effects due to changes in stationary and mobile source emissions. With more than 90 sites located in sensitive eco-regions, CASTNET is operated by the USEPA, National Park Service, Bureau of Land Management's Wyoming State Office, Tribes, universities, and state partners.

The network was established under the 1990 Clean Air Act Amendments to assess trends in acidic deposition due to emission reduction programs such as the Acid Rain Program (ARP), NOx Budget Trading Program (NBP), the Clean Air Interstate Rule (CAIR), and the Cross-state Air Pollution Rule (CSAPR). CASTNET reports on ambient concentrations of sulfur and nitrogen species as well as rural ozone concentrations. CASTNET ozone data is submitted to

USEPA for comparison with the National Ambient Air Quality Standards (NAAQS) to determine if an area is in attainment.

There has been a long-standing and continuously growing partnership between Tribes and USEPA's Clean Air Status and Trends Network (CASTNET). In 2015, USEPA added a sixth Tribal monitoring site in partnership with the Nez Perce Tribe. This collaboration allows Tribal partners to collect ambient air quality data that can serve multiple objectives and allows USEPA to establish network sites in key geographic locations. USEPA currently supports the operation of six (6) Tribal monitoring sites:

- Three full CASTNET sites in partnership with the Cherokee Nation (OK) (since 2002), Alabama-Coushatta Tribe (TX) (since 2004), and Santee Sioux Nation (NE) (since 2006).
- Three CASTNET small-footprint, filter pack-only monitoring sites in partnership with the Kickapoo Tribe (KS) (since 2014), the Red Lake Band of Chippewa (MN) (since 2014), and our newest site (established in December 2015) with the Nez Perce Tribe (ID). These small-footprint monitoring sites provide a low cost, low maintenance method for Tribes to become involved with the CASTNET monitoring program.
- All six sites measure ambient concentrations of ammonia in partnership with the National Atmospheric Deposition Program's (NADP) Ammonia Monitoring Network (AMoN).

For additional information see: https://www.epa.gov/castnet.

4 Climate Change Impacts in Indian Country

In both the 2014 *National Climate Assessment* and *2016 Climate and Health Assessment*, the U.S. Global Change Research Program (USGCRP) found that Tribal communities are more vulnerable to the impacts of climate change due to many factors including isolation, poverty, and dependence on the land for resources.[7,8] Tribes in every region are facing unique challenges associated with climate change, but the common denominator is that it will in one way or another threaten the air quality, health, food and water security, and cultural traditions in every Tribal community.

Climate change is listed as a priority by NTAA member Tribes in every region, and the regions being threatened by climate change are as diverse as the threats themselves. Some of the key climate change impacts include elevated levels of air pollution and associated health impacts, reduced food and water security, and relocation due to rising sea levels and/or extreme weather events. Climate change will also make AI/AN communities more vulnerable to severe future impacts including lost cultural identity as important plant and animal species vanish

[7] USGCRP. (2014). National Climate Assessment. *U.S. Global Change Research Program.* Retrieved from http://nca2014.globalchange.gov/report/sectors/indigenous-peoples#intro-section-2

[8] USGCRP. (2016). The impacts of climate change on human health in the United States: a scientific assessment. *U.S. Global Change Research Program*. Retrieved from https://health2016.globalchange.gov/

and hard hit communities are displaced. The consequences of climate change are amplified by the fact that many Tribes experience high rates of poverty, unemployment, and poor housing conditions, and are underserved by key services such as healthcare, infrastructure, electricity, and education.

4.1 Air Pollution

Climate change will directly impact both indoor and outdoor air quality by causing increased levels of ground-level ozone, fine particulate matter ($PM_{2.5}$), and aeroallergens. A whole host of climactic-driven factors will contribute to this: warmer average temperatures, shorter winters, less frequent precipitation, more frequent wildfires, etc. Due to new atmospheric conditions, ozone will be created in the atmosphere and transported to ground-level at higher rates. Ambient levels of $PM_{2.5}$ are closely tied to variable weather conditions, and will increase as wildfires become more frequent and weather patterns lead to more dust. Likewise, aeroallergens are influenced by weather and seasonal conditions, and are expected to increase in quantity along with lengthened growing seasons. In some parts of the U.S., ragweed allergy season has already grown by over 20 days since 1995.[9]

4.2 Health

Climate change is expected to endanger public health, both directly and indirectly. The USEPA's Endangerment Finding cites numerous health effects associated with increased levels of atmospheric greenhouse gasses.[10] The USEPA predicts that the negative effects of extreme hot days will outweigh the positive effects of extreme cold days, a scenario that will disproportionately impact poor communities that cannot afford or do not have access to air conditioning. Climate change will exacerbate harmful air pollutants, including ground-level ozone pollution and $PM_{2.5}$, which are associated with respiratory and cardiovascular disease. Changes in temperature and precipitation patterns will increase aeroallergens and rates of vector-borne diseases. Finally, climate change is leading to more frequent extreme weather events, which have the potential to severely impact Tribes, depending on preparedness and geographic location.

Figure 14 AI/AN children experience higher than normal asthma rates, something that is expected to increase with climate change. ©Stephen Welstead/LWA/Corbis. Retrieved from https://health2016.globalchange.gov/air-quality-impacts

[9] USGCRP. (2016). The impacts of climate change on human health in the United States: a scientific assessment. *U.S. Global Change Research Program*. Retrieved from https://health2016.globalchange.gov/

[10] Environmental Protection Agency. (2009) EPA's Endangerment Finding. Retrieved from http://www3.epa.gov/climatechange/Downloads/endangerment/EndangermentFinding_Health.pdf

4.3 Landscapes, Weather Patterns, and Extreme Weather Events

Across North America, changing weather and seasonal patterns are expected to increase ambient levels of air pollutants that are known to impact human health. Coastal communities will face challenges associated with sea level rise, larger storm surges, and sea water flooding. Arid regions will experience more extreme drought and precipitation patterns shifting towards less frequent but more intense rainfall – which together cause more severe flooding.

More frequent drought and increasing amounts of pests (e.g. mountain pine beetle) are expected to cause dieback and even extinction of some tree species that are culturally important to some Tribes.[11] This is threatening forests, ecosystems, and the Tribal communities these support. Over the past few years, record-setting wildfire seasons across North America have highlighted the consequences of hotter, drier summers. Wildfires threaten tribal communities with loss of lives, homes, businesses, livestock, and culturally significant food and medicinal species. Wildfires also significantly reduce air quality and can cause health impacts such as asthma attacks. 2015 was the worst wildfire season on record for the United States and the 2016 wildfire season is off to an early start. Alaska's first wildfire of the year came in February. The National Interagency Fire Center predicts "above normal significant fire potential" for many U.S. regions for the summer of 2016.[12]

4.4 Food Security

Climate change is threatening subsistence based food security of many Tribal communities, and this threat is expected to increase alongside the growing consequences of climate change. In some regions, more frequent drought conditions are making subsistence agriculture more difficult. Further, worsening air pollution will lead to more pollutants settling on food left out or being absorbed or ingested by plants and animals, causing further human exposure.

Figure 15 Changes in sea ice are reducing food availability and creating dangerous hunting conditions. ©Daniel Glick, Retrieved from http://nca2014.globalchange.gov/highlights/regions/alaska.

Changing seasonal and precipitation patterns is resulting in loss or shifting range of many species of plants and animals. Traditional hunting and foraging activities are becoming more difficult and in some cases dangerous. Shorter, warmer winters are causing early sea-ice melt in the Arctic, creating dangerous hunting conditions. These conditions are also facilitating abnormally large pest populations, in turn causing population decline of plants and game

[11] Daigle, J. J., Putnam, D. (2009). Maine's Climate Future: An Initial Assessment. University of Maine. Retrieved from http://climatechange.umaine.edu/files/Maines_Climate_Future.pdf

[12] National Interagency Fire Center. (2016) National Significant Wildland Fire Potential Outlook. Retrieved from http://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf

animals such as moose.[13] Additionally, ocean acidification and warming (among other factors) are reducing the availability of culturally important food species including salmon and shellfish.

4.5 Water Security

Along with other factors, prolonged drought, changing precipitation patterns, and decreasing spring snowpack levels are causing a number of problems associated with water. Some wells and springs across the southwest have begun to dry up, a major issue for Tribal communities that are unable to easily drill deeper wells due to financial constraints. Continuing drought conditions have led to extreme wildfires across the west. Lower spring snowpack threatens communities who rely on summer melt for residential and agricultural water needs.

4.6 Cultural Identity

Climate change threatens AI/AN culture in a number of ways. A number of culturally important plants are beginning to disappear, threatening spiritual, ceremonial, and medicinal practices of many Tribal communities.[14] Climate-induced displacement will likely lead to disruption of cultural resources as severely impacted communities are forced to relocate to new areas. Communities that are unable to transition to a new area as a group could face major cultural losses in the event that community members settle in different areas. Further, this relocation may diminish connections between Tribal leaders and younger generations, impairing their ability to share traditional knowledge and Tribal history.[15]

4.7 Adaption

Adaption to a changing climate is possible and in many cases necessary. However, adaption measures are likely to become more and more cost prohibitive as climate change impacts such as extreme weather events become more common and severe. In their *2014 National Climate Assessment*, the U.S. Global Change Research Program notes that more often than not, "adaptation options are limited by poverty, lack of resources, or – for some Native communities, such as those along the northern coast of Alaska constrained by public lands or on certain low-lying Pacific Islands – because there may be no land left to call their own[16]."

[13] Dell'Amore, C. (2015). What's a Ghost Moose? How Ticks Are Killing an Iconic Animal. National Geographic. Retrieved from http://news.nationalgeographic.com/2015/06/150601-ghost-moose-animals-science-new-england-environment/

[14] USGCRP. (2016). The impacts of climate change on human health in the United States: a scientific assessment. *U.S. Global Change Research Program*. Retrieved from https://health2016.globalchange.gov/

[15] USGCRP. (2016). The impacts of climate change on human health in the United States: a scientific assessment. *U.S. Global Change Research Program*. Retrieved from https://health2016.globalchange.gov/

[16] USGCRP. (2014). National Climate Assessment. *U.S. Global Change Research Program.* Retrieved from http://nca2014.globalchange.gov/report/sectors/indigenous-peoples#intro-section-2

4.8 Relocation

Ultimately, climate change and new weather patterns will force some Tribal communities to relocate. The U.S. Department of Housing and Urban Development recently set aside $48 million of grant money for the Biloxi-Chitimacha-Choctaw Indians of Isle de Jean Charles to relocate from their coastal community which has supported them for over a century. In 1950, the Isle was 5 miles wide by 12 miles long. Coastal erosion and rising water levels have shrunk the island to ¼ mile by 2 miles. A number of coastal AI/AN communities in Alaska and Washington are beginning to plan for relocation, including the Quinault Indian Nation[17] and the Alaska Native Village of Kivalina.[18]

Figure 16 Melting permafrost and unusual storms are causing coastal erosion and property damage, including this house in Shishmaref, AK. Retrieved from http://motherboard.vice.com/read/climate-

4.9 Clean Power Plan

The USEPA's Clean Power Plan (CPP) final ruling states: "Tribal communities whose health, economic well-being, and cultural traditions that depend upon the natural environment will likely be affected by the degradation of ecosystem goods and services associated with climate change.[19]" For years, Tribes across the nation have been voicing concerns about the impacts of climate change. By issuing the Clean Power Plan Final Rule the USEPA has shown they are listening. The USEPA's partnership with Tribes in co-regulating Tribal air quality programs is crucial to the success of these programs. The CPP provides a platform for Tribes and the USEPA to strengthen their partnership as they work together to improve air quality in Indian Country. This partnership was highlighted during the CPP Draft Rule comment period, when comments made at a public hearing in Phoenix, AZ led to the USEPA hosting two training courses aimed at helping Tribal leadership, staff, and Members to understand the CPP and how to effectively comment on the draft rule.

The CPP Final Rule provides opportunities for Tribes seeking to improve both air quality and economic conditions within their community by including provisions for a Clean Energy Incentive Program (CEIP) that allows renewable energy and demand-side energy efficiency projects on Tribal lands to qualify for Emission Rate Credits (ERCs). These ERCs are valuable commodities that can be traded or sold. Incentivizing the development of renewable energy

[17] National Oceanic and Atmospheric Administration. (2016). Quinault Indian Nation Plans for Village Relocation. U.S. Climate Resilience Toolkit. Retrieved from https://toolkit.climate.gov/taking-action/quinault-indian-nation-plans-village-relocation

[18] National Oceanic and Atmospheric Administration. (2016). Relocating Kivalina. U.S. Climate Resilience Toolkit. Retrieved from https://toolkit.climate.gov/taking-action/relocating-kivalina

[19] Environmental Protection Agency. (2009) EPA's Endangerment Finding. Retrieved from http://www3.epa.gov/climatechange/Downloads/endangerment/EndangermentFinding_Health.pdf

on Tribal lands provides a multitude of benefits, including the sale of ERCs to states, creation of high-paying jobs related to clean energy development, income from energy production lease payments, and reduction of air quality health impacts related to fossil fuel mining and energy generation.

While there are certainly many positive aspects of the USEPA's Final Rule, there are still areas of concern. For example, there are environmental justice concerns associated with continued operation of electric generating units (EGUs) and continued or even expanded resource extraction (especially fracking) near Tribal communities.[20]

Though the Supreme Court has placed a stay on the CPP, it's important to continue working towards the goals laid out in the plan. Carbon dioxide, mercury, and other air pollutants released by power plants cause poor air quality and climate change, and therefore endanger Tribal communities.

5 NTAA Air Quality Support for Tribes

NTAA works annually to support Tribes through policy analysis of USEPA and other federal actions that address air quality in Indian Country. Between January 2015 and April 2016, NTAA has prepared and published 11 Policy Response Kits (PRKs) to help Tribes understand and comment on recent USEPA and other federal agency actions. Below is a summary of PRKs that NTAA has published:

- USEPA's Clean Power Plan including the associated Federal Plan and Clean Energy Incentive Program - NTAA released comments in December, 2015 and January, 2016. NTAA also hosted a webinar on October 15, 2016, to inform Tribal professionals about the Clean Power Plan and how to comment to USEPA. The recording of the webinar and NTAA's statement can be found on NTAA's website.
- USEPA's proposed Exceptional Events Rule Revisions, Notice of Proposed Rulemaking and Draft Wildfire/Ozone Guidance - NTAA created this Policy Response Kit to help Tribes submit comments to USEPA by February 3, 2016. On November 10, 2015, the USEPA proposed revisions to the 2007 Exceptional Events Rule, and announced the availability for public comment of a draft guidance document, which applies the proposed rule revisions to wildfire events that could influence monitored ozone concentrations.
- USEPA's proposed Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS - NTAA created this Policy Response Kit to help Tribes submit comments to USEPA by February 1, 2016. On November 16, 2015, the USEPA proposed an update to the Cross-State Air Pollution Rule (CSAPR) ozone season program by issuing the CSAPR Update Rule.

[20] National Tribal Air Association. (2015). National Tribal Air Association's Analysis of the EPA's Final clean Power Plan, NTAA Comments and Final Rule Outcomes. Retrieved from https://www7.nau.edu/itep/main/ntaa/docs/policy-response-kits/NTAAWhitePaperCPP.pdf

Starting in 2017, this proposal would reduce summertime emissions of oxides of nitrogen (NOX) from power plants in 23 states in the eastern half of the U.S., providing $1.2 billion in health benefits to millions of Americans.

- USEPA's proposed measures to cut methane and VOC emissions from the oil and natural gas industry and clarify permitting requirements including Minor New Source Review for General Permits in Indian Country.
- NTAA works to empower Tribes to improve air quality by working in partnership with other organizations.

  For example, NTAA partners closely with the Tribal Air Monitoring Support (TAMS) Center and more importantly, the TAMS Steering Committee. The TAMS Steering Committee meets regularly to discuss tribal air-management needs and determines the Center's tribal-support efforts. The Steering Committee also relays tribal concerns regarding air quality management to USEPA and other officials.

  The TAMS Center offers training courses that focus on a variety of topics related to ambient and indoor air quality monitoring.

  In addition to the classroom-style training offered by ITEP at the TAMS Center, the Center offers a number of technical-support services to assist Tribes in their air quality programs, including, but not limited to:

  - Technical Assistance - The TAMS Center has several technical experts on staff available via phone or email to answer questions on air monitoring-related topics or other requests.
  - Equipment loan program
  - Several TAMS documents were linked and are available on the NTAA website.
- NTAA consults and coordinates with the USEPA National Tribal Operations Committee's (NTOC) National Tribal Caucus. In May, 2015, NTAA provided a FY17 Budget Analysis to help NTOC create budget recommendations for Tribal Air Programs to USEPA.
- NTAA partners with the Clean Air Act Advisory Committee (CAAAC) to better serve Tribal interests on a national level.
- NTAA has had several meetings with the National Association of Clean Air Agencies and continues to explore potential work together.
- In 2015, the NTAA's Executive Committee created the NTAA Indoor Air Quality Work Group (IAQWG) as a response to a growing concern by NTAA member Tribes regarding a lack of resources available for addressing indoor air quality (IAQ) in Tribal housing. NTAA put out a call to NTAA member Tribes and federal partners for help. Volunteer members included Tribal members, air quality program staff from Tribal governments as well as federal employees from the USEPA and the U.S. Department of Housing and Urban Development (HUD). Over forty members answered the call and volunteered to help. The IAQWG hosted several Tribal listening sessions for Federal officials and completed a national needs assessment for Indoor Air Quality in Indian Country. Over 80 Tribes submitted a

questionnaire prepared by the IAQWG and a final report on the data received was prepared and published.

- Other Resources - NTAA provides publications, webinars, and other resources for Tribes that are all publically available on NTAA's website. Specifically, in 2015, NTAA published a new interactive website at www.tribalairquality.org. This website includes interactive maps that help Tribes access air quality monitoring data, energy infrastructure data as well as links to other air quality resources for Tribes.

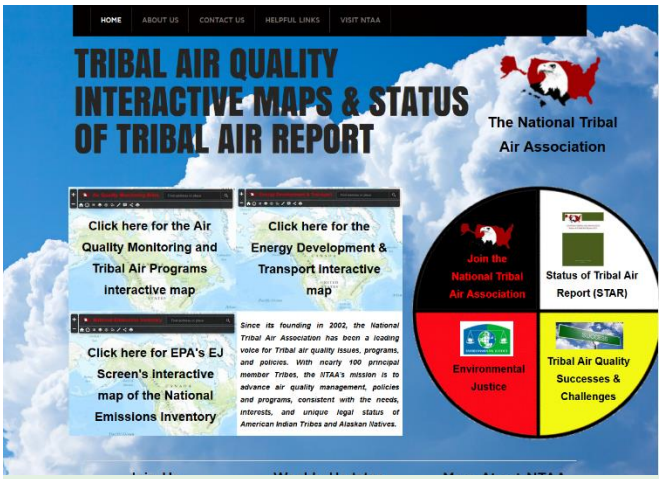


Figure 17 NTAA's interactive STAR page. http://www.tribalairquality.org/

6 Conclusion

The NTAA has created this 2016 STAR to showcase the work of Tribal Air Programs, to show what has been accomplished in partnership with the current leadership of USEPA and OAR, and what remains to be accomplished. For the incoming administration, these Tribal stories from each region serve to highlight continuing Tribal air program accomplishments, despite a stagnant budget. The 2016 STAR clearly demonstrates that securing sufficient funding is an ongoing challenge for Tribal Air Programs in every region, a fact that needs to be addressed.

Tribes are essential partners to local, state, and federal agencies in the management and co-management of air sheds. These partnerships promote cross-agency relationships and mutually beneficial sharing of data, equipment, expertise, and unique knowledge. In order to maximize these benefits, Tribal Air Programs, much like their state and local counterparts, simply must receive adequate funding and technical training and support.

The NTAA wishes to thank its partners and colleagues who work in collaboration with Tribes to protect air quality throughout the Indian Country and the nation as a whole. NTAA will continue to work with USEPA and state entities to advance air quality management and advocate for Tribal sovereignty through sound environmental management. The NTAA STAR is a living document and will continue to tell the story of Tribal Air Programs that work to protect the air we all breathe.

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NATIONAL TRIBAL AIR ASSOCIATION

FY2018 Tribal Air Quality Budget Analysis

May 2016

Appendix A. NTAA Tribal Air Quality Budget Analysis

National Tribal Air Association

The National Tribal Air Association (NTAA) was founded in 2002 through a grant from the US Environmental Protection Agency's Office of Air and Radiation.

Mission

The mission of the NTAA is to advance air quality management policies and programs, consistent with the needs, interests, and unique legal status of American Indian Tribes and Alaska Natives.

Goals

1. Advocate for and advance tribal environmental, cultural, and economic interests in the development of air policy at all levels of government (tribal, local, state, regional, federal, and international).
2. Promote the development, funding, and capacity building of tribal air management programs.
3. Promote and facilitate air quality policy and technical information that may include research and scientific and medical studies.
4. Advance the recognition and acceptance of tribal sovereign authority by conducting effective communication and outreach to local, state, federal, and international agencies, as well as the general public.
5. Encourage and support appropriate consultation with all tribal governments in accordance with Tribal structures and policies.

The NTAA is a Tribal member organization with over 100 principal member Tribes. The organization serves as a resource to all 566 federally recognized Tribal Nations. The NTAA's mission is to advance air quality management policies and programs, consistent with the needs, interests, and unique legal status of Tribes. As such, the NTAA uses its resources to support the efforts of all federally recognized Tribes in protecting and improving the air quality within their respective jurisdictions. Although the NTAA always seeks to represent consensus perspectives on any given issue, it is important to note that all Tribes may not agree upon its expressed views. Further, it is important that USEPA understands interactions with the NTAA do not substitute for government-to-government consultation, which can be achieved only through direct communication between the federal government and the Tribes. For more information, please visit www.ntaatribalair.org and www.tribalairquality.org.

FY2018 Tribal Air Quality Budget Analysis

Introduction

Over the last few years, the National Tribal Air Association (NTAA) has developed a snapshot of air quality funding gaps in Indian Country. This year, in recognition of the approaching 20th anniversary of the promulgation of the Tribal Authority Rule (TAR) (FR Vol. 63, No. 29, February 12, 1998), the NTAA would like to take a slightly different approach by providing a brief summary of the history of the rule and the impact it has had on air quality management in Indian Country.

The Story of Air Quality Management in Indian Country under the Clean Air Act

Background

Beginning in the 1960s, the U.S. Congress recognized the pervasive nature of ambient air pollution and passed the initial federal statues to begin controlling air pollution emissions from their sources. Through a series of amendments (1970, 1977, and 1990), the Congress refined its approach and clarified authorities for implementing the statute.

Although states had long been recognized as partners with the Federal government in developing strategies to control air pollution, federally recognized Tribes were first authorized to implement elements of the Clean Air Act (CAA) under the 1977 amendments. In establishing the Prevention of Significant Deterioration program under Title I of the CAA, the Congress authorized appropriate 'Indian Governing Bodies' to redesignate lands within the exterior boundaries of the Reservation to be more or less protective of air quality. This initial, limited recognition of tribal authority to manage their air quality, however, did not extend beyond the PSD program. In spite of these limitations a number of Tribes expressed interest in the program and between 1977 and 1990, four Tribes (the Tribes of the Northern Cheyenne, the Fort Peck, and the Flathead Reservations in Montana and the Spokane in Washington) redesignated their Reservation lands to Class I, thereby asserting their authority to be more protective of their air sheds.

In 1990 the CAA was amended once again and, in addition to a number of significant changes to strengthen air pollution control under the Act, the Congress granted authority to Tribes to implement the CAA in the same manner as states "within the exterior boundaries of the Reservation" and over other areas where the Tribe can demonstrate jurisdiction. The statute provided significant flexibility to the USEPA Administrator to determine how these provisions would be implemented and directed that final implementing regulations be promulgated within 18 months of the passage of the amendments.

Development of the Tribal Authority Rule

The USEPA undertook development of the implementing regulation for section 301(d) of the Act early in the 1990s. Because the statute granted considerable flexibility in developing the rule, the USEPA early on engaged leaders in Indian Country in a conversation about what kind of approach would be useful to the Tribes. The initial rule was proposed in 1994 and the final TAR was promulgated in February 1998. Although the TAR falls into that large compendium of implementing regulations developed by the USEPA to guide state and local programs, Congressional statutory clarity and some regulatory innovations on the part of USEPA make this rule unique for Indian Country.

Congressional Delegation of Authority – The CAA provides federal statutory authority for eligible Tribes to implement approved CAA programs. This means that the authority derives directly from the statute and may extend beyond areas where the Tribe normally exercises its inherent authority. In the words of the CAA, eligible Tribes have authority to manage air resources "within the exterior boundaries of the Reservation or other areas within the Tribe's jurisdiction." (CAA Section 301(d)(2)(B)) This language assures eligible Tribes that they will be able to exercise regulatory authority over all sources within the Reservation boundaries, including those on non-Indian owned fee lands, under an approved CAA program.

Flexibility and Modularity - Early in the consultation process with Tribes on how this regulation should be structured, tribal leaders urged USEPA to recognize Tribes' limited capacity to implement all the provisions of the CAA and to adopt a flexible approach that would allow Tribes to build programs incrementally. As a result, the TAR encourages Tribes to assess their air quality and develop programs that focus on their specific air quality concerns. These programs can be as narrow as "affected state" standing under section 505(a)(2) of the Title V operating permits program or as broad as a comprehensive Tribal Implementation Plan under Title I that provides full regulatory authority for the Tribe within the exterior boundaries of the Reservation. Recognizing that states were 20 to 30 years ahead of the Tribes in implementing the CAA, USEPA adopted an approach that allows the Tribes to grow their programs, starting small and incrementally adding elements as the Tribe builds its capacity.

Financial Assistance – Tribes have been receiving grant funding under section 103 of the CAA for many years to undertake initial assessments and program development work. Tribes, as provided by section 302(a)(5) of the CAA, have been eligible to receive financial assistance under section 105 of the CAA to implement CAA programs since the 1990 amendments. Section 105 authorizes financial assistance for "implementing programs for the prevention and control of air pollution or implementation of national primary and secondary ambient air quality standards." (Section 105(a)(1)(A)) Several Tribes applied for and received grants under this authority prior to the 1990 amendments but most other Tribes considered the statutory match (25-40%) requirement an insurmountable barrier. Using the authority found in section 301(d)(4) of the CAA, USEPA revised its grant regulations (40 CFR Part 35) to authorize USEPA to provide financial assistance under CAA section 105 authority for up to 95% of the cost of running a tribal air program for the first two years, and up to 90% thereafter. Tribes may apply

for waivers of this requirement based on financial hardship. These changes have largely eliminated a significant barrier to Tribes considering developing CAA programs.

Initial Challenges Tribes Faced in Implementing the CAA under the TAR

Awareness of the challenges facing the Tribes in implementing CAA programs didn't suddenly materialize on February 12, 1998. From the early 1990s USEPA and its partners began laying the groundwork for implementing the CAA in Indian Country. Noting that the states had been in the business of implementing the Act for more than 30 years, the USEPA recognized that the Tribes would need assistance on many fronts to acquire expertise and capacity to implement their own programs. The Preamble to the TAR laid out the three areas of significant concern for building tribal capacity: (1) a needs assessment; (2) communication; and (3) training. A fourth component not mentioned in this initial triad would be financial assistance, a key barrier to any jurisdiction implementing such a complex program.

Addressing those Challenges

By 1998 a number of these challenges were being addressed. Staff in USEPA's Regional Offices were working with Tribes to develop a better understanding of the air quality and the sources of air pollution on tribal lands. In 1992, USEPA began funding the Institute for Tribal Environmental Professionals (ITEP) at Northern Arizona University, which began offering introductory workshops on air quality program management to tribal environment professionals. Recognizing that Tribes would need financial assistance to begin doing preliminary assessments for implementing air quality management programs, USEPA requested and received in its 1996 Congressional appropriation grant funding of nearly $6.0 million to support tribal air quality programs. At that time, fewer than a dozen Tribes were managing air quality programs, mostly those Tribes monitoring air quality to support their PSD Class I designations.

However, by the time the TAR was promulgated in 1998, nearly 60 Tribes were receiving air grant funding, ITEP had developed a core curriculum to support tribal environmental professionals in air quality management, including a workshop on the Tribal Authority Rule, which was presented nine (9) times beginning in 1998 throughout the country, including Alaska, and USEPA regional and headquarters staff were being trained to work more effectively with tribal governments. Within a few years of promulgation of the TAR, significant progress had been made:

- Tribal funding had increased to over $10.0 million dollars;
- Nearly 120 Tribes were receiving air grant funding;
- Several dozen Tribes were implementing air quality monitoring for PM2.5, PM10, acid rain, and visibility;
- USEPA and ITEP had partnered to establish the Tribal Air Monitoring Support Center (TAMS) at USEPA's Las Vegas laboratory, and;

- ITEP training had expanded to reach over 200 Tribes with nearly two dozen unique workshops on implementing the CAA in Indian Country.

Successes and On-going Challenges since 1998

Significant progress has been made in supporting Tribes in the implementation of the CAA over the last 20 years. Strides have been made in capacity building, program development, and program implementation. However, significant challenges remain. This section will address both.

Capacity Building

As mentioned above, the Institute for Tribal Environmental Professionals (ITEP) at Northern Arizona University has been a critical factor in helping Tribes to build their capacity to develop programs. Since 1992 through USEPA funding and staff support, ITEP has developed nearly 400 unique workshops to present to tribal professionals on topics ranging from *Introduction to Air Quality Management* and *The Fundamentals of Air Monitoring* to *Air Pollution Modeling* and *Introduction to Title V Permits and Permit Review.* These workshops have reached over 4,500 participants. ITEP routinely assesses progress and strives to identify additional needs for training so that Tribes can continue to develop their programs. Through its training programs, ITEP has reached over three quarters of all federally recognized Tribes (430 out of a total of 566 Tribes). As another measure of its success, ITEP engages nearly 150 tribal environmental professionals as instructors in its workshops; these instructors have provided nearly 9,000 hours of instruction to other tribal professionals over the last 20 years. The Tribal Air Monitoring Support (TAMS) Center has provided technical assistance to 260 Tribes through courses and hands on professional assistance; the Center has served nearly 1500 tribal environmental professionals.

Program Development

A real measure of success, however, is how all this training translates into work on the ground. Examples of putting the theory learned in these workshops into practice can be found throughout Indian Country. In the body of this report, a number of Tribes have reported on their successes. One example can be seen in the write-up of the Confederated Tribes of the Coleville Reservation and their response to the catastrophic wildfires they experienced in 2015. The air monitoring systems they had in place, the experience and data they had compiled over the years of operations, and their education and outreach program were used to keep the community informed of the hazards and allowed many in the community to mitigate the potentially serious health effects related to exposure to these extreme smoke conditions. Another example of success in building capacity is the Gila River Indian Community in Arizona, which now has an approved Air Quality Management Plan and routine ambient air monitoring with data reported through AirNow so that community members can be kept apprised on air quality issues on the Reservation. Furthermore, four Tribes have approved Tribal Implementation Plans, two Tribes implement Title V Permitting programs (one via delegation

and one with an approved Tribal program), and nine (9) Tribes have delegation of the Federal Rules for Reservations (FARR).

The Tribes in USEPA Region V (i.e., Minnesota, Wisconsin, and Michigan) have come together to publish annually a report, *The Tribal Air Resources Journal*, that now represents all 35 Tribes in the region. The Journal documents program successes and challenges and is used to keep the tribal communities informed of the air quality activities and issues in the region. The Fond du Lac Band of Lake Superior Chippewa, for instance, recently announced their intention to redesignate their Reservation to Class I under the Prevention of Significant Deterioration Program. The Bois Forte Band of Chippewa and a number of other Tribes, on the other hand, announced that the Tribe's air quality activities have been suspended due to lack of funding to support the programs. As another example, the Mille Lacs Band of Ojibwe discovered through their monitoring efforts that the Reservation was a down-wind recipient of air pollution from the Minneapolis-St. Paul area. Subsequently, the Tribe has been working in partnership with the Minnesota Pollution Control Agency (MPCA) to assess PSD permits issued by MPCA that may impact the tribal community and its resources.

Below are a number of indicators of success in implementing air quality management programs in Indian Country:

- 50 Tribes have been approved for Treatment as State (TAS) under the Tribal Authority Rule; two (2) Tribes have applications pending approval. These approvals authorize Tribes to manage programs under the CAA, including regulatory development, Title V permits, PSD redesignations, air quality monitoring, etc. (Appendix F)
- 62 Tribes manage 81 monitoring sites, monitoring for criteria pollutants, hazardous air pollutants, and other pollutants under the National Atmospheric Deposition Program (NADP). (Appendices D & E)
- Tribes have issued over 300 permits for major and minor sources of air pollution under the New Source Review program, the FARR, and Title V. (Appendix G)
- Over 70 Tribes have submitted over 140 emission inventories; data from 34 of these Tribes are now included in the National Emission Inventory database. (Appendices H & J)
- 149 Tribes manage nearly 800 grants under various authorities for air quality management. (Appendix I)

Tables with additional information can be found at Appendices D through K.

Program Sustainability

As was stated above, it has been long recognized that Tribes, unlike states, undertake implementation of the CAA at a significant disadvantage because of the limitation of funding available to them. USEPA addressed this issue to some extent by providing relief to Tribes from the 25-40% match required to receive section 105 grant funding under the Act. However, some factors inherent to the tribal fiscal situation leave Tribes much more vulnerable to the up and down swings of federal funding availability. It is much more difficult for Tribes to

respond, even to small cuts in federal funding, with infusions of tribal funds. When funding cuts happen, Tribes' responses are limited: eliminate program services; reduce staff; suspend programs. One Tribe in the Northwest, for example, currently manages a very complex program, including delegation from the region for managing the FARR. The program is faced with a funding cut in 2016 that will mean some of their program will suffer. Whatever choice is made will weaken the overall program; at this point, there are no alternative sources of funding.

Part of the problem can be attributed to the fact that funding for tribal programs has not kept pace with the increase in the number of Tribes seeking to implement programs. In 2000, funding available for grants to tribal program was approximately $11.0 million; in 2016, grant funding available for tribal programs through the STAG appropriation is $12.8 million, an increase of about 16%. In those 16 years, while funding has increased by only 16%, the number of Tribes seeking funding to support their programs has grown by 25%. This number, of course, does not include those Tribes who have sought funding and have been denied or Tribes who have lost funding and have suspended or terminated their programs.

Table 2 State and Tribal Assistance Grant (STAG) Allocations for Fiscal Years 2012-2016

Annual State and Tribal Assistance Grant (STAG) Allocations					
Region	**2012**	**2013**	**2014**	**2015**	**2016**
1	$657,063	$613,577	$622,967	$621,504	$594,273
2	$440,175	$424,265	$424,983	$417,874	$403,087
4	$330,964	$312,481	$316,989	$313,173	$315,674
5	$1,263,752	$1,145,597	$1,179,144	$1,226,435	$1,228,784
6	$1,305,009	$1,174,439	$1,176,253	$1,181,133	$1,141,449
7	$465,216	$434,188	$499,756	$524,625	$534,917
8	$2,109,888	$2,002,337	$2,096,474	$2,070,039	$2,001,325
9	$3,259,737	$2,933,750	$2,974,502	$2,885,487	$2,967,439
10*	$2,657,197	$2,421,367	$2,466,932	$2,443,631	$2,464,053
Total	**$12,489,000**	**$11,462,001**	**$11,758,000**	**$11,683,901**	**$11,651,001**

***** Includes Alaska

In the context of new programs needing to be implemented (e.g., the Minor New Source Review program, Climate Change-Clean Power Plan, etc.) and additional Tribes interested in taking on programs, additional funding will be needed if these programs are to be sustained.

Future Funding Needs

As is evident in the above description, Tribal Air Programs have made a lot of progress in the 20 years that Tribes have been implementing the CAA. However, the limited availability of financial resources has been a significant barrier to more Tribes developing more programs. Had the 1996 appropriation of $11.0 million merely kept pace with the 2.2% rate of inflation,

the current appropriation would be nearly $17.0 million. The NTAA is requesting that USEPA consider the following budget initiatives, totaling $8.0 million, to fund new, on-going, and expanding Tribal Air Programs.

New and Expanding Existing CAA Programs $3.0 million – The Minor New Source Review, the newly revised Ozone NAAQS and the Clean Power Plan (CPP) represent new opportunities for Tribes to develop programs particularly addressing their needs. As noted above, many Tribes are already involved in permitting programs (i.e., FARR, Title V, PSD, etc.) and need additional resources to review and implement permits. This proposed funding increase would also support additional Tribes that have an interest in developing programs (TIPs, permitting, etc.) Many Tribes that are already experiencing or anticipating the impact of climate change are interested in participating in the CPP or developing their own adaptation plans. Tribes impacted by the changing Ozone NAAQS require resources to assess their air shed appropriately if state and local monitoring sites do not provide adequate coverage. These resources represent a down payment for Tribes to begin developing these new programs.

Monitoring Infrastructure $2.5 million – Tribes are currently managing 81 monitoring sites for various pollutants throughout the country. Some of the sites have been in place for many years; others are more recent. Many of the sites are outmoded or are in need of repair. This initiative would undertake a comprehensive assessment of the tribal air monitoring network and replace or upgrade equipment where necessary. This initiative would also provide additional base funding to support other Tribes interested in implementing air quality monitoring programs.

Supporting Alaska Natives $2.0 million – Alaska Natives, because of their geographic location and cultural values, bear a disproportionate share of the pollution burden placed on Alaska's environment. Air pollution, both ambient and indoor, threatens both human health and food security. Climate change is already taking its toll on Alaska's environment and effort needs to be focused on adaptation planning. These resources will be targeted to assist Tribes in Alaska conduct assessments and develop plans that address the wide ranging air quality issues and associated risks facing Alaskan Native people. The 229 distinct federally recognized Tribes in Alaska represent over 40% of federally recognized Tribes in the U.S.

Indoor Air and Radon Programs $1.0 million – Tribes throughout the country are finding it difficult to address indoor air quality issues such as radon, mold and other indoor air contaminants. In recent years federal funding for radon programs have been cut, which places greater stress on Tribal Air Programs to find alternative funding scenarios to continue such work. Recent engagement with the USEPA Office of Radiation and Indoor Environments has been positive; however, resources to Tribes have been lacking and are required in order to make meaningful improvements for tribal communities.

Needs Assessment $500,000 – The USEPA recognized early in its deliberations on developing regulations for implementing the CAA in Indian Country and clearly stated in the preamble to the final TAR a need to do a needs assessment for Indian Country. Needs assessments have

been done to address narrow programmatic issues (e.g., capacity building, indoor air, etc.), but no one has ever undertaken a comprehensive assessment of the air quality management needs in Indian Country. This proposal provides funding for such an initiative.

Appendix B: List of NTAA Member Tribes by USEPA Regions

104 Total NTAA Member Tribes

Region 1 (2 Tribes)
- Houlton Band of Maliseet Indians
- Penobscot Indian Nation

Region 2 (2 Tribes)
- Seneca Nation of Indians
- Saint Regis Band of Mohawk Indians

Region 4 (4 Tribes)
- Catawba Indian Nation
- Eastern Band of Cherokee
- Miccosukee Indian Tribe of Florida
- Poarch Band of Creek Indians

Region 5 (17 Tribes)
- Bad River Band of Lake Superior Tribe of Chippewa Indians
- Bois Forte Band of Chippewa
- Fond du Lac Band of Lake Superior Chippewa
- Forest County Potawatomi Community
- Grand Portage Band of Lake Superior Chippewa
- Grand Traverse Band of Ottawa & Chippewa Indians
- Lac du Flambeau Band of Lake Superior Chippewa Indians
- Leech Lake Band of Ojibwe
- Little Traverse Bay Bands of Odawa Indians
- Lower Sioux Indian Community
- Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan
- Menominee Indian Tribe of Wisconsin
- Oneida Tribe of Indians of Wisconsin
- Red Lake Band of Chippewa Indians
- Saginaw Chippewa Indian Tribe of Michigan
- St. Croix Chippewa Indian of Wisconsin
- White Earth Nation

Region 6 (18 Tribes)
- Caddo Nation of Oklahoma
- Cherokee Nation of Oklahoma
- Citizen Potawatomi Nation
- Delaware Nation of Oklahoma
- Fort Sill Apache Tribe of Oklahoma
- Iowa Tribe of Oklahoma

- Modoc Tribe of Oklahoma
- Ohkay Owingeh
- Pueblo of Acoma
- Pueblo of Jemez
- Pueblo of Laguna
- Pueblo of Pojoaque
- Pueblo of Santo Domingo
- Quapaw Tribe of Oklahoma
- Sac and Fox Nation
- Seminole Nation of Oklahoma
- Taos Pueblo
- United Keetoowah Band of Cherokee Indians in Oklahoma

Region 7 (7 Tribes)
- Kickapoo Tribe in Kansas
- Ponca Tribe of Nebraska
- Prairie Band Potawatomi Nation
- Sac & Fox Tribe of the Mississippi in Iowa/Meskwaki
- Sac & Fox Nation of Missouri in Kansas and Nebraska
- Santee Sioux Nation
- Winnebago Tribe of Nebraska

Region 8 (8 Tribes)
- Confederated Salish & Kootenai Tribes
- Fort Belknap Indian Community
- Fort Peck Tribes of Assiniboine & Sioux Tribe
- Northern Cheyenne Tribe
- Northwestern Band of Shoshone Nation
- Southern Ute Indian Tribe
- Standing Rock Sioux Tribe
- Ute Mountain Ute Tribe

Region 9 (20 Tribes)
- Bishop Paiute Tribe
- Blue Lake Rancheria
- Campo Band of Mission Indians
- Colorado River Indian Tribes
- Cortina Indian Rancheria of Wintun Indians
- Gila River Indian Community
- Hualapai Tribe
- Lone Pine Paiute Shoshone Reservation
- Los Coyotes Band of Cahuilla Cupeno Indians
- Manzanita Band of the Kumeyaay Nation
- Moapa Band of Paiutes

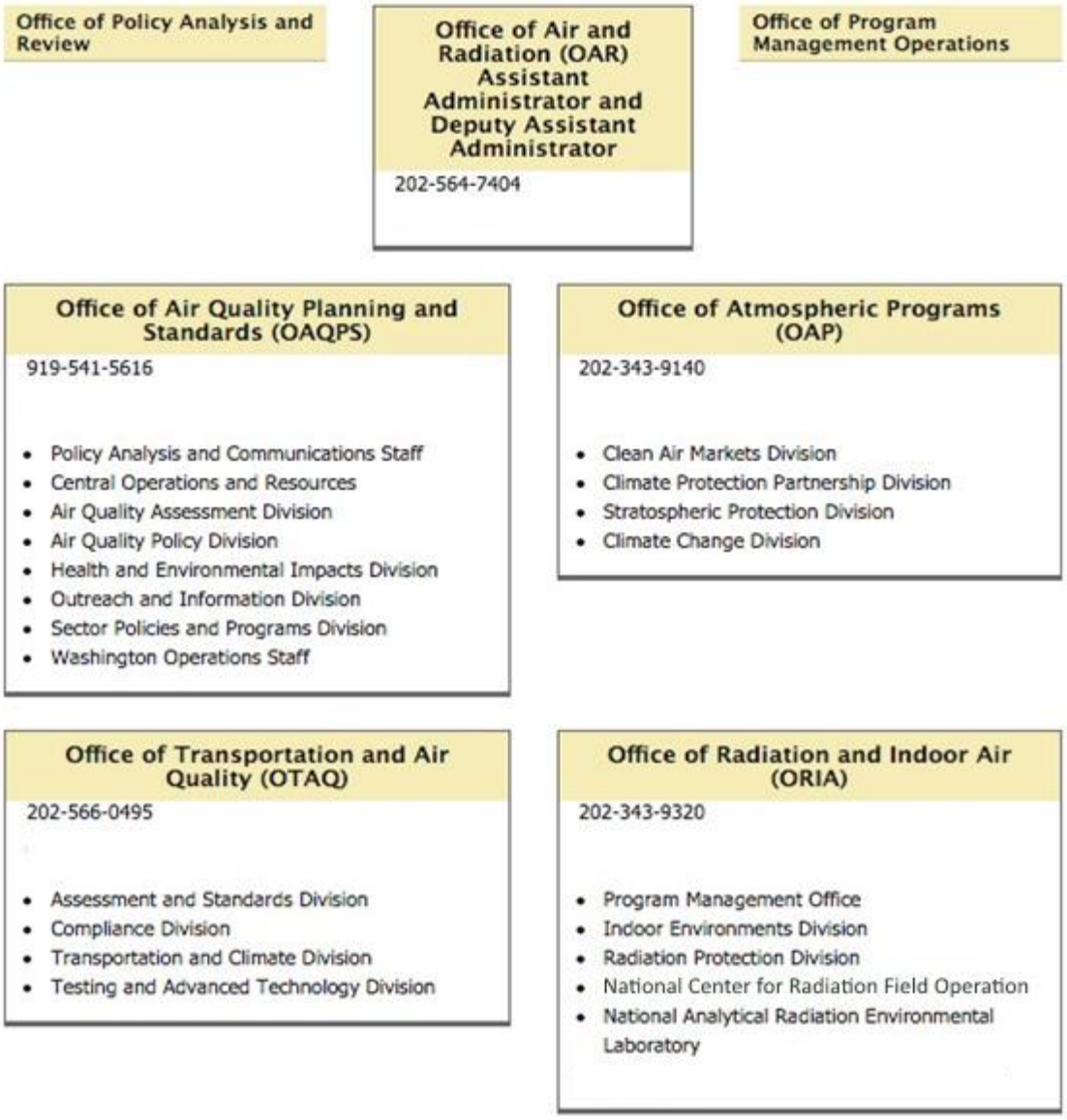
- Morongo Band of Mission Indians
- Pala Band of Mission Indians
- Pechanga Band of Luiseno Indians
- Pyramid Lake Paiute Tribe
- Robinson Rancheria of Pomo Indians
- Soboba Band of Luiseno Indians
- Susanville Indian Rancheria
- Washoe Tribe of Nevada and California
- White Mountain Apache Tribe

Region 10 (10 Tribes)
- Coeur d'Alene Tribe
- Confederated Tribes of Warm Springs
- Confederated Tribes of the Colville Reservation
- Confederated Tribes of the Coos, Lower Umpqua & Siuslaw Indians
- Kootenai Tribe of Idaho
- Makah Indian Tribe
- Nez Perce Tribe
- Quinault Indian Nation
- Spokane Tribe
- Yakama Nation

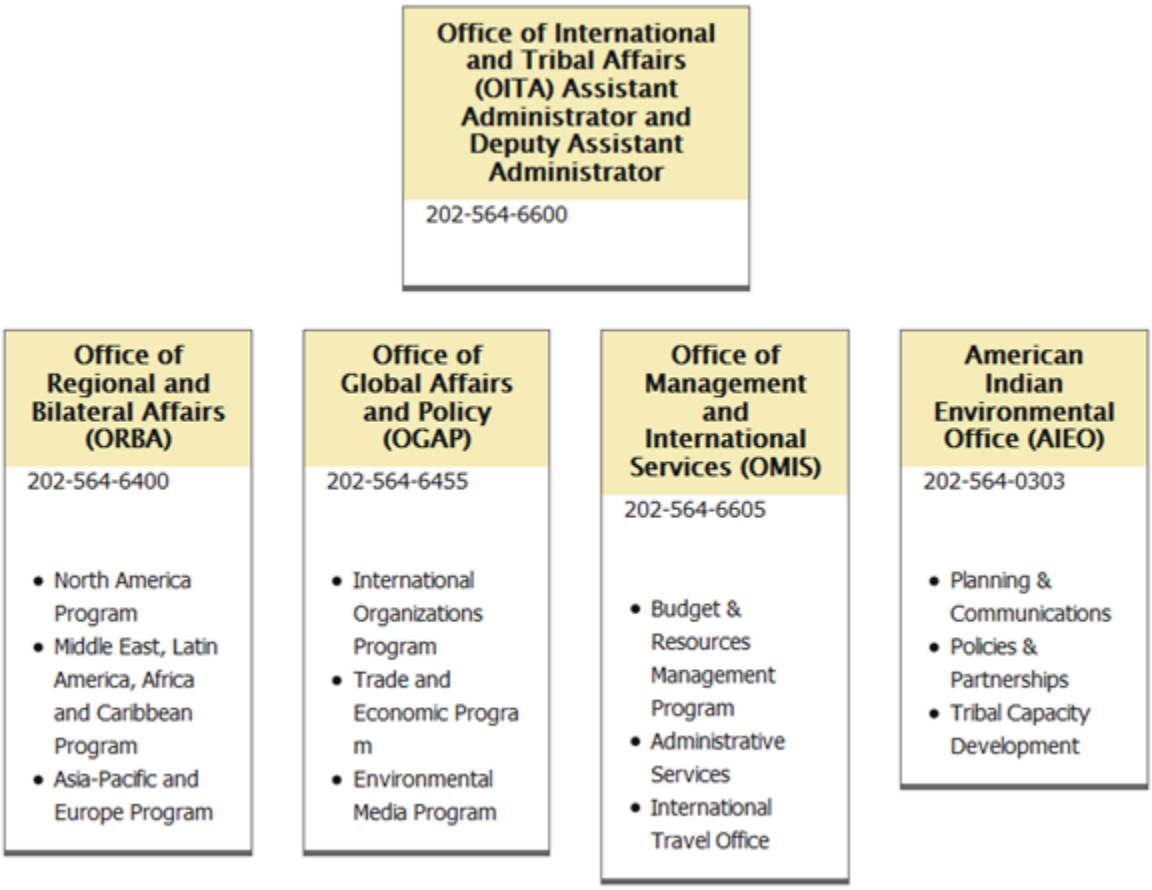
Alaska (16 Tribes and Villages)
- Aleknagik Traditional Council
- Bristol Bay Native Association
- Chickaloon Village Traditional Council
- Inupiat Community of the Arctic Slope
- Klawock Cooperative Association
- Native Village of Buckland
- Native Village of Kivalina (IRA)
- Native Village of Kwinhagak
- Native Village of Noatak
- Native Village of Old Harbor
- Native Village of Selavik
- Native Village of Selawick
- Native Village of Shungnak
- Noorvik Native Community
- Orutsararmuit Native Council
- Seldovia Village Tribe

Tribal Consortia as Associate NTAA Member
- Inter Tribal Council of Arizona

Appendix C: OAR and OITA Organizational Charts



Additional information about the EPA Office of Air and Radiation can be found at: https://www.epa.gov/aboutepa/about-office-air-and-radiation-oar.



Additional information about the EPA Office of International and Tribal Affairs can be found at: https://www.epa.gov/aboutepa/about-office-international-and-tribal-affairs-oita.

Appendices D through F: USEPA Data Tables

Summaries on Tribal Air Quality Monitoring and Tribal Management Projects

Tribes significantly contribute to air quality protection as a means of exercising Tribal sovereignty through air quality program activities. At the request of the NTAA, USEPA's Office of Air and Radiation provided a set of data summarizing Tribal air activities from 2012-2016. A broad summary of Tribal Air Programs can be found in Appendix D, followed by regional summaries in Appendix E, and the national Tribal Permit summary in Appendix F.

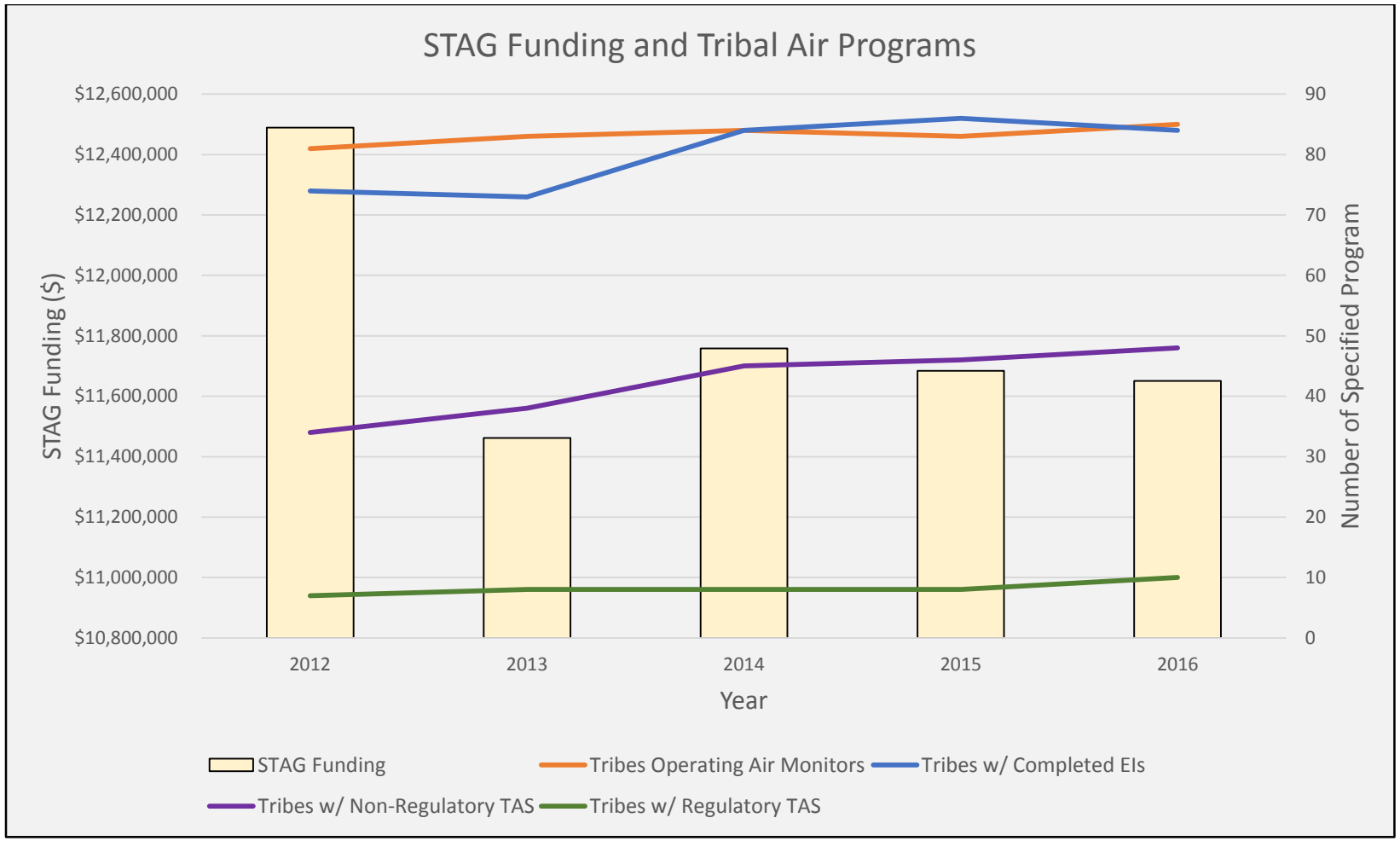
The following data is used by the USEPA to create budgets that influence CAA grant funding available to Tribes. The presentation of this data has been simplified from previous STARs, with a layout that is both easier to understand and more useful to readers. This simplified layout also serves the important purpose of highlighting recent declines of funding and stagnation of Tribal Air Programs.

Please see Appendix A for a full in-depth Tribal Air Program budget analysis, which references these tables as well. The data set was provided to the NTAA by USEPA's OAR Tribal System (OTS) database.

Appendix D: National Summary of Tribal Air Programs

National Summary of Tribal Air Programs					
	2012	**2013**	**2014**	**2015**	**2016**
STAG Funding	$12,489,000	$11,462,001	$11,758,000	$11,683,901	$11,651,001
Tribes Operating Air Monitors	81	83	84	83	85
Tribes w/ Completed EIs	74	73	84	86	84
Tribes w/ Non-Regulatory TAS	34	38	45	46	48
Tribes w/ Regulatory TAS	7	8	8	8	10
Major Sources on Reservations*	167	159	863	1626	1900
Tribal Non-Attainment Areas	201	156	156	202	167

***The values shown in this table reflect annual totals for all regions. The steep rise of Major Sources on Reservations is due to the introduction of new major source registration rules, which were applied to previously identified sources. This jump in major sources was caused by increased regulation, not by new pollutant sources.


STAG Funding and Tribal Air Programs
$12,600,000
$12,400,000
$12,200,000
$12,000,000
$11,800,000
$11,600,000
$11,400,000
$11,200,000
$11,000,000
$10,800,000
STAG Funding ($)
90
80
70
60
50
40
30
20
10
0
Number of Specified Program
2012
2013
2014
2015
2016
Year
STAG Funding
Tribes Operating Air Monitors
Tribes w/ Completed EIs
Tribes w/ Non-Regulatory TAS
Tribes w/ Regulatory TAS

National Summary of Tribal Grants

EPA Region	Grant Types			Region Total
	103*	105*	DERA**	
1	38	8	0	**46**
2	3	2	0	**5**
4	6	5	0	**11**
5	108	15	0	**123**
6	89	0	1	**90**
7	47	2	0	**49**
8	106	68	0	**174**
9	182	22	1	**205**
10	25	40	4	**69**
Grand Total:	**604**	**162**	**6**	**772**

*Number of 103 and 105 grants are cumulative over past few years, as provided by EPA

**DERA grants are from 2015 only, as provided by EPA

Seven (7) tribal awards in Regions 1, 5, 6 and 10 for a total of $267,573 in Fy2015 federal funds.

Other air grants provided to Tribes but not included in this table, include CARE, DITCA, GAP, and Local Showcase.

Appendix E: Regional Summaries of Tribal Air Programs

Summary of Tribal Air Programs - Region 1					
	2012	**2013**	**2014**	**2015**	**2016**
STAG Funding	$657,063	$613,577	$622,967	$621,504	$594,273
Tribes Operating Air Monitors	4	5	5	5	5
Tribes w/ Completed EIs	1	1	1	1	1
Tribes w/ Non-Regulatory TAS	1	2	2	2	2
Tribes w/ Regulatory TAS	2	2	2	2	2
Major Sources on Reservations	2	2	2	2	2
Tribal Non-Attainment Areas	5	5	5	5	3

Summary of Tribal Air Programs - Region 2					
	2012	**2013**	**2014**	**2015**	**2016**
STAG Funding	$440,175	$424,265	$424,983	$417,874	$403,087
Tribes Operating Air Monitors	1	1	1	1	1
Tribes w/ Completed EIs	0	1	1	1	1
Tribes w/ Non-Regulatory TAS	1	1	1	1	1
Tribes w/ Regulatory TAS	1	1	1	1	1
Major Sources on Reservations	1	1	1	1	1
Tribal Non-Attainment Areas	5	4	4	4	1

Summary of Tribal Air Programs - Region 4					
	2012	**2013**	**2014**	**2015**	**2016**
STAG Funding	$330,964	$312,481	$316,989	$313,173	$315,674
Tribes Operating Air Monitors	1	2	2	3	3
Tribes w/ Completed EIs	1	1	2	2	2
Tribes w/ Non-Regulatory TAS	1	1	1	1	1
Tribes w/ Regulatory TAS	0	0	0	0	0
Major Sources on Reservations	0	0	0	0	0
Tribal Non-Attainment Areas	1	0	0	0	0

Summary of Tribal Air Programs - Region 5					
	2012	**2013**	**2014**	**2015**	**2016**
STAG Funding	$1,263,752	$1,145,597	$1,179,144	$1,226,435	$1,228,784
Tribes Operating Air Monitors	11	11	12	12	12
Tribes w/ Completed EIs	14	14	15	16	18
Tribes w/ Non-Regulatory TAS	4	4	5	5	5
Tribes w/ Regulatory TAS	0	0	0	0	0
Major Sources on Reservations	13	15	15	15	15
Tribal Non-Attainment Areas	5	5	5	5	5

Summary of Tribal Air Programs - Region 6					
	2012	**2013**	**2014**	**2015**	**2016**
STAG Funding	$1,305,009	$1,174,439	$1,176,253	$1,181,133	$1,141,449
Tribes Operating Air Monitors	5	5	4	4	5
Tribes w/ Completed EIs	8	8	14	15	11
Tribes w/ Non-Regulatory TAS	2	2	3	3	4
Tribes w/ Regulatory TAS	0	0	0	0	0
Major Sources on Reservations	6	6	6	6	11
Tribal Non-Attainment Areas	0	0	0	0	0

Summary of Tribal Air Programs - Region 7					
	2012	**2013**	**2014**	**2015**	**2016**
STAG Funding	$465,216	$434,188	$499,756	$524,625	$534,917
Tribes Operating Air Monitors	4	4	5	4	4
Tribes w/ Completed EIs	6	6	6	6	6
Tribes w/ Non-Regulatory TAS	0	1	2	2	2
Tribes w/ Regulatory TAS	0	0	0	0	0
Major Sources on Reservations	4	4	4	4	4
Tribal Non-Attainment Areas	0	0	0	0	0

Summary of Tribal Air Programs - Region 8					
	2012	**2013**	**2014**	**2015**	**2016**
STAG Funding	$2,109,888	$2,002,337	$2,096,474	$2,070,039	$2,001,325
Tribes Operating Air Monitors	10	10	10	10	10
Tribes w/ Completed EIs	18	13	14	14	14
Tribes w/ Non-Regulatory TAS	7	7	9	9	9
Tribes w/ Regulatory TAS	1	1	1	1	1
Major Sources on Reservations*	86	89/706**	702	1451	1719
Tribal Non-Attainment Areas	3	3	3	3	3

*The steep rise of Major Sources on Reservations is due to the introduction of new major source registration rules, which were applied to previously identified sources. This includes newly identified oil and gas sources required to be registered for PSD permits.

** In 2013, Region 8 reported this data using both old and new rules.

Summary of Tribal Air Programs - Region 9					
	2012	**2013**	**2014**	**2015**	**2016**
STAG Funding	$3,259,737	$2,933,750	$2,974,502	$2,885,487	$2,967,439
Tribes Operating Air Monitors	29	29	29	29	30
Tribes w/ Completed EIs	17	19	21	21	24
Tribes w/ Non-Regulatory TAS	7	7	9	10	11
Tribes w/ Regulatory TAS	2	2	2	2	4
Major Sources on Reservations	21	21	21	21	22
Tribal Non-Attainment Areas	170	137	137	183	154

Summary of Tribal Air Programs - Region 10					
	2012	**2013**	**2014**	**2015**	**2016**
STAG Funding	$2,657,197	$2,421,367	$2,466,932	$2,443,631	$2,464,053
Tribes Operating Air Monitors	16	16	16	15	15
Tribes w/ Completed EIs	9	10	10	10	7
Tribes w/ Non-Regulatory TAS	11	13	13	13	13
Tribes w/ Regulatory TAS	1	2	2	2	2
Major Sources on Reservations*	34	110	112	126	126
Tribal Non-Attainment Areas	12	2	2	2	1

***The steep rise of Major Sources on Reservations is due to the introduction of new major source registration rules, which were applied to previously identified sources.

Appendix F: National Tribal Permit Summary Report

National Tribal Permit Summary Report by Permit Type/Category
As of 04/12/2016

Permit Type/Category	Region*						Total
	2	5	6	8	9	10	
Permit Grand Total	**1**	**11**	**5**	**145**	**21**	**126**	**309**
NSR: Major - PSD		5		15			20
NSR: Minor - PSD						2	2
NSR: Synthetic Minor - PSD				32		7	39
NSR PSD Total		5		47		9	61
NSR: Major - NA							0
NSR: Minor - NA		1		10			11
NSR: Synthetic Minor - NA							0
NSR Nonattainment Total		1		10			11
NSR: Minor - HAP							0
NSR: Synthetic Minor - HAP							0
NSR HAP Total							0
FARR: Minor							0
FARR: Synthetic Minor						106	106
FARR Total						106	106
Title V: Major	1	5	5	88	21	11	131
Title V: Synthetic Minor							0
Title V Total**	1	5	5	88	21	11	131

*Regions where Tribes do not report this data to USEPA are not included in this table.

**The table above does not include 18 non-Title V permits issued by the Gila River Indian Community.