



**Strategic Plan
2003 – 2008**

of the

**Western Regional
Air Partnership**

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Executive Summary

The purpose of this strategic plan is to guide the development of the WRAP technical and policy work over the next five years. In particular, it will guide the work needed to develop implementation plans under Section 308 of the regional haze rule and to revise plans submitted under Section 309. The strategic plan also describes how the WRAP's regional haze efforts can serve other air quality interests of WRAP members, and it provides the direction and transparency needed to foster stakeholder participation and consensus-based decision making – key features of the WRAP process. Finally, the strategic plan also provides a resource to individuals who are new to the WRAP and a reference to those already involved, as well as an overall road map to WRAP committees and forums as they plan their annual activities and work products.

This strategic plan is developed at a pivotal time for the WRAP. Most major technical and policy products needed for Section 309 state implementation plans (SIPs) and tribal implementation plans (TIPs) have been completed, products needed for Section 308 SIPs and TIPs must now be more directly addressed, and these products must complement the longer term (i.e., 2008) needs for Section 309 SIP and TIP revisions. As the WRAP turns its attention to longer-term requirements, its planning process is complicated by a number of factors. First, it must expand its scope from 16 Class I areas to 116 Class I areas, representing a broader array of emission impacts and other circumstances. There are also five tribal Class I areas (and potentially more in the future) that should be addressed. Second, the May 2002 decision of the U.S. Court of Appeals in the case of *American Corn Growers Association Versus the U.S. Environmental Protection Agency* creates uncertainty regarding SIP submittal due dates and best available retrofit technology (BART) required by the Clean Air Act (CAA) and the federal regional haze rule (RHR).

There are also several aspects to Section 308 SIPs and TIPs and Section 309 SIP and TIP revisions that were not required by the first Section 309 SIP submittals and are therefore new to the WRAP. These include an apportionment of emission reduction obligations among states and tribes, which also implies a more explicit apportionment of the causes of haze (i.e., source apportionment) than has been required so far. Whereas Section 309 is prescriptive in the types of control strategies that must be implemented, Section 308 has a much less specific requirement that BART be implemented and that “reasonable progress” be achieved. This provides a lot of flexibility, but opens the door to a wide range of potential control strategies – virtually anything that limits emissions of particulate matter or its precursors. Identifying, screening, and ranking such control strategies will be a challenge, as will determining whether the ones chosen constitute reasonable progress according to the statutory factors of cost, time necessary for compliance, energy and non-air quality impacts, and the remaining useful life of affected sources. Finally, the state of Alaska has joined the WRAP, which adds some complexity through additional data and analytical requirements and the consideration of more than 200 Alaskan native villages.

A key feature of the strategic plan is its use of a two-phased approach, as summarized in the table below. Phase I provides an opportunity to develop and test procedures for addressing the

challenges noted above before applying them for SIP and TIP purposes in Phase II. The two-phased approach also provides a hedge against potentially earlier SIP submittal dates. (The strategic plan assumes SIP and TIP submittal dates of December 2007, but earlier dates could be required as a result of *American Corn Growers Versus EPA*.) Phase I will focus predominantly on regional analyses and regional control strategies, building off the work done for 309 SIPs. Phase II will look more closely at subregions within the WRAP. Time and resources will be provided in each phase to allow two or more iterations of control strategy analysis. This is important for isolating a suitable set of emission management options and determining when reasonable progress has been demonstrated. In 2005, at the juncture of the phases, a comprehensive review of this strategic plan will be conducted.

	Phase I 2003-05	Phase II 2005-07
Purpose:	Dry run for Phase II. Hedge against earlier dates.	Refine and apply Phase I approaches for SIP/TIP purposes.
Scale:	Regional.	Regional and subregional.
Apportionment:	96/02 source contributions. Areas each plan to address.	2002 source contributions. Reduction obligations.
Strategies:	Identify options, screen.	Cost/benefit, select, design.
Communication:	Public education.	Public acceptance.
Major state/tribal submittals:	2002 emission inventory.	Modeling run specifications.

SIP submittal dates are critical to WRAP planning efforts. As such, the WRAP Board will consider a consensus position on regional haze SIP due dates and forward that position, if available, to the EPA as it seeks a remedy to issues raised by the U.S. Court of Appeals.

Since the WRAP was formed in 1997, it has made tremendous progress towards developing effective, consensus-based air quality management strategies, and this experience provides a sound basis for developing this strategic plan. To develop this plan, the WRAP Planning Team convened a work group comprised of representatives from seven states, three tribes, EPA, and WRAP staff from NTEC, WESTAR, and WGA. (See Appendix B for a list of work group members.) It was subsequently reviewed by WRAP committees and the WRAP Board. The WRAP Board represents all 13 states in the WRAP region, but only a cross section of the more than 400 tribes. Broad circulation of this plan among the tribes and their feedback are therefore encouraged. Contributions to this plan, and to WRAP work in general, have been made by tribes not currently on the Board.

I. The WRAP Process

What Is the WRAP?

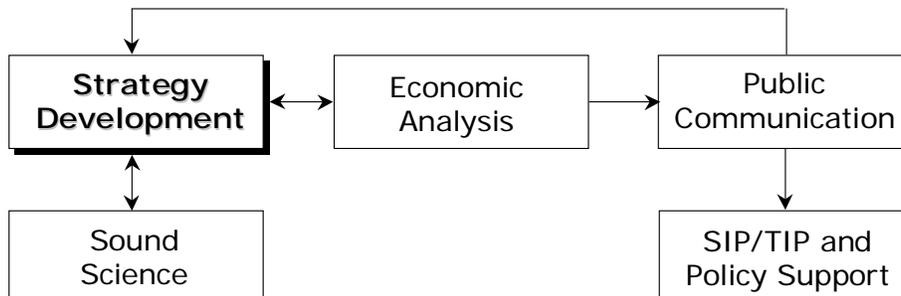
The Western Regional Air Partnership (WRAP) is a collaboration of tribal governments, state governments, and federal agencies. Its primary focus is to implement the recommendations of the Grand Canyon Visibility Transport Commission (GCVTC) and to develop the technical and policy tools needed by western states and tribes to comply with the regional haze rule (RHR) promulgated by the U.S. Environmental Protection Agency (EPA). Other common western regional air quality issues raised by the WRAP membership may also be addressed. The WRAP's process for conducting its work and supporting its members is described in the WRAP Charter and Bylaws. These, and all other WRAP documents, can be found on the WRAP Web site at <http://www.wrapair.org>. The WRAP is staffed by the Western Governors' Association (WGA) and the National Tribal Environmental Council (NTEC).

Summary of the WRAP Process

The figure below is a summary of the WRAP process. It is based on the Enlibra principles of environmental management adopted by the western governors in WGA Policy Resolution 02-07. This process is applicable to all WRAP activities, including those relating to the RHR.

Much of the WRAP's effort is focused on regional technical analysis that serves as the basis for developing strategies to meet the RHR requirement to demonstrate reasonable progress towards natural visibility conditions in national parks and wilderness areas. This includes the compilation of emission inventories, air quality modeling, and ambient monitoring and data analysis. The WRAP is committed to using the most recent and scientifically-acceptable data and methods. The WRAP does not sponsor basic research, but WRAP committees and forums interact with the research community to refine and incorporate the best available tools and information pertaining to western haze.

Emission management strategies (or potential strategies) identified through the WRAP process are analyzed for their economic impact, both positive and negative, on the region. Public communication is important to facilitate implementation of the strategies and to provide early input to the strategy development process on the most suitable approaches. All this leads to the support needed by states and tribes to comply with the RHR and to address other air quality issues as needed.



The WRAP Board

Members of the WRAP Board include Governors of 13 states and 13 tribes, the Secretary of Agriculture, the Secretary of Interior, and the Administrator of the U.S. EPA, or their designees. The Board is the governing body of the WRAP. It reviews and endorses major WRAP products and recommended strategies, facilitates consensus among participants in the WRAP (including non-member stakeholders), appoints members to oversight committees, and approves the annual WRAP Work Plan. A map of the WRAP region, including a list of WRAP members and the location of federal lands covered by the RHR, is provided on the following page. A map is also provided showing the tribal lands and tribal Class I areas in the WRAP region.

Committees and Forums

Most WRAP work is conducted through a network of committees and forums. The members of two oversight committees are appointed by the Board to represent the WRAP membership and stakeholders. The oversight committees convene and oversee forums to carry out specific tasks or address specific issues. The oversight committees appoint forum co-chairs, who in turn recruit a balanced set of individuals to carry out the forum's charge. Finally, work groups can be formed by committees and forums on an *ad hoc* basis to perform tasks that are relatively specialized and/or short-lived. The work group which drafted this strategic

plan is one example. An organizational chart showing the current committees and forums is presented on page 28.

Consensus and Stakeholders

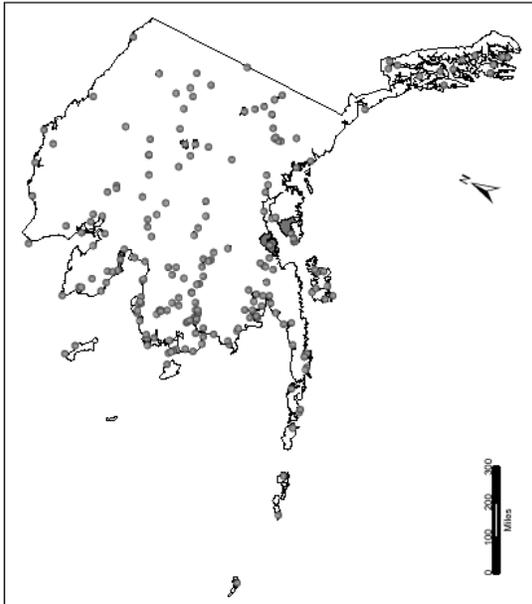
The WRAP operates through consensus, not a majority basis. Stakeholders, in addition to states, tribes, FLM, and EPA representatives, are included in the consensus process at the committee, forum and work group levels. Stakeholders include members of affected business and industry, local governments, academia, environmental organizations, and the general public.

Part 4 of the WRAP Charter discusses the consensus process. A central tenet involves resolving disputes at the lowest possible but best-informed level – i.e., among individuals or within forums and committees. Over the last six years, the WRAP has established a consistent track record of reaching consensus on major policies (e.g., the SO₂ Annex and EPA's gasoline sulfur rule) and on other issues needed to move ahead with the regional planning process.

If necessary, parties in the WRAP may participate in a formal consensus building processes. The WRAP's primary role is to facilitate discussion among the appropriate parties by providing (or improving) a consistent, transparent, and high-quality body of information.

Tribal Lands and Tribal Class I Areas in the WRAP Region

Native American Tribes & Class 1 Areas of the WRAP Region



Legend

- Reservation / Alaskan Native Village
- Tribal Class 1 Area (Labeled by Name)
- Represents a tribe's land base when the actual polygon(s) is difficult to see at this scale.

Note: Figure only includes federally-recognized Indian tribes and Alaskan Native Villages.

Created by the Tribal Data Development Working Group of WRAP and the Institute for Tribal Environmental Professionals, June 2003. Data Sources: U.S. Bureau of Indian Affairs, U.S. Environmental Protection Agency, Inter-Tribal Environmental Council of Oklahoma, and ESRI.

The data on this figure were derived from databases of federal agencies, the TDDWG and ITEP cannot confirm their accuracy.

II. Regional Haze SIP and TIP Requirements

This chapter summarizes the 1999 regional haze rule and the scope and contents of the state implementation plans (SIPs) that must be submitted to comply with the rule.

Historical Summary

Further background on the history of regional haze control in the U.S. (pre-1999) is provided in Appendix A. In short, a national visibility program was first established by the 1977 Clean Air Act (CAA) Amendments. The Amendments established a prevention of significant deterioration (PSD) program to limit impacts (including visibility impacts) from large, new stationary sources, especially on Class I areas. They also established a program in Section 169 of the CAA to address visibility more directly. This section pertains only to Class I areas but provides authorization to address existing sources, in addition to new ones. Section 169 establishes a goal to achieve natural visibility conditions and places a responsibility on states to make reasonable

progress towards this goal through SIPs that include provisions for best available retrofit technology (BART) and long-term strategies.

The EPA sought to implement Section 169 in two rulemakings. The first, promulgated in 1980 and commonly known as the plume blight rule, addresses impairment from a single source or small group of sources, typically through visual observations. The second rule was intended to address regional haze from many sources over hundreds of miles but was postponed until better science and tools were available.

The 1999 Regional Haze Rule

Buttressed by better technical tools and scientific understanding, the 1990 CAA amendments, the 1993 National Academy of Sciences report, the 1996 Grand Canyon Visibility Transport Commission (GCVTC) report, and the 1997 PM_{2.5} air quality standards, the EPA implemented the second phase of its visibility regulations with the promulgation of the 1999 regional haze rule.

The rule sets for the first time a definitive, yet long-term period in which to achieve the national goal and criteria for establishing and measuring reasonable progress toward that goal. It is applicable to all 50 states and the Virgin Islands. Most states must submit plans under Section 308 of the RHR, although an alternative is available to some western states and tribes under Section 309.

The regional haze rule reflects the statutory framework for addressing visibility – that is, to make reasonable progress toward the national goal (in part) through federally-approved and enforceable SIPs and TIPs

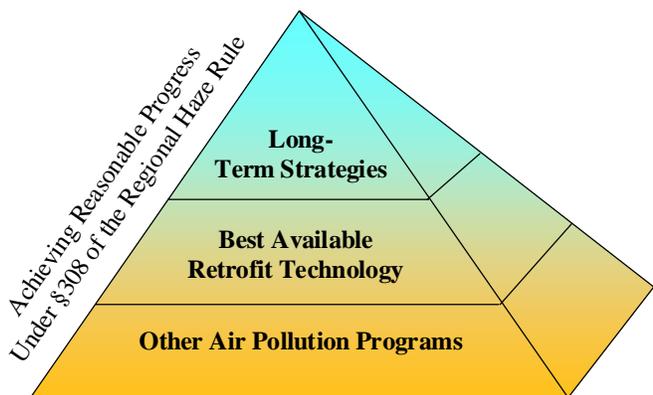
<i>Clean Air Act Provisions Relating Directly to Visibility in Class I Areas</i>	
Prevention of Significant Deterioration	Reasonable Progress
Long-Term Strategies	Best Available Retrofit Technology

containing long-term strategies and BART provisions. The rule also requires interstate and state-FLM consultation; documentation of technical analyses, emission inventories, and ambient monitoring and analysis efforts; periodic progress reports and SIP revisions; and encourages interstate analysis, planning, and cooperation.

Federal rules generally provide more flexibility in crafting haze SIPs and TIPs than other types of SIPs and TIPs. Examples of this flexibility include the option of implementing an emissions trading program or alternative measure in lieu of BART, means of demonstrating reasonable progress, and the option available to states and tribes in the Grand Canyon Visibility Transport Region (GCVTR) to submit SIPs and TIPs implementing the recommendations of the GCVTC, provided they do so by the end of 2003.

Section 308 SIP and TIP Requirements

Table II-1 summarizes the major requirements of Section 308 of the RHR. The WRAP is assuming that these SIPs will be due in December 2007, based on EPA’s stated intention to modify the current statutory deadline in response to *American Corn Growers Versus EPA*. In the absence of such a change to the statute, it is expected that all WRAP states except California would have a submittal date of December



2005 (one year after PM_{2.5} designations).

Section 309 SIP and TIP Revision Requirements

Table II-2 summarizes the major post-2003 requirements of Section 309 of the RHR.¹ This section is available as a compliance option to the nine states and several tribes in the GCVTR. SIPs meeting the requirements of this section will satisfy the requirements of Section 308 for BART for sulfur dioxide and reasonable progress at the 16 Class I areas on the Colorado Plateau through 2018. Revisions to Section 309 plans are due by December 31, 2008, and these must address reasonable progress at areas outside the Colorado Plateau according to the framework in Section 308.

Tribal Authority and Tribal Implementation Plans

Table II-3 summarizes the issues and options available to tribes wishing to address regional haze. Federally-recognized Indian tribes have been integrally involved in regional haze planning in the West beginning with the GCVTC. Four tribes were members of the Commission and numerous others participated, contributing significantly to its final recommendations in 1996. Tribes have stayed involved throughout the promulgation and implementation of the RHR and the creation and development of the WRAP. Indian tribes are sovereign governments, rather than private stakeholders, and are therefore represented on the WRAP Board.

Under the CAA, tribes may receive delegation to implement portions of the Act.

¹ The pre-2003 requirements of Section 309 of the rule have been addressed in earlier planning documents and are not addressed in this strategic plan.

This is done through a TIP, which is analogous to a SIP. However, tribes are not subject to deadlines for TIPs or sanctions for failure to adopt them. In addition, tribes may choose to implement "reasonably severable" elements of CAA programs. In the absence of a TIP, the EPA will work with the tribe and implement a federal implementation plan (FIP) as necessary and appropriate to protect air quality.

The RHR recognizes this tribal/federal framework. For tribes in the GCVTR, the rule allows TIPs to be adopted under Section 308 or 309, without regard to the section utilized by adjacent states. Moreover, the EPA has indicated that the 2003 deadline applicable to states for Section 309 SIPs does not apply to tribes; tribes may submit a section 309 SIP after 2003.

Within this general framework, much detail remains to be addressed. For example, one unexplored question is which portions, if any, of the regional haze rule could be "reasonably severed" and implemented by a tribe which did not want to implement the entire rule. The relative youth of tribal air programs makes this question more difficult to address. The tribal authority rule (TAR), which provides delegation of CAA authority to tribes, was promulgated in 1998, only one year before the RHR. To date, no tribe in the nation has received final approval of a TIP, though several are pursuing it.

American Corn Growers Association Versus EPA

In May 2002 the U.S. Court of Appeals vacated the BART provisions of the RHR because they illegally infringed upon states' authority under the CAA. This infringement occurs where the rule bifurcates the states' determination of BART by requiring them to consider the degree of improvement on a

group or "area wide" basis, while other factors affecting the choice of BART (e.g., costs and non-air quality impacts) are considered on a plant-by-plant basis. It also occurs where a BART-eligible source may be subjected to BART even absent empirical evidence of that source's contribution.

Clearly, the WRAP can not fully address the BART provisions of the rule until it is revised by the EPA, and a proposed revision is not expected until the spring of 2004. However, the Court's decision does not affect the need to analyze the contributions of BART-eligible sources, but only the way in which these contributions are analyzed.

The Court was also "troubled" by the EPA's approach to accepting control SIPs two years after submission of committal SIPs, "which appears to contravene express statutory language." Such language could cause regional haze SIPs to be submitted at different times depending on PM_{2.5} attainment designations, thereby complicating regional planning efforts. Perhaps more significantly, the vast majority of western haze SIPs would be due in 2005. The EPA is recommending a legislative amendment to make all haze SIPs due in December 2007, but the outcome is not certain. If the dates are changed, regional haze SIPs could be due as late as originally permitted (2008) in order to build off of measures in the ozone and PM_{2.5} SIPs. Alternatively, they could be due when PM_{2.5} nonattainment SIPs would be due (2007), or if no changes are made to the legislation, then in 2005.

The EPA's response to the issues above are obviously important to the long term plans of the WRAP and to the effectiveness of SIPs and TIPs in the region.

Table II-1. Section 308 SIP and TIP Requirements

Visibility Goals

- ◆ **Prevent degradation of the 20% cleanest days**
- ◆ **Determine a uniform rate of progress for each Class I area needed to return the 20% dirtiest days to natural conditions by 2064**
- ◆ **Establish a reasonable progress goal for each Class I area for 2018**
 - Cost of compliance
 - Time necessary for compliance
 - Energy and non-air quality environmental impacts of compliance
 - Remaining useful life of affected sources

Apportionment

- ◆ **Determine which Class I areas the state's and tribe's emissions may affect**
- ◆ **Determine the state's or tribe's share of emission reduction obligations**

Control Measures

- ◆ **Must achieve the state's or tribe's share of emission reduction obligations**
- ◆ **Must consider construction and fire activities**
- ◆ **Should consider all other sources**
- ◆ **Must include BART or superior alternative**
 - Cost of compliance
 - Energy and non-air quality environmental impacts of compliance
 - Existing pollution control technologies in use at affected sources
 - Remaining useful life of affected sources
 - Degree of improvement

Consultation, Documentation, and Future Commitments

- ◆ **Consultation with other states, tribes, and FLMs**
- ◆ **Visibility monitoring strategy**
- ◆ **Technical basis of SIP/TIP (analysis of emission, monitoring, modeling data)**
- ◆ **5-year progress reports and 10-year SIP and TIP revisions**

Table II-2. Section 309 SIP and TIP Revision Requirements

Comply with all 308 requirements (except SO₂ BART) for areas outside the Colorado Plateau

Tracking Activities

- ◆ Clean air corridor emissions
- ◆ Mobile source emissions
- ◆ Fire emissions
- ◆ SO₂ emissions (for compliance with milestones)
- ◆ Progress towards meeting the renewable energy and energy efficiency goals of the Grand Canyon Visibility Transport Commission

Table II-3. Tribal Implementation Plan Issues

Timing

- ◆ Tribal 308/309 decisions independent of states, not subject to deadlines
- ◆ TIPs optional, FIPs as necessary and appropriate
- ◆ FIP decision tribe-by-tribe or regional?
- ◆ Consistency between EPA regions

Severability

- ◆ Tribes may receive delegation of authority to implement all or parts of a Clean Air Act program including parts of Sections 308 and 309
- ◆ Since Section 308 does not contain prescriptive elements (other than BART), tribes can presumably develop unique plan under 308; severability not at issue

Resources

- ◆ No TIPs have been fully approved since the TAR promulgated in 1998
- ◆ More extensive public process may be necessary, as a practical matter, for tribes than for states
- ◆ Demand for EPA funding beginning to outstrip supply, resulting in competition for funds and prioritization among issues. Priority of regional haze plans not clear

III. Challenges Meeting SIP and TIP Requirements

Developing effective SIPs and TIPs meeting the requirements summarized in the previous chapter will be a challenging process. Effective regional coordination and cooperation will be needed to address the multiple jurisdictions, economic sectors, technical complexity, and scientific uncertainty that exists in regional haze planning and the WRAP organization. This chapter describes the most significant challenges anticipated at this time and sets the stage for a strategic plan of action in the following chapters.

The challenges emphasized in this chapter pose new and unique issues to WRAP members. WRAP members face challenges simply developing tools and datasets, which are often large and complex given the size of the WRAP region. But since many of these tools and datasets are relatively well defined and have been previously applied, such challenges pose primarily workload and management issues as opposed to “directional issues” and are therefore not emphasized in this chapter.

SIP Submittal Dates

It is not certain whether most regional haze SIPs will be due in 2005 or 2007, and the matter may not be resolved for another year. This suggests the need for a flexible, possibly two-phase or two-track approach to developing SIPs and TIPs.

Apportionment

Section 308 of the RHR requires each state to obtain its share of emission reduction obligations. This “reduction apportionment” should be generally proportional to the sources of the problem, both geographically

and by source type. The challenges here are two fold. First, there are several “source apportionment” methods, some of which are experimental. Results from different methods will have to be reconciled and synthesized using expert judgement. This poses a new and resource-intensive type of task to the WRAP, and one which will require a high level of coordination among its technical forums and with other nations and regional planning organizations.

Second, the apportionment process, whether reduction apportionment or source apportionment, may lead to disagreements among WRAP members and/or stakeholders. Disagreements in these cases may benefit from a geographically-enhanced modeling system, but the disagreements may not be resolved in all cases by such tools. Moreover, equitable apportionment of emission reduction obligations must consider not only a jurisdiction’s contribution to the problem, but the cost and effectiveness of emission control measures available to that jurisdiction. Thus, the apportionment of emission reduction obligations must consider source apportionment results and available emission control measures in a way that promotes agreement as much as possible. This calls for a high level of coordination between the WRAP’s oversight committees and among the policy forums. In particular, the Initiatives Oversight Committee (IOC) must inform the Technical Oversight Committee (TOC) as to how much information or detail regarding source contributions will be sufficient for the purpose of apportioning emission reduction obligations, lest the TOC over-invest in its effort.

Control Strategies

Section 309 of the regional haze rule requires implementation of specific strategies recommended by the GCVTC. By contrast, Section 308 SIPs and TIPs and Section 309 SIP and TIP revisions (addressing Class I areas outside the Colorado Plateau) have much broader requirements, namely that they implement BART (or a superior alternative) and achieve reasonable progress. This lack of prescription provides a lot of flexibility, but also opens the door to a wide range of potential control strategies – virtually anything that limits emissions of particulate matter or its precursors (VOCs, NO_x, SO_x, and ammonia).

Several approaches could be taken to identifying, screening, and evaluating potential control strategies, ranging from ones that focus on the most regionally-prevalent species (such as sulfates and organic carbon) to ones based on the cheapest control measures regardless of the relative contribution to visibility impairment of the species being controlled. Another approach could entail a “build-out” of Section 309 strategies to other states, tribes, and pollutants. This “navigational challenge” to finding an appropriate and defensible suite of emission control strategies is significant and should be a high priority for the WRAP committees and forums over the next year.

Reasonable Progress

The RHR rule indicates that, as a default, reasonable progress will be equal to the uniform rate of progress needed to achieve natural visibility conditions in 2064 – that is, a “straight line” from current baseline conditions to natural conditions. The goals that must be established in the SIPs and TIPs

would presumably lie on this line.

However, the goals could be more or less stringent depending on how reasonableness is judged.² At a minimum, this judgement must include consideration of factors specified in the CAA: cost, time necessary for compliance, energy and non-air quality impacts, and the remaining useful life of affected sources. Establishing reasonable progress goals and strategies to meet them with explicit consideration given to these factors will be a major challenge, and one that is new to many WRAP members.

BART Provisions

It is not yet clear how the EPA will respond to the issues raised in *American Corn Growers Versus EPA*. However, the EPA has indicated an intent to propose a revised rule for BART in the spring of 2004.

Hence, some form of BART assessment will likely be required during the period of this strategic plan, if for no other reason than to develop an alternative to BART.

Consequently, WRAP committees and forums will need to move ahead to develop the informational and technical basis for evaluating BART. Moreover, the WRAP will engage the EPA on the issue of responding to the Court’s decision to ensure that the Agency’s response provides an adequate and viable approach to BART.

Fire

Due to many decades of active fire suppression, prescribed fires on wildlands are expected to increase dramatically to restore ecosystem balance and prevent catastrophic wildfires. In some areas –

² If a less stringent goal is established, the state or tribe must provide justification, estimate the time at which natural visibility conditions would be achieved, and notify the public with such information.

depending on size, frequency, technique, and time of year of the prescribed fires – this may have the potential to worsen the best or worst 20% visibility days on an episodic basis and may also change the relative contribution of sources to impairment on the best and worst days. In addition to mitigating smoke impacts as much as possible, the WRAP may have to consider a communication strategy that explains why this might happen, what it means for use of non-burning alternatives, and how it may be compatible with reasonable progress under the CAA. The WRAP fire categorization policy and recognition of conflicting public policy goals would be important to such a communication strategy.

8-Hour Ozone and PM_{2.5} Planning

Measures implemented to attain and maintain the 8-hour ozone and PM_{2.5} standards in some states will also reduce regional haze. It is important to include such measures in the WRAP's air quality modeling, but these measures might not be known or implemented until shortly before regional haze SIPs are due. They may therefore have to be approximated in the WRAP's modeling. An additional challenge lies in coordinating these measures in such a way that maximizes visibility benefits.

Multipollutant Legislation

Consistent with the position of the WRAP and the Western Governors' Association, any new federal legislation to address multiple pollutants from electric utilities must preserve the SO₂ emissions reductions agreed to in the WRAP Annex. Multi-pollutant legislation may supplant SO₂ and NO_x BART requirements for electric utility sources. The WRAP will track these issues and respond where appropriate.

Data Submittal and Integration

The success of WRAP modeling and assessment efforts is highly dependent on timely submittal of data from states and tribes, especially emissions data, but also ambient monitoring, demographic, and other types of information, including specifications for scenarios to be modeled. This critical dependency needs to be understood by all parties and must be accompanied by careful and realistic planning and timelines. Also, the WRAP will do what is possible to facilitate state and tribal compilation and submission of the data. An example is the current project to assess emissions inventory needs and to subsequently design an emissions inventory data system.

IV. WRAP Process for Developing Regional Haze SIPs and TIPS

Overview

The following strategy for developing regional haze SIPs and TIPS is based on meeting the requirements summarized in Chapter II while heeding or addressing the challenges identified in Chapter III. The strategy assumes a SIP submittal date of December 2007, although there is uncertainty about this date. Most of the work is based on a two-phased approach, both as a means for analyzing and selecting strategies and as a hedge against an earlier submittal date. The two-phased approach provides an opportunity to test new procedures in Phase I before applying them for SIP and TIP purposes in Phase II. Phase I will focus predominantly on the effect of existing controls and possibly some regional strategies or sensitivity analyses. Phase II will analyze proposed and final control strategies and also apply finer-scale analyses to subregions of the WRAP. Time and resources would be provided in each phase to allow two or more iterations of control strategy analysis. This is important for isolating a suitable set of emission management options and determining when reasonable progress has been demonstrated.

Two-Phased Approach

Each phase is similarly designed, thereby setting up Phase I as a dry run for Phase II. Each phase requires a major, technical, and timely input from states and tribes, completion of a source apportionment process, and a policy decision based on that apportionment. In Phase I, a major policy decision will be determining which Class I areas each SIP and TIP will address, while in Phase II decisions must be made regarding control strategies and the emission reduction

obligations for each state and tribe. Most work conducted directly by the WRAP is scheduled to be completed by early 2007 to provide ample time for states and tribes to tailor WRAP products and to work through their process.

Phase I will include a technical analysis for a base year(s) and for 2018, incorporating improvements to the modeling system, updates and improvements to the emission inventories, and an apportionment tool to better identify geographic areas and source types contributing to regional haze. Phase I will also include some preliminary results from the receptor modeling being done in the “causes of haze” project. The result of Phase I will be an initial apportionment of geographic and source type contributions to each Class I area, which will provide a basis for identifying which Class I areas each SIP and TIP will address and the general types of strategies needed.

Phase II will include a technical analysis incorporating further improvements to the modeling system, emission inventory, and receptor modeling. Emission control strategies adopted since the initial technical assessment (e.g., for ozone, PM_{2.5}, and hazardous air pollutants) will be included. The source apportionment process will be similar to that used in Phase I, modified where appropriate according to lessons learned.

Development of emission control strategies is greatly enhanced by the two-phased approach. Phase I will explore and screen strategies and may include demonstration projects; Phase II will refine them and more accurately determine their costs, benefits, and distributional impacts. Phase I will

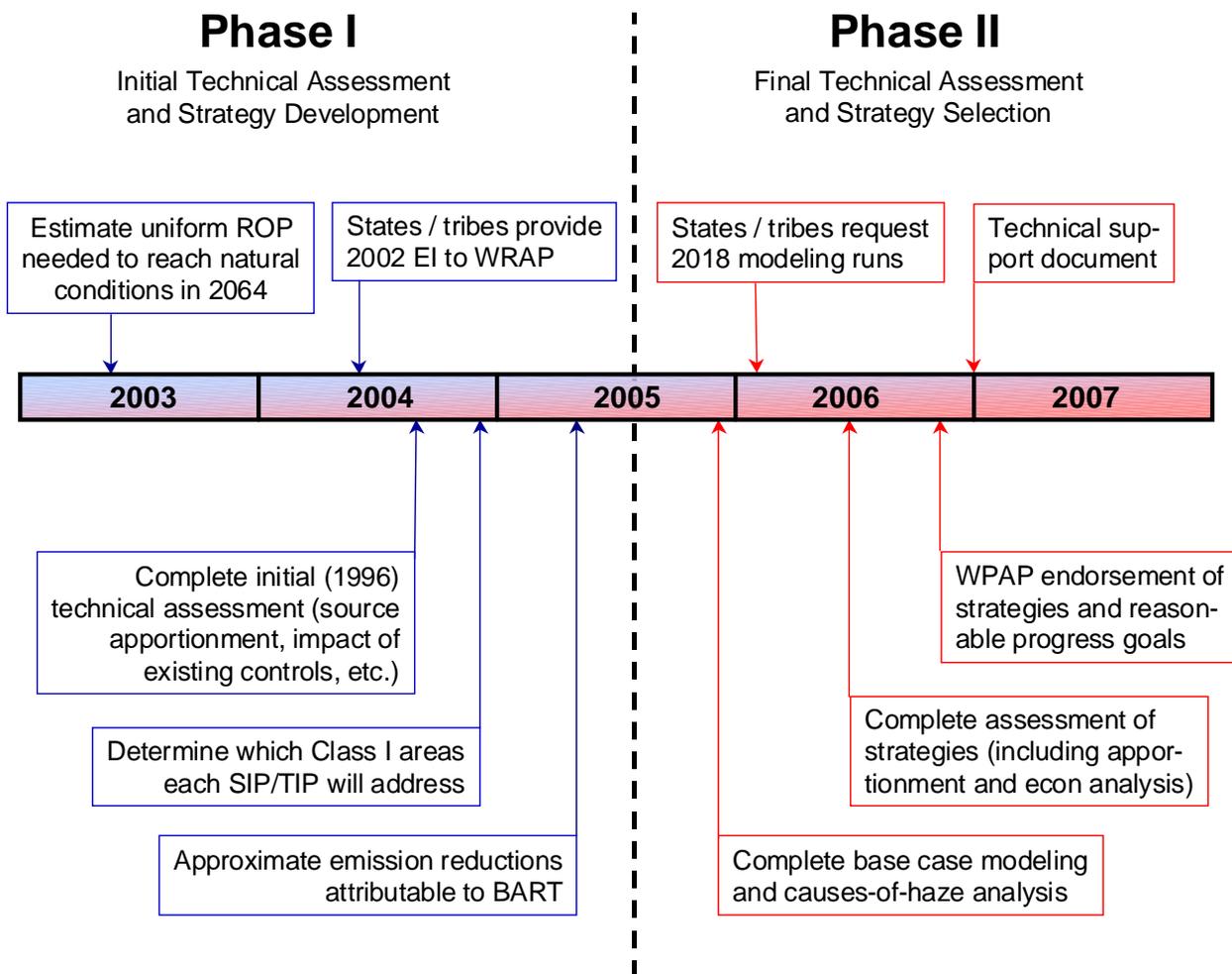
consider broad regional strategies; Phase II will also include strategies possibly needed within subregions of the WRAP. Both phases, but in particular Phase II, will include two or more iterations of control strategy analysis. This is important for isolating a suitable set of emission management options and for determining when reasonable progress has been demonstrated.

Finally, the Communications Committee will use Phase I to educate the public about haze and Phase II to foster the construction and acceptance of SIPs and TIPs. A critical activity worth highlighting in both phases is the need for states and tribes to provide timely input to the WRAP technical and policy work.

A simple timeline showing this phased approach is provided below. Because it is comprised of two similarly-structured phases, the year 2005 provides an excellent opportunity to evaluate the process and revisit this strategic plan as necessary, assuming that SIPs are not due that year.

A more detailed timeline is provided on the following pages, emphasizing major work products and their relationships to each other. This timeline is intended primarily for WRAP committees and forums as they plan their yearly activities and budgets.

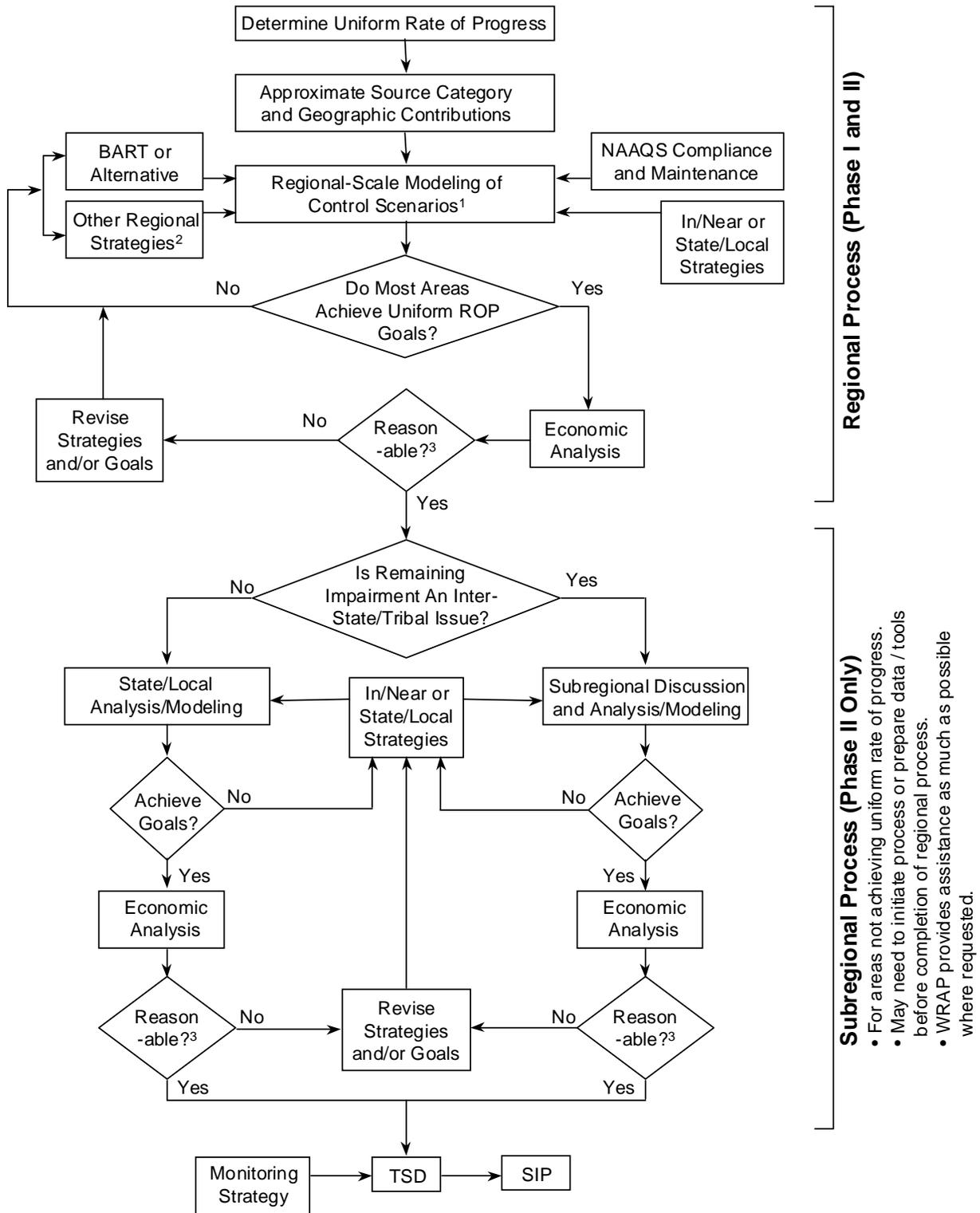
The third chart, following the timelines, shows the strategy development process and highlights the initial focus on regional analyses and control strategies.



Major Activities															
2003			2004			2005			2006			2007			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1. Emissions Inventory Management and Improvement															
A. Complete fugitive dust and ammonia inventory, update source profiles															
B. Complete new data management system															
C. Compile and review 2002 emissions inventory, project to 2018															
2. Air Quality Modeling															
A. Implement source apportionment capabilities (using 1996 data)															
B. Complete modeling inputs (emissions and meteorology)															
C. Complete base case modeling, evaluation, source apportionment (2002 + 2018)															
D. Finalize design of control strategy runs and other state/tribal-requested runs															
E. Complete control strategy modeling															
3. Apportionment (Source Contribution and Emission Reduction Obligation)															
A. Reconcile and synthesize modeling results, monitoring results, and other data															
B. Initial estimate of which Class I areas each SIP and TIP will address															
C. Determine emission reduction obligations by state and tribe															
D. Resolve transboundary issues, if necessary															
4. Visibility Monitoring, Analysis, and Reporting															
A. Estimate future site-specific uniform rate of progress for each Class I area															
B. Estimate historical progress; Analyze and report all relevant data on the Web															
C. Draft/complete causes of haze report -- comprehensive assessment															
5. Address BART Requirements															
A. Identify BART-eligible sources															
B. Identify which BART-eligible sources should be subject to BART															
C. Approximate emission reductions that would be attributable to BART															
6. Develop Control Strategies															
A. Identify methodology for researching and finalizing control strategies															
B. Complete identification and exploration phase (including demo projects)															
C. Refine likely control strategies (including emission reductions and cost/benefit)															
D. WRAP review/endorse regional strategies, adjust progress goals if necessary															
7. State/Tribal Adoption of Plans															
A. Complete regional technical support document															
B. Submit SIPs and TIPs to EPA															

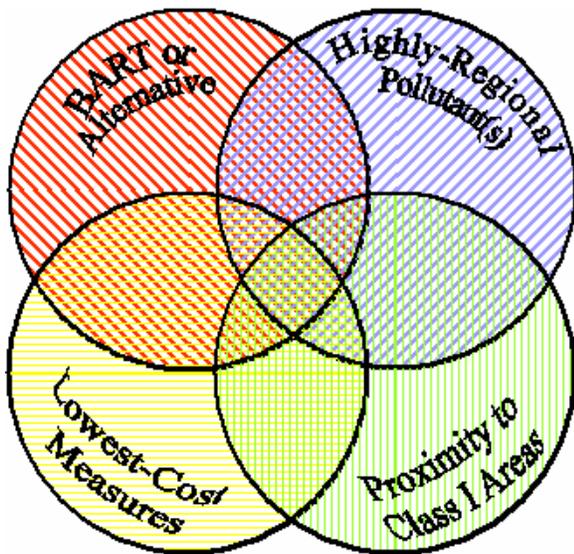
	2003				2004				2005				2006				2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Tribal-Only Activities																				
8. Refine Framework for Tribal/Federal Implementation on Tribal Lands																				
A. Develop policy to determine when federal implementation is appropriate																				
B. Develop guidance on what elements of a TIP may be "reasonably severable"																				
309 Activities																				
9. Emissions Tracking																				
A. SO2 emissions for comparison to milestones																				
B. Fire emissions																				
C. Clean air corridor and mobile source emissions																				
10. Renewable Energy and Energy Efficiency																				
A. Report on programs and progress																				
B. Provide technical assistance for SIPs/TIPs (continuous)																				
C. Facilitate 10/20 goals through regional credit market development (continuous)																				
11. Compliance with all 308 requirements (except SO ₂ BART) for areas outside the Colorado Plateau																				

Process for Developing Emission Control Strategies for Regional Haze



Control Strategies

The figure below provides a conceptual model for addressing the “navigational challenge” described in Chapter III regarding the large number and diversity of possible control strategies. The colored circles represent approaches to developing control strategies which will be at the heart of future SIPs and TIPs. The objective is to develop strategies that lie within as much of the overlapped areas as possible. The ideal strategy(ies) therefore address the most prevalent pollutant(s) in the region at the lowest possible cost, preferably in areas upwind or near western Class I areas, while satisfying BART emission reduction obligations.



One approach is to conduct sensitivity runs using regional-scale models to determine the approximate amount of emissions reductions that would produce a given visibility benefit. Then, strategies would be investigated with the aim of achieving those reductions in a practical, least-cost fashion. In the event that some areas are not anticipated to fully achieve their uniform rate of progress from these regional strategies, subregional strategies and analysis tools can be pursued.

This approach is reflected in the flow chart above.

Finally, since the RHR is not prescriptive with respect to control strategies, and since “reasonableness” is one of the criteria for determining SIP and TIP adequacy, innovative and common-sense measures can be pursued, such as improving state and tribal outreach to the regulated community to optimize compliance with existing regulations. In addition, although states and tribes do not have as much leverage over nonroad mobile sources as the federal government, there are some emission reduction measures they can pursue, and the WRAP Board has recently expressed interest in pursuing these measures with the EPA’s support.³ Measures such as these and outreach to the regulated community could help close the gap to achieving reasonable progress for visibility.

Apportionment

The RHR does not explicitly require a source apportionment, but rather stresses the apportionment of “emission reduction obligations” among states. This places a distinct emphasis on the policy outcome. That is, a SIP must describe the state’s commitment to emission reductions and the technical basis for determining such commitment, but it is not compelled to quantify or express its contribution to the problem in each Class I area. Provided states commit to emission reductions sufficient to achieve reasonable progress (such as through a regional trading program), the issue of source apportionment may become secondary. Nonetheless, source apportionment analysis is important to ensure that appropriate sources and

³ See January 28, 2003 letter from WRAP Board to EPA Administrator Christine Whitman.

pollutants are addressed and that state emission reduction obligations are generally proportional to their contribution to the problem.

A key challenge will be to marry “source apportionment” results from both air quality models and ambient monitoring data analyses into a cohesive and interpretive “contribution assessment” that takes into consideration the strengths and weaknesses of each analytical approach, emissions inventory information, other studies in the region, and the broader understanding of atmospheric science, analogous to the "weight of evidence" approach described in EPA guidance documents for PM_{2.5} and ozone SIPs. To do this, the TOC will establish a work group of diverse and multidisciplinary individuals of broad stakeholder representation. Moreover, in concert with the two-phased strategic plan, the contribution assessment will be performed twice – once in 2004 to determine preliminary results, work out the process, and inform the control strategy development process (discussed above), and again in 2006 for the final technical analysis and control strategy decisions.

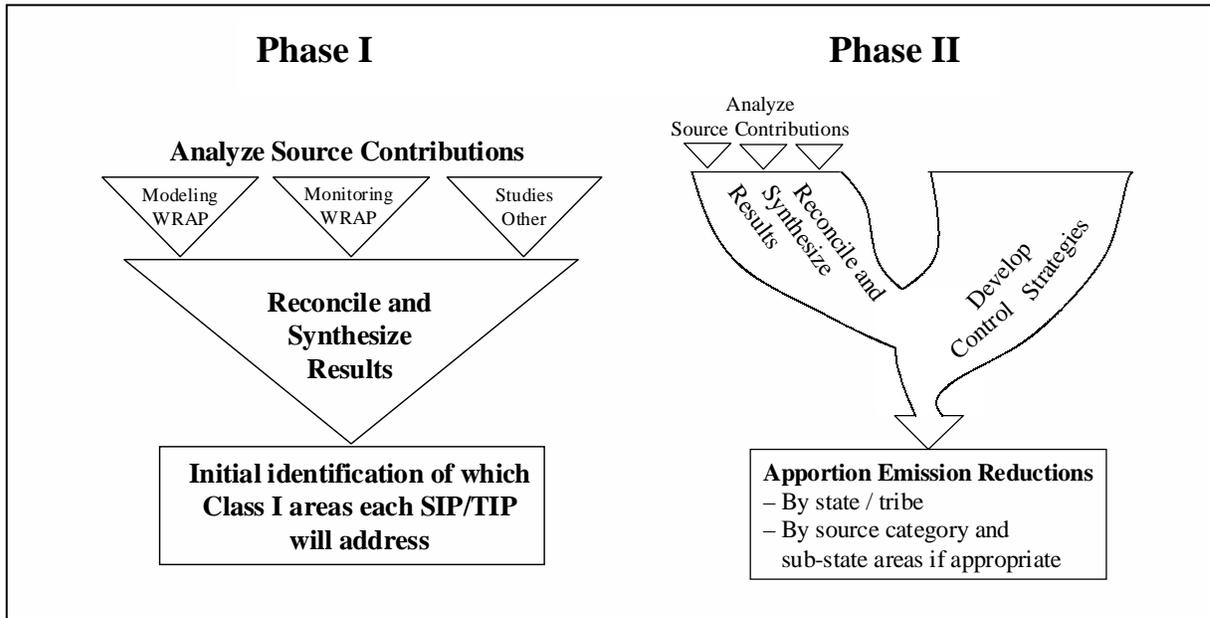
Mindful of the goal of achieving a consensus regional approach to the problem of haze, the WRAP must balance the rigor, specificity, and expense of the contribution assessment with what is effective for regional planning and sufficient for SIP and TIP purposes. As a first step, the oversight committees will consider a mini-apportionment for one or two heavily-studied Class I areas (e.g., Yosemite and Grand Canyon) using existing reports and data analyses, supplemented with further

WRAP analysis if necessary. This synthesis could be useful for planning a broader approach and for setting proper expectations. An approach for conducting both a source and an emission reduction apportionment at such a broader level is provided on the following pages.

Subregional Analyses

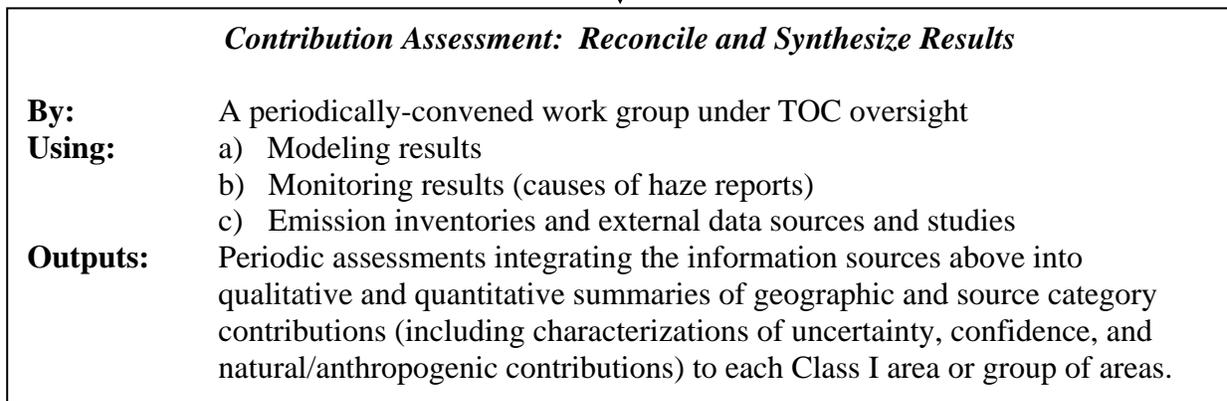
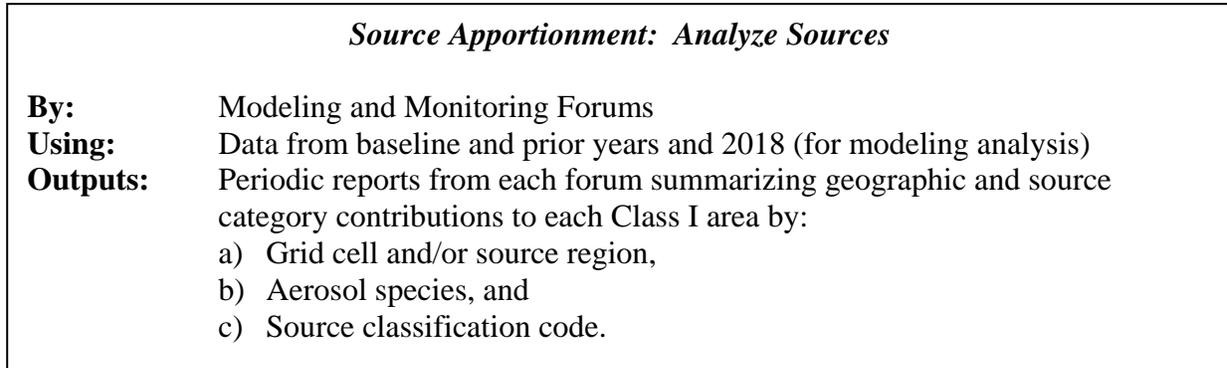
Although visibility-impairing pollutants may have impacts hundreds of miles away from their points of emission, the WRAP nonetheless contains relatively unique subregions (or airsheds) defined by geography, climatology, and emission source strength and diversity. Determining the source contributions, emission reduction obligations, and preliminary and final control strategies in some of these airsheds will require air quality modeling at high geographic resolutions. This may be especially true in political or geographic border areas, or where disagreement exists over apportionment. The Air Quality Modeling Forum will develop a way to model at higher resolutions where needed. Such resolution might be provided by nested grids or other methods using the CMAQ modeling system currently in place, or the Forum may consider using other models. Geographically-enhanced modeling may also support BART assessments and analysis of sources and strategies in and near Class I areas and in the Alaska region, in addition to supporting related air quality issues, such as the contribution of road dust to haze and human exposure to PM_{2.5} from relatively nearby sources (dry lake beds, agricultural burning, etc.).

Simplified Apportionment Process

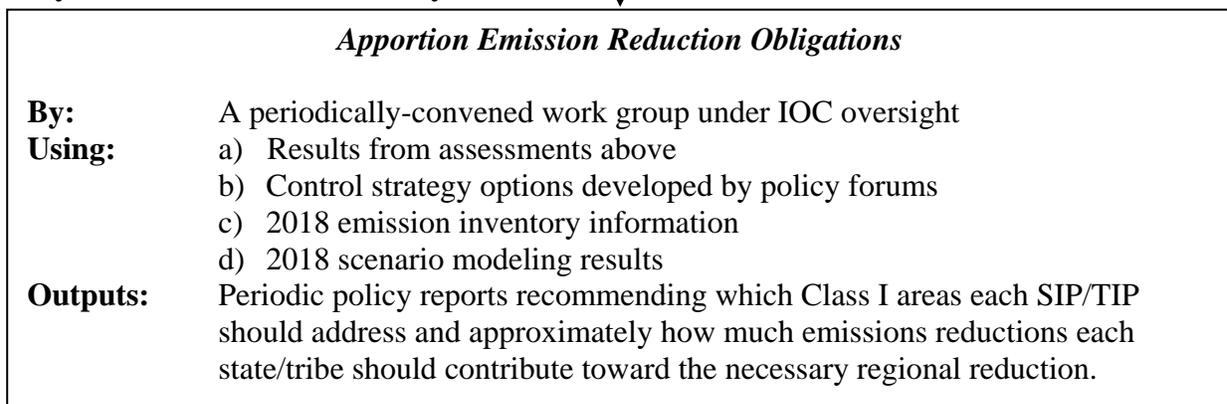


Detailed Apportionment Process

Technical Process – Occurs in Phase I and Phase II



Policy Process – Occurs in Mostly Phase II



V. Opportunities to Build on WRAP Regional Haze Efforts

The WRAP's extensive and growing base of air quality data, tools, and expertise, as well as its history of cooperation and policy development, provides a strong foundation for its members to address other issues of regional importance. The WRAP is prepared to capitalize on these efforts and support its members where resources permit.

Tribal Issues

Tribes in the WRAP region face a range of unique environmental, health, institutional, and resource issues. The WRAP Board has strong tribal representation, and much has been done recently to improve tribal data resources, such as the tribal emission inventory software, tribal pollution prevention documents, and ongoing work in the Economic Analysis and In and Near Forums. Furthermore, reduction in visibility-impairing pollutants will tend to have other (e.g., health) benefits for the tribes.

To maximize the utility of the WRAP's products for tribes, for both regional haze and other air quality objectives, there is a need for a better understanding of the shortcomings, if any, of WRAP technical tools from a tribal perspective. That is, what would be the difference in the emissions inventories, modeling, monitoring, and economic analysis results if the WRAP had "perfect" data for tribes? At a qualitative level, what effect would more complete data regarding tribal lands have on decisions regarding control strategies?

Future work plans of WRAP forums and committees will be designed to address these general questions in the specific context of the group's charge. For example, the Air

Quality Modeling Forum will consider reporting results at the tribal Class I areas. The WRAP will maintain and strengthen its commitment to advance tribal air issues of all sorts.

State Issues

Although resources and the capacity to address a wide range of air quality issues are also a challenge to WRAP state members, states (because of some pre-existing experience and expertise) may often benefit more simply from technology transfer. Good examples of technology transfer that will be continued and strengthened include the Visibility Information Exchange Website (VIEWS) for analyzing and presenting ambient monitoring data, a new emissions data management and tracking system, and a capability for modeling subregions within the WRAP.

Regional Ozone Assessment

Ground-level ozone shares many attributes with visibility-impairing pollutants, including emission sources, transport distances, health effects, and inter-related chemical reactions. Indeed, the WRAP's regional scale modeling system includes ozone as one of its variables. At a minimum, these ozone data will be included more routinely in the assessment and reporting of regional haze modeling efforts.

The WRAP is also prepared to build upon its regional-scale modeling capacity to address long-range transport and background ozone concentrations when requested by its members. EPA grant guidance to regional planning organizations such as the WRAP acknowledges the need to integrate work on

other pollutants, such as ozone and fine particles, so long as this is accomplished “in such a way that regional haze is not overtaken and dominated by the other pollutants.”

Member Participation

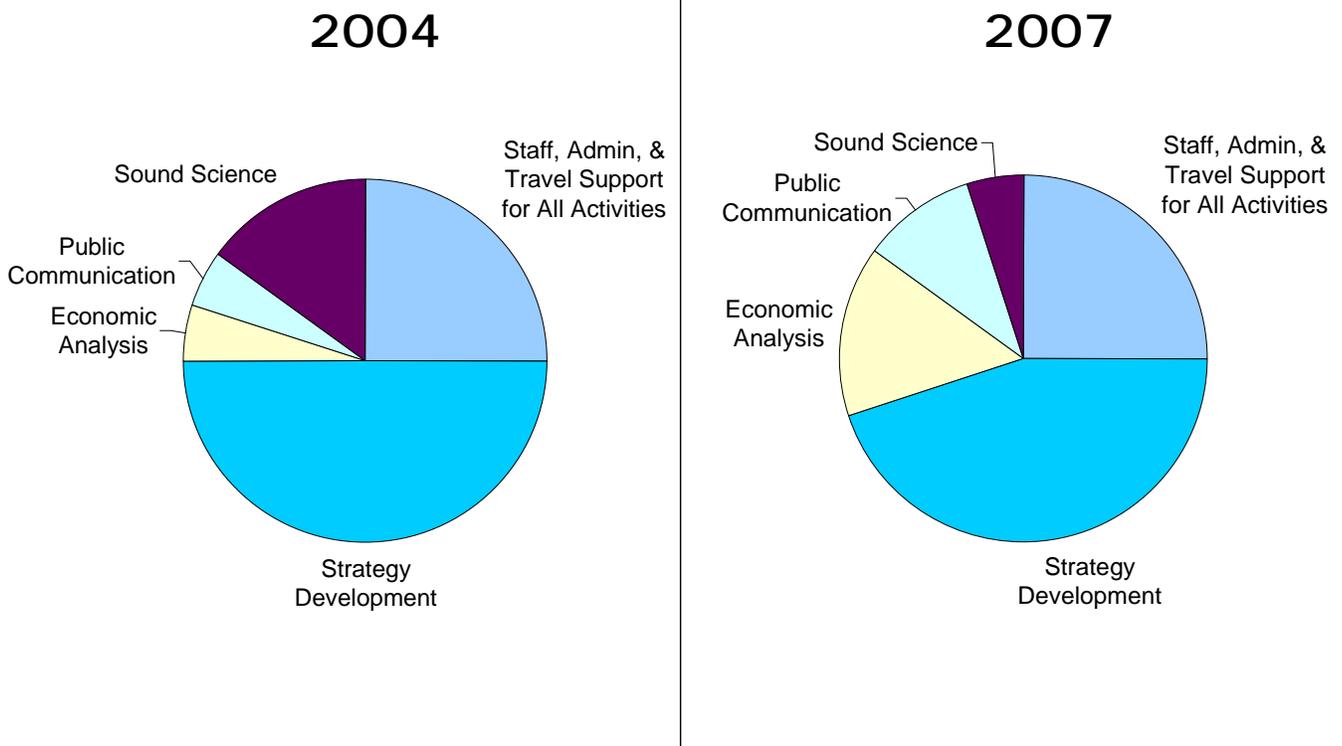
Given tribal resource limitations and the largest state revenue shortfall in decades, active participation by some WRAP members will be difficult. This is

exacerbated by the fact that state and tribal grants from the EPA do not include resources for regional haze rule implementation. Some options for maintaining active member participation in light of diminishing resources include requesting the EPA to provide some resources to states and tribes for participation in the regional planning organizations (RPOs) and increasing WRAP staff support to facilitate state/tribal involvement.

VI. Conceptual WRAP Budget Allocation

The figure below recommends an approximate allocation of the WRAP's budget among major activity areas. These areas correspond with those shown on page 3 of this strategic plan. Absolute figures are not provided, nor can they be fully predicted. However, it is presumed that the WRAP will be funded at approximately its current level over the period covered by this plan.

The figure illustrates that efforts to improve the scientific basis for WRAP policies and to develop emission management strategies (including all the technical support) will receive relatively greater emphasis in 2004 than in 2007, at which time economic analysis and public outreach will receive greater emphasis.



VII. Organization of WRAP Committees and Forums

A chart showing the current organization of WRAP committees and forums is provided on the following page. The recommendations below are made to streamline the organization and reflect management practices that have proven more efficient in the recent past:

- Consider eliminating the Coordinating Group and replacing it with the Planning Team.
- Consider eliminating the International Projects Committee. International issues are currently, and will continue to be, addressed as needed in the appropriate forums (e.g., emissions). Coordination will also be maintained with CENRAP and through relevant WGA projects.
- Consider eliminating the Research and Development Forum. Use of the best science is an integral part of all forum and committee activities and may be best addressed in specific forum activities.

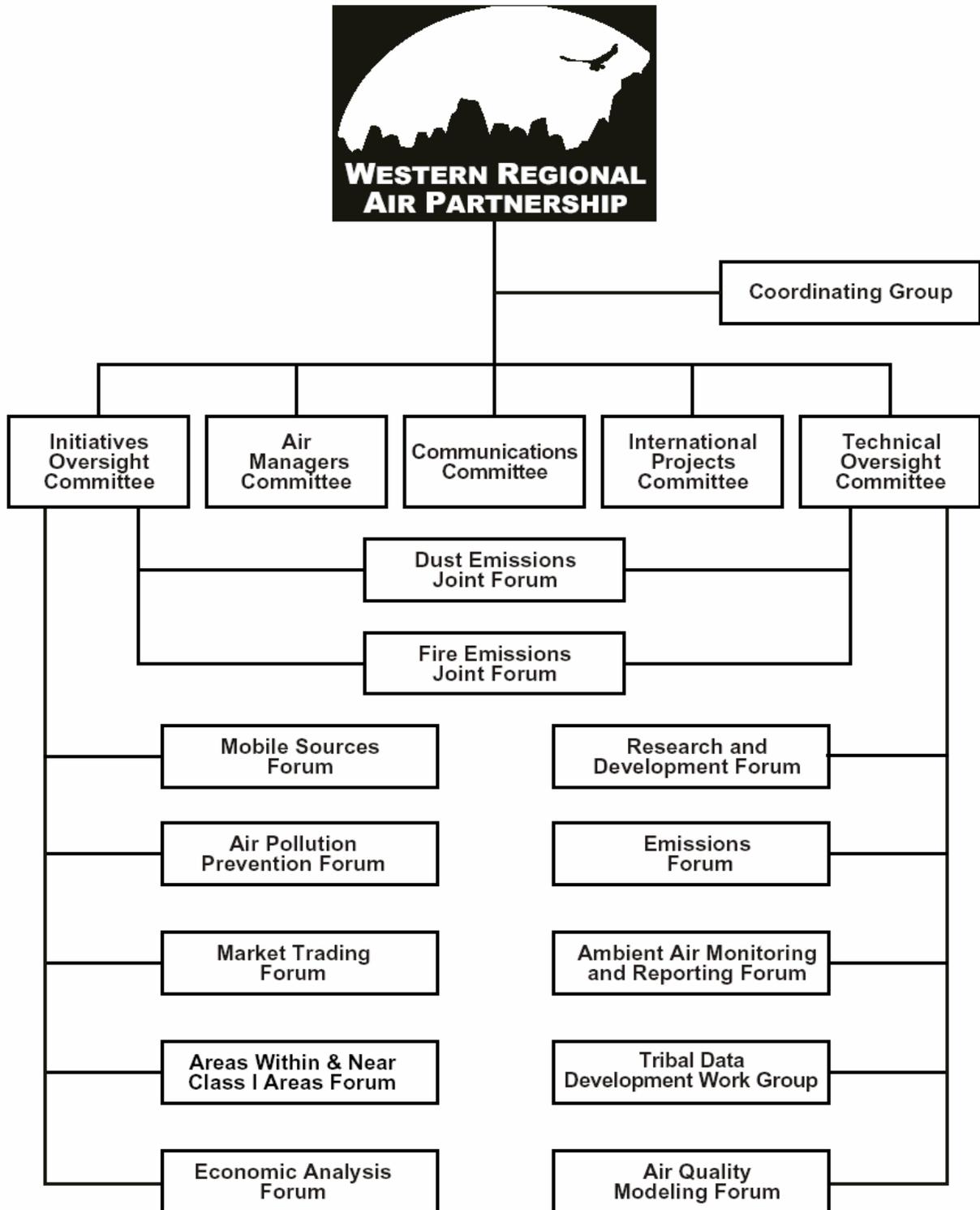
The following recommendations are made in anticipation of potential new challenges facing the WRAP. Unlike the ones above, which are more “house-keeping” in nature, these recommendations address more fundamental issues about the focus and interaction of forums:

- Consider establishing a source apportionment work group under the TOC to integrate various technical analyses into qualitative and quantitative summaries of source contributions (e.g., by source region, source category, and natural vs anthropogenic).
- Consider establishing a reduction apportionment work group under the IOC to recommend emission reduction obligations that must be included in each

SIP. The work group would consider the source apportionment summaries, feasibility and effectiveness of control strategies, and other issues necessary to determine an equitable manner for achieving reasonable progress.

- Both work groups suggested above and their respective oversight committees must pay considerable attention to potential disagreements and resolution procedures, especially given the uncertainties associated with apportionment methods. Such procedures exist in the WRAP, but the work groups and committees must be familiar with them.
- Consider changing the Market Trading Forum to a Stationary Sources Joint Forum to broaden or clarify its mission such that it addresses all stationary sources (including large fugitive ones) and all visibility impairing pollutants they emit. This will also be more consistent with other source-oriented forums. However, the Forum may want to establish an Annex Implementation Work Group to track this program where implemented and address issues related to its possible expansion to other states.
- Given the many potential control measures, the need to select and tailor them in response to the source apportionment results, and the need to consider the statutory criteria for reasonable progress, the IOC may need to provide strong guidance and coordination to its forums to prevent divergence. The use of work groups based on types of control measures, pollutants, or geographic scales may help ensure that the source-oriented forums do not overlook the most effective or integrated approaches.

Current Organization of WRAP Committees and Forums



Appendix A: History of Regional Haze Control in the U.S.

The 1977 Clean Air Act Amendments

Federal oversight of visibility was initiated with the Clean Air Act (CAA) amendments of 1977. The amendments established two programs that deal explicitly with visibility. The first, known as prevention of significant deterioration (PSD), is meant to limit backsliding in relatively clean areas of the country and to provide extra protection to unique federal lands known as Class I areas. The PSD program applies only to new and modified large stationary sources located in areas attaining the national ambient air quality standards (NAAQS). It requires the use of best available control technology (BACT) and limits the amount pollution that affected sources can cumulatively add to the environment to specified “increments.” Class I areas are provided more protection through lower increments and through the role that federal land managers (FLMs) play in protecting air quality related values (AQRVs), which may include visibility.

The second program established by the CAA to address visibility is found in Section 169 of the Act. This section focuses exclusively on visibility and provides authority to address existing sources of air pollution, as well as new ones. Section 169 declares as a national goal “the prevention of any future, and the remedying of any existing impairment of visibility in mandatory class I Federal areas which impairment results from man-made air pollution.” Section 169 requires the EPA to promulgate regulations assuring reasonable progress towards meeting this national goal. The regulations must include guidance to states and implementation plans for states in which mandatory Class I areas are located or from which emissions may reasonably be

anticipated to cause or contribute to any impairment of visibility in any such area. A state implementation plan (SIP) must contain a long-term (10 to 15 years) strategy for making reasonable progress toward the national goal and require best available retrofit technology (BART) to be installed at major stationary sources which began operation between 1962 and 1977 and which may cause or contribute to haze in any Class I area.

In 1979, the EPA designated all but two of the 158 mandatory federal Class I areas as subject to regulations promulgated under Section 169 of the Act. These areas were selected on the basis of visibility as an important value and in consultation with the Secretary of the Interior.

The 1980 Visibility Rule

The EPA took a two-phased approach in implementing Section 169 of the CAA. First, with rules published in 1980, it sought to address impairment that can be traced to a single stationary source or small group of sources. Often known as the plume blight rule, it covers only sources whose contribution is “reasonably attributable” through “visual observation or any other technique the State deems appropriate.” Lacking monitoring, modeling, and scientific knowledge about regional haze – caused by numerous sources over wide geographic areas – the EPA deferred its second phase.

The 1990 Clean Air Act Amendments

Recognizing the lack of progress towards meeting the national visibility goal, especially as affected by regional haze, these

amendments instructed the EPA to carry out additional studies, form regional visibility transport commissions where appropriate or requested, and based on the findings of these studies and commissions, promulgate regulations under the existing statutory framework (e.g., BART and SIPs with long-term strategies). The 1990 CAA Amendments required the EPA to create the GCVTC (in 1991) and to take its recommendations into account in subsequent rulemaking.

The National Academy of Sciences Report

In 1993, the National Academy of Sciences (NAS) published a report on regional haze titled *Protecting Visibility in National Parks and Wilderness Areas*. Some of the reports major findings are provided below:

- Current scientific knowledge is adequate and control technologies are available for taking regulatory action to improve and protect visibility.
- A program that focuses solely on determining the contribution of individual emission sources to visibility impairment is doomed to failure.
- Achieving the national visibility goal will require a substantial, long-term program.
- Progress toward the national goal will require regional programs that operate over large geographic areas.
- Visibility policy and control strategies might need to be different in the West than in the East.

The 1996 Grand Canyon Visibility Transport Commission Report

The Commission was comprised of eight states, four tribes, and (as ex officio members) five federal agencies and an inter-tribal commission.

The purpose of the GCVTC was to assess information about the adverse impacts on visibility in and around 16 Class I areas on the Colorado Plateau and to provide policy recommendations to the EPA to address such impacts. The GCVTC recommendations covered a wide range of control strategy approaches, planning and tracking activities, and technical findings. The GCVTC issued its final recommendations in 1996, and these were largely included in the final RHR in 1999 as an option for nine Western states and several tribes within the Grand Canyon Visibility Transport Region. The primary recommendations of the Commission covered nine categories of activities:

- Air pollution prevention, primarily in the form of renewable energy development.
- Tracking the effect of new sources of emissions on clean air corridors.
- Establishment of regional emission milestones for sulfur dioxide and contingencies for market-based regulatory programs and other pollutants if necessary.
- Emission reductions in and near Class I areas.
- Capping of mobile source emissions in areas contributing to visibility impairment.
- Further assessment of the contribution of road dust to visibility impairment.
- Binational collaboration with Mexico.
- Smoke management programs to minimize effects of all fire activities on visibility.
- The need for a future regional coordinating entity to follow through on implementing the recommendations.

Appendix B: Strategic Plan Work Group Members

Name	Affiliation	WRAP Role
Co-Chairs		
Bob Saunders	WA Dept. of Ecology	TOC
Bobby Ramirez	Salt River Indian Community	Emissions Forum Formerly of TOC
Other Members		
Rick Boddicker	SD DNR	State member
Francis Chin	Shungnak Native Village (AK) and the Maniilaq Association	Board member
Alice Edwards	AK DEC	Emissions Forum
Bob Habeck	MT DEQ	State member
Trista Glazier	MT DEQ	State member
Lewis McLeod	Confederated Tribes of Salish & Kootenai	TOC
Dana Mount	ND Dept. of Health	State member Formerly TOC member
Tom Bachman	ND Dept. of Health	State member
Mike Silverstein	CO DPHE	State member
Kevin Briggs	CO DPHE	Modeling Forum
Rick Sprott	UT DAQ	IOC/AMC
Tom Webb	EPA Region IX	Planning Team
Support Staff		
Lee Alter	WGA	IOC
Don Arkell	WESTAR	AMC
Pat Cummins	WGA	Co-Director
Bill Grantham	NTEC	Co-Director
Bob Gruenig	NTEC	AMC
Tom Moore	WGA	TOC

Appendix C: Tribes in the WRAP Region

This list of tribes was provided by the Institute of Tribal Environmental Professions (ITEP) in July 2003 and was derived from databases maintained by federal agencies. ITEP can not confirm their accuracy. The five tribes in bold are designated as tribal Class I areas.

State	Tribe Name	State	Tribe Name
AK	Agdaagux Tribe of King Cove	AK	Kaktovik Village
AK	Akiachak Native Community	AK	Kenaitze Indian Tribe
AK	Akiak Native Community	AK	Ketchikan Indian Corporation
AK	Alatna Village	AK	Klawock Cooperative Association
AK	Algaaciq Native Village	AK	Knik Tribe
AK	Allakaket Village	AK	Kokhanok Village
AK	Angoon Community Association	AK	Koyukuk Native Village
AK	Anvik Village	AK	Lesnoi Village
AK	Arctic Village	AK	Levelock Village
AK	Asa'carsarmiut Tribe	AK	Lime Village
AK	Atqasuk Village	AK	Manley Hot Springs Village
AK	Beaver Village	AK	Manokotak Village
AK	Birch Creek Village	AK	McGrath Native Village
AK	Chalkyitsik Village	AK	Mentasta Traditional Council
AK	Chevak Native Village	AK	Metlakatla Indian Community
AK	Chickaloon Native Village	AK	Naknek Native Village
AK	Chignik Lake Village	AK	Native Village of Akhiok
AK	Chilkat Indian Village	AK	Native Village of Aleknagik
AK	Chilkoot Indian Association	AK	Native Village of Ambler
AK	Chinik Eskimo Community	AK	Native Village of Atka
AK	Chuloonawick Native Village	AK	Native Village of Belkofski
AK	Circle Native Community	AK	Native Village of Brevig Mission
AK	Craig Community Association	AK	Native Village of Buckland
AK	Curyung Tribal Council	AK	Native Village of Cantwell
AK	Egegik Village	AK	Native Village of Chignik
AK	Eklutna Native Village	AK	Native Village of Chignik Lagoon
AK	Ekwok Village	AK	Native Village of Chistochina
AK	Emmonak Village	AK	Native Village of Chitina
AK	Evansville Village	AK	Native Village of Chuatbaluk
AK	Galena Village	AK	Native Village of Council
AK	Gulkana Village	AK	Native Village of Deering
AK	Healy Lake Village	AK	Native Village of Eagle
AK	Holy Cross Village	AK	Native Village of Eek
AK	Hoonah Indian Association	AK	Native Village of Ekuk
AK	Hughes Village	AK	Native Village of Elim
AK	Huslia Village	AK	Native Village of Eyak
AK	Igiugig Village	AK	Native Village of False Pass
AK	Inupiat Community of the Arctic Slope	AK	Native Village of Fort Yukon
AK	Iqurmit Traditional Council	AK	Native Village of Gakona
AK	Ivanoff Bay Village	AK	Native Village of Gambell
AK	Kaguyak Village	AK	Native Village of Georgetown

State	Tribe Name	State	Tribe Name
AK	Native Village of Goodnews Bay	AK	Native Village of Tanana
AK	Native Village of Hamilton	AK	Native Village of Tatitlek
AK	Native Village of Hooper Bay	AK	Native Village of Tazlina
AK	Native Village of Kanatak	AK	Native Village of Teller
AK	Native Village of Karluk	AK	Native Village of Tetlin
AK	Native Village of Kasigluk	AK	Native Village of Toksook
AK	Native Village of Kiana	AK	Native Village of Tuntutuliak
AK	Native Village of Kipnuk	AK	Native Village of Tununak
AK	Native Village of Kluti Kaah	AK	Native Village of Tyonek
AK	Native Village of Kobuk	AK	Native Village of Unalakleet
AK	Native Village of Kongiganak	AK	Native Village of Venetie
AK	Native Village of Kotzebue	AK	Native Village of Wales
AK	Native Village of Koyuk	AK	Native Village of White Mountain
AK	Native Village of Kwigillingok	AK	Nenana Native Association
AK	Native Village of Kwinhagak	AK	New Koliganek Village Council
AK	Native Village of Larsen Bay	AK	New Stuyahok Village
AK	Native Village of Marshall	AK	Newhalen Village
AK	Native Village of Mary's Igloo	AK	Newtok Village
AK	Native Village of Mekoryuk	AK	Nikolai Village
AK	Native Village of Minto	AK	Ninilchik Village
AK	Native Village of Nanwalek	AK	Nome Eskimo Community
AK	Native Village of Napaimute	AK	Nondalton Village
AK	Native Village of Napakiak	AK	Noorvik Native Community
AK	Native Village of Napaskiak	AK	Northway Village
AK	Native Village of Nelson Lagoon	AK	Nulato Village
AK	Native Village of Nightmute	AK	Ohgsenakale Village
AK	Native Village of Nikolski	AK	Organized Village of Grayling
AK	Native Village of Noatak	AK	Organized Village of Kake
AK	Native Village of Nuiqsut	AK	Organized Village of Kasaan
AK	Native Village of Nunapitchuk	AK	Organized Village of Kwethluk
AK	Native Village of Paimiut	AK	Organized Village of Saxman
AK	Native Village of Perryville	AK	Orutsararmuit Native Villafe
AK	Native Village of Pilot Point	AK	Oscarville Traditional Village
AK	Native Village of Pitka's Point	AK	Pedro Bay Village
AK	Native Village of Point Hope	AK	Petersburg Indian Association
AK	Native Village of Point Lay	AK	Pilot Station Traditional Village
AK	Native Village of Port Graham	AK	Platinum Traditional Village
AK	Native Village of Port Heiden	AK	Qawalangin Tribe of Unalaska
AK	Native Village of Port Lions	AK	Rampart Village
AK	Native Village of Ruby	AK	Seldovia Village Tribe
AK	Native Village of Saint Michael	AK	Shageluk Native Village
AK	Native Village of Savoonga	AK	Sitka Tribe of Alaska
AK	Native Village of Scammon Bay	AK	Skagway Village
AK	Native Village of Selawick	AK	South Naknek Village
AK	Native Village of Shaktoolik	AK	Stebbins Community Association
AK	Native Village of Sheldon's Point	AK	Takotna Village
AK	Native Village of Shungnak	AK	Telida Village
AK	Native Village of Stevens	AK	Traditional Village of Togiak
AK	Native Village of Tanacross	AK	Tuluksak Native Community

State	Tribe Name	State	Tribe Name
AK	Twin Hills Village	CA	Agua Caliente Band of Indians
AK	Ugashik Village	CA	Alturas Indian Rancheria
AK	Umkumiute Native Village	CA	Augustine Band of Indians
AK	Village of Afognak	CA	Barona Group of Mission Indians
AK	Village of Alakanuk	CA	Benton Paiute Reservation
AK	Village of Anaktuvuk Pass	CA	Berry Creek Rancheria
AK	Village of Aniak	CA	Big Lagoon Rancheria
AK	Village of Atmautluak	CA	Big Pine Band of Paiute Shoshone Indians
AK	Village of Bill Moore's Slough	CA	Big Sandy Rancheria
AK	Village of Chefornak	CA	Big Valley Rancheria
AK	Village of Clark's Point	CA	Bishop Paiute Tribe
AK	Village of Crooked Creek	CA	Blue Lake Rancheria
AK	Village of Dot Lake	CA	Bridgeport Paiute Indian Colony
AK	Village of Iliamna	CA	Buena Vista Rancheria
AK	Village of Kalskag	CA	Cabazon Band of Indians
AK	Village of Kaltag	CA	Cahuilla Band of Indians
AK	Village of Kotlik	CA	California Valley Miwok Tribe
AK	Village of Lower Kalskag	CA	Campo Band of Kumeyaay Indians
AK	Village of Ohogamiut	CA	Cedarville Rancheria
AK	Village of Old Harbor	CA	Chemehuevi Tribe
AK	Village of Red Devil	CA	Chicken Ranch Rancheria
AK	Village of Salamatoff	CA	Cloverdale Rancheria
AK	Village of Sleetmute	CA	Cold Springs Rancheria
AK	Village of Solomon	CA	Colusa Rancheria
AK	Village of Stony River	CA	Cortina Indian Rancheria
AK	Village of Wainwright	CA	Coyote Valley Band of Indians
AK	Wrangell Cooperative Association	CA	Dry Creek Rancheria
AK	Yakutat Tlingit Tribe	CA	Elem Indian Colony
AK	Yupiiit of Andreafski	CA	Elk Valley Rancheria
AZ	Ak-Chin Indian Community	CA	Enterprise Rancheria
AZ	Cocopah Tribe	CA	Ewiiapaayp Tribe
AZ	Colorado River Indian Tribes	CA	Fort Bidwell Indian Community
AZ	Fort McDowell Yavapai Nation	CA	Fort Independence Paiute and Shoshone Tribes
AZ	Gila River Indian Community	CA	Fort Mojave Indian Tribe
AZ	Havasupai Tribe	CA	Greenville Rancheria
AZ	Hopi Tribe	CA	Grindstone Creek Indian Rancheria
AZ	Hualapai Tribe	CA	Guidiville Rancheria
AZ	Kaibab Band of Paiute Indians	CA	Habematolel Pomo of Upper Lake
AZ	Pascua Yaqui Tribe	CA	Hoopla Valley Tribe
AZ	Quechuan Tribe	CA	Hopland Band of Pomo Indians
AZ	Salt River Pima-Maricopa Indian Community	CA	Inaja-Cosmit Band of Indians
AZ	San Carlos Apache Tribe	CA	Ione Band of Miwok Indians
AZ	San Juan Southern Paiute	CA	Jackson Rancheria
AZ	Tohono O'Odham Nation	CA	Jamul Indian Village
AZ	Tonto Apache Tribe	CA	Karuk Tribe
AZ	White Mountain Apache Tribe	CA	La Jolla Band of Indians
AZ	Yavapai-Apache Nation	CA	La Posta Band of Indians
AZ	Yavapai-Prescott Indian Tribe	CA	Laytonville Rancheria

State	Tribe Name	State	Tribe Name
CA	Lone Pine Indian Community	CA	Twenty-Nine Palms Band of Indians
CA	Los Coyotes Band of Indians	CA	United Auburn Indian Community
CA	Lytton Rancheria	CA	Viejas Band of Mission Indians
CA	Manchester-Point Arena Rancheria	CA	Winnemucca Indian Colony
CA	Manzanita Band of Kumeyaay	CA	Woodsford Colony-Washoe Tribe
CA	Mechoopda Indian Tribe	CA	Yurok Tribe
CA	Mesa Grande Band of Indians	CO	Southern Ute Indian Tribe
CA	Middletown Rancheria	CO	Ute Mountain Ute Indian Tribe
CA	Mooretown Rancheria	ID	Coeur d'Alene Tribe
CA	Morongo Band of Indians	ID	Kootenai Tribe of Idaho
CA	North Fork Rancheria	ID	Nez Perce Tribe
CA	Pala Band of Indians	ID	Shoshone-Bannock Tribes
CA	Paskenta Band of Indians	MT	Blackfeet Tribe
CA	Pauma Yuima Band of Indians	MT	Chippewa-Cree Tribe of Rocky Boy's Reservation
CA	Pechanga-Temecula Band of Indians	MT	Confederated Salish & Kootenai Tribes
CA	Picayune Rancheria	MT	Crow Tribe
CA	Pinoleville Indian Reservation	MT	Fort Belknap Indian Community
CA	Pit River Tribe	MT	Fort Peck Tribes
CA	Potter Valley Rancheria	MT	Northern Cheyenne Tribe
CA	Quartz Valley Indian Community	ND	Spirit Lake Tribe
CA	Ramona Band of Indians	ND	Standing Rock Sioux Tribe
CA	Redding Rancheria	ND	Three Affiliated Tribes
CA	Redwood Valley Rancheria	ND	Turtle Mountain Band of Chippewa
CA	Rincon Band of Indians	NM	Jicarilla Apache Tribe
CA	Robinson Rancheria	NM	Mescalero Apache Tribe
CA	Rohnerville Rancheria	NM	Navajo Nation
CA	Round Valley Indian Tribes	NM	Pueblo of Acoma
CA	Rumsey Indian Rancheria	NM	Pueblo of Cochiti
CA	San Manuel Band of Indians	NM	Pueblo of Isleta
CA	San Pasqual Band of Indians	NM	Pueblo of Jemez
CA	Santa Rosa Band of Indians	NM	Pueblo of Laguna
CA	Santa Rosa Rancheria	NM	Pueblo of Nambe
CA	Santa Ynez Band of Indians	NM	Pueblo of Picuris
CA	Santa Ysabel Band of Indians	NM	Pueblo of Pojoaque
CA	Scotts Valley Rancheria	NM	Pueblo of San Felipe
CA	Sherwood Valley Rancheria	NM	Pueblo of San Ildefonso
CA	Shingle Springs Rancheria	NM	Pueblo of San Juan
CA	Smith River Rancheria	NM	Pueblo of Sandia
CA	Soboba Band of Indians	NM	Pueblo of Santa Ana
CA	Stewarts Point Rancheria	NM	Pueblo of Santa Clara
CA	Susanville Indian Rancheria	NM	Pueblo of Santo Domingo
CA	Sycuan Band of Indians	NM	Pueblo of Taos
CA	Table Mountain Rancheria	NM	Pueblo of Tesuque
CA	Timbisha Shoshone Tribe	NM	Pueblo of Zia
CA	Torres-Martinez Desert Cahuilla Indians	NM	Pueblo of Zuni
CA	Trinidad Rancheria	NV	Battle Mountain Band of Te-Moak
CA	Tule River Indian Tribe	NV	Carson Colony-Washoe Tribe
CA	Tuolumne Band of Indians	NV	Dresslerville Colony-Washoe Tribe

State	Tribe Name	State	Tribe Name
NV	Duck Valley Reservation	SD	Sisseton-Wahpeton Sioux Tribe
NV	Duckwater Shoshone Tribe	SD	Yankton Sioux Tribe
NV	Elko Colony of Te-Moak	UT	Confederated Tribes of the Goshute
NV	Ely Shoshone Tribe	UT	Northwestern Band of the Shoshoni Nation
NV	Fallon Paiute-Shoshone Tribe	UT	Paiute Indian Tribe of Utah
NV	Fort McDermitt Tribes	UT	Skull Valley Band of Goshutes
NV	Las Vegas Paiute Tribe	UT	Ute Indian Tribe
NV	Lovelock Paiute Tribe	WA	Colville Tribes
NV	Moapa Band of Paiute Indians	WA	Confederated Tribes of the Chehalis
NV	Odgers Ranch Band of Te-Moak	WA	Cowlitz Tribe
NV	Pyramid Lake Paiute Tribe	WA	Hoh Indian Tribe
NV	Reno-Sparks Indian Colony	WA	Jamestown S'Klallam Tribe
NV	Ruby Valley Band of Te-Moak	WA	Kalispel Indian Community
NV	South Fork Band of Te-Moak	WA	Lower Elwha S'Klallam Tribal Community
NV	Stewart Colony-Washoe Tribe	WA	Lummi Tribe
NV	Summit Lake Paiute Tribe	WA	Makah Indian Tribe
NV	Walker River Paiute Tribe	WA	Muckleshoot Indian Tribe
NV	Washoe Tribe Ranches	WA	Nisqually Indian Tribe
NV	Washoe Tribes of Nevada	WA	Nooksack Indian Tribe
NV	Wells Colony of Te-Moak	WA	Port Gamble S'Klallam Indian Community
NV	Yerington Paiute Tribe	WA	Puyallup Tribe
NV	Yomba Shoshone Tribe	WA	Quileute Tribe
OR	Burns Paiute Tribe	WA	Quinault Indian Nation
OR	Confederated Coos, Lower Umpqua, & Siuslaw Tribes	WA	Samish Indian Nation
OR	Confederated Tribes of the Grand Ronde	WA	Sauk-Suiattle Indian Tribe
OR	Confederated Tribes of the Siletz	WA	Shoalwater Bay Tribe
OR	Confederated Tribes of the Umatilla Indians	WA	Skokomish Indian Tribe
OR	Confederated Tribes of the Warm Springs	WA	Snoqualmie Tribe
OR	Coquille Indian Tribe	WA	Spokane Tribe of Indians
OR	Cow Creek Band of Umpqua Indians	WA	Squaxin Island Tribe
OR	Klamath Tribe	WA	Stillaguamish Tribe
SD	Cheyenne River Sioux Tribe	WA	Suquamish Indian Tribe
SD	Crow Creek Sioux Tribe	WA	Swinomish Indian Tribal Community
SD	Flandreau Santee Sioux Tribe	WA	Tulalip Tribes of Washington
SD	Lower Brule Sioux Tribe	WA	Upper Skagit Indian Tribe
SD	Oglala Sioux Tribe	WA	Yakama Nation
SD	Rosebud Sioux Tribe	WY	Shoshone Tribe