

Western Regional Air Partnership Work Plan Update

Prepared by WRAP Forums and Oversight Committees and
Submitted for WRAP Board Approval

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Executive Summary

Emissions Inventories and Projections

Accurate and complete inventories of emissions of visibility impairing pollutants are necessary to formulate and evaluate reasonable progress strategies under both sections of the Regional Haze Rule (§308 & §309). Emissions inventories are required for three major sectors: stationary sources, area sources (including fire and dust); and mobile sources. The WRAP has developed emission inventories for these sectors for the base year of 1996 (the most recent for which complete data is available) and is using these to project emissions for 2018, the end of the first long term strategy period under §309. Projections for 2018 are being made for both the base case scenario (current regulations and known reductions) and the control case scenario (application of §309 strategies). Activities to be conducted in this phase of the project include the following:

Stationary & Area Sources

- The 1996 base year and 2018 projections will undergo a Quality Assurance/Quality Control process.
- Two tasks will be performed to meet requirements relating to the SO₂ Annex: comparing the year 2000 inventory to 1990 emissions to insure the required 13% reduction has been met; and collecting data on NO_x and PM to assess the need for controls for these pollutants.
- To assure regional consistency of WRAP emissions inventories, protocol for reconciling different emission estimation techniques will be developed, and training on these methods will be developed and provided to state and tribal staff.
- Studies will be conducted to improve estimation techniques for VOC & ammonia, and to improve techniques for particle speciation and spatial and temporal allocation of emissions.
- In order to be able to provide input to modeling runs and to track emissions from various sectors over time, a region wide emissions database is being developed (at this point it appears likely that the database will incorporate EPA's National Emissions Inventory (NEI) Input Format).
- Fugitive dust emissions present a special case, for which much work remains to address uncertainties and inconsistencies in current methodologies. For paved and unpaved road emissions, more accurate information is being collected for factors such as unpaved road VMT, silt content, and moisture levels. For dust from wind erosion and activities such as construction and agricultural tilling, a scope of work is under development to similarly improve emission factors. Finally, a separate but coordinated project will be conducted to estimate natural background conditions for dust.

- Smoke emissions from wildland and agricultural fires is another area for which current estimation techniques are inadequate for regional haze purposes. Fire emission estimation techniques will be evaluated, and a fire emission inventory developed and assessed.

Mobile Sources

Mobile source emissions inventories for the WRAP region for 1996 and future year projections were developed under the previous grant cycle. The WRAP has determined that modeling of emissions transport from states to the east of the WRAP region is necessary to evaluate reasonable progress. To enable this modeling, an emission inventory for mobile sources from these states will be developed.

Tribal Emissions Inventories

Because tribes are relative newcomers to air quality management in the modern regulatory sense, and have not received funding and institutional support until the last few years, a separate concentrated effort is required to develop tribal emissions inventories and EI capacity. The lack of emission inventory and other related data has limited the ability to analyze the effects of proposed strategies on tribal lands and populations. In the previous funding cycle, an assessment of current tribal emission inventories and air programs was conducted. The results of this assessment are being used to develop a strategy for filling this data gap over time. This involves the development (or modification of existing) emissions inventory generation software, a QA/QC plan for using the software, provision of training (using a train-the-trainers strategy), and targeted efforts to obtain certain data requested by WRAP Forums. These tasks will be closely coordinated with other WRAP emissions efforts to avoid duplication of efforts and products. In addition, a number of existing tribal EI's will be formatted for input to the NEI.

Emissions In & Near Class I Areas

Emissions which originate within, or close to, Class I areas (from sources such as automotive tourism and prescribed burning) can have a disproportionate effect on the visibility in those areas, relative to the size of the sources. As the GCVTC recognized, special strategies for "In and Near" emissions are therefore appropriate. Micro-inventories for eight National Parks are near completion. Under separate National Park Service funding, the micro-inventory project has been expanded to include additional National Parks (these are not limited to the Parks on the Colorado Plateau but include some from throughout the WRAP region). In addition, a Gateway Community Demonstration Project will be carried out to demonstrate the types of local actions that can be taken to reduce emissions. In conjunction with this demonstration project, the In and Near Forum intends to conduct a local emissions inventory to identify and quantify emissions and control strategies associated with sources in the selected gateway community.

Emission Reduction Strategies

Stationary Sources

Over the past three years, intensive effort has gone into developing the SO₂ milestones and backstop trading program Annex, which was successfully submitted to EPA in September 2000. Supplemental information requested by EPA was submitted in May 2001. Though the Annex is complete, a few tasks remain to enable its implementation. These include:

- development of an analysis of the “critical mass” of states and tribes needed to insure a feasible program;
- “geographic enhancements” to integrate the program with the existing “Reasonably Attributable” BART provisions;
- allocation provisions for non-utilities, source monitoring and emission and allowance trading protocols; and
- model rules, MOU, and legislation to enable the program.

Mobile Sources

Regulation of mobile source emissions is largely pre-empted by the federal government. The WRAP will investigate selected other strategies to control mobile source emissions, specifically managing growth of Vehicle Miles Traveled and controlling emissions from non-road diesel engines. Strategies for addressing road dust emissions will also be identified and assessed. Finally, under the regional haze rule, certain requirements are triggered by a finding of “significant visibility impairment” from mobile sources. The WRAP will formulate an objective measurement of “significant” in this context and carry out the analysis necessary to determine whether or not these requirements are triggered for any areas.

Fire

The Haze Rule expressly requires certain measures to address emissions from fire, including wildland and agricultural burning, and the WRAP work plan is designed to provide the tools to implement those measures. Under existing funding, the WRAP is developing the basis for the “enhanced” smoke management plans required by the rule, developing alternatives to wildland burning, and assessing current prescribed fire programs. In the instant work plan, funding mechanisms for smoke management programs will be developed, a review of the trade-offs involved in various wildland fire emissions strategies will be conducted, and a methodology will be developed to determine the annual burn goals required by the rule.

Pollution Prevention

Section 309 of the haze rule requires identification of certain information related to renewable energy and energy efficiency, and strategies for promoting these in order to fulfill the recommendations of the GCVTC. Under previous funding, the WRAP has developed reports analyzing renewable and efficiency options, in light of physical, institutional, and other considerations, and providing recommendations to states on preferred strategies. A report specifically for tribes on renewable energy prospects has also been produced in draft form. In this work plan, the economic effects of the proposed state strategies will be modeled, and integrated with the two state reports into a single set of recommendations. The tribal renewable report will be completed and a tribal energy efficiency report developed. Addressing the tribal reports' recommendations in the modeling work will be achieved to the greatest extent feasible at this time (dependent on the model's design parameters and output costs), with additional work needs identified for the future.

Assessment of Visibility Conditions and Economic Affects

Ambient Air Monitoring and Reporting

The WRAP has developed a database for all routinely collected Western aerosol, optical and meteorological data and made this available on the web. Improvements in the search ability, reporting capability, and other technical aspects of the database will be continued under existing funding. To provide analysis of the wealth of data available, annual reports containing statistical and graphical summaries will be prepared. Additionally, more comprehensive and interpretive reports on the causes of haze will be prepared every five years, with the first report slated for 2002.

Visibility Modeling

The Air Quality Modeling Forum (AQMF) is charged with the responsibility to identify, evaluate the performance of, and apply mathematical air quality modeling planning tools which are used to quantify the effects of alternative emission management options upon the air quality of the western United States. The current focus is to provide modeling support for States and Tribes to prepare State and Tribal Implementation Plans (SIPs and TIPs) following the requirements of the 40CFR51.309 regional haze rules.

Last winter, WRAP released two RFP's to assist with this modeling: one for creation of a WRAP Regional Modeling Center (RMC) and one for a "Jump-Start" contract to initialize the modeling. The RMC contract was awarded to the University of California at Riverside and the Jump-Start contract was awarded to MCNC-Environmental Programs in Research Triangle Park, NC. Both of these contracts are active and all of the models (SMOKE/REMSAD/CMAQ) are operational

and the model evaluation studies have been started. Projects for 2002 are proposed to provide additional support beyond that provided in the existing contracts. These include:

- Provide extended emissions processing (SMOKE) support from MCNC beyond the end of the current Jump-Start contract.
- Refinement of existing tools (SMOKE) for use by the Regional Modeling Center and for technology transfer to States/Tribes
- Development of better tools for technology transfer to States/Tribes

Economic Effects Modeling

The potential economic effects of various emission reduction strategies have been modeled on an ad hoc basis as such strategies were developed (e.g. the S02 Annex, the renewable energy and energy efficiency strategy). The WRAP has identified a need to insure consistency in assumptions and methodology among different economic modeling effort, and to provide more systematic economic modeling support to all Forums. Under this year's funding, the WRAP will develop a work plan to address requirements, timing, and priorities for economic analyses; review existing analyses and identify reconciliation needs; perform an aggregate analysis of all §309 strategies; and develop briefing products for internal and external use.

I. Overview

This work plan describes the Western Regional Air Partnership (WRAP) activities currently in progress or planned to meet the requirements of the Regional Haze Rule. This work plan includes steps leading to state and tribal implementation plans that are required to address regional haze visibility impairment under a national program (40 CFR 51.308) or an optional regional program for states and tribes in the Grand Canyon Visibility Transport Commission's (GCVTC) transport region (40 CFR 51.309). This plan addresses specific requirements of the regional haze rule and identifies the work products needed by each of the members to meet those requirements. This is an update and revision to the WRAP's Work Plans dated November 19, 1999 and December 15, 2000, which were previously submitted to EPA in support of FFY99 and FFY00 funding.

II. Background

The 1990 Amendments to the Clean Air Act established the GCVTC, which in June of 1996 completed its original mission to recommend strategies for improving visibility in the Grand Canyon and other Class I sites on the Colorado Plateau. Recognizing the need for a process to monitor and coordinate the implementation of its final recommendations, the GCVTC members created the WRAP. The work products of the WRAP will be used by states and tribes in the preparation of their individual implementation plans to meet the requirements of EPA's Regional Haze Regulations.

While the initial focus of the WRAP was to implement the recommendations of the GCVTC in conjunction with federal visibility rules, the requirements of these rules also highlighted the need to implement other regional planning processes to improve visibility in all western Class I areas. In March 1999, the WRAP expanded its charter to address all regional air quality issues.

The WRAP includes participants from industry, environmental groups and other affected parties and operates in conjunction with regional organizations such as WESTAR, the Western Governors' Association, and the National Tribal Environmental Council.

Section 308 of the regional haze rule contains a general requirement for states to submit an implementation plan, with the option for tribes to also submit implementation plans, on a schedule dependent on the attainment status of the fine particulate standard and participation in regional planning groups. Section 309 of the rule allows a state that is in the GCVTC transport region to submit an implementation plan conforming to the recommendations of the GCVTC if the state elects to submit the plan by December 2003. Such plans would satisfy the state's obligation for planning for the 16 Class I areas included in the jurisdiction of the GCVTC. The states would then be allowed to defer submittal of implementation plans for their other Class I areas until 2008. For the purpose of this planning document CFR 51.308 will be referred to as the National Rule or §308, and CFR 51.309 will be referred to as the GCVTC Rule or §309.

In preparing this plan, the WRAP assumes that several of its members will elect to submit implementation plans by the end of 2003 consistent with the requirements of §309. Periodically

thereafter, states and tribes will submit implementation plans under §308 or update plans under §309 on a schedule consistent with regulatory requirements and their infrastructure capabilities. This plan has been established to accommodate this anticipated staggered schedule, and work will evolve as WRAP members establish specific dates for the submission of their implementation plans. The WRAP forums will develop and deliver technical analysis and implementation plan control strategy components to address the major source categories identified in the regional haze rule in order to meet the regional haze planning needs of western states and tribes.

III. Tribal Options for Implementation Plan Development and Submittal

Under the regulatory framework provided by the Tribal Authority Rule (TAR) (40 CFR 49.1–49.11) and the Regional Haze Rule, tribal implementation of visibility programs through Tribal Implementation Plans is optional. The TAR authorizes but does not require tribes to receive delegation of authority to implement any program, or “reasonably severable elements” of a program, under the Clean Air Act. The preamble to the regional haze rule explains that “a tribal visibility program is not dependent on strategies selected by the State or States in which the tribe is located.” 64 Fed. Reg. 35714, 35756 (July 1, 1999). The net result is that any tribe in the GCVTC transport region may apply for implementation in whole or in part of §308 or §309.

The same policy and technical work products developed by the WRAP to assist states developing and submitting implementation plans under §308 or §309 will be designed to assist the tribes in the same way. Tribal concerns are being addressed at every level within WRAP work product development process. Tribal and state implementation plan needs may be different. As these differences are identified, the specifications for work products and the corresponding development plans will be updated to reflect this improved understanding of unique tribal needs.

To ensure that tribal technical and policy needs are addressed, the active participation of tribal representatives on all Forums has been and will continue to be sought and encouraged. The National Tribal Environmental Council (NTEC) is responsible for coordinating tribal participation in the WRAP and receives grant funding from EPA for this purpose. As not all tribes have the resources or expertise to participate in the WRAP, NTEC provides tribes with analyses and synopses of issues emanating from the WRAP forums and work groups and from sources outside the WRAP. NTEC also facilitates consensus building within the tribal caucus. The Institute for Tribal Environmental Professionals (ITEP) at Northern Arizona University also provides assistance and staff resources to the Tribal Data Development Working Group to address a key tribal need – the acquisition of data necessary to make informed policy decisions.

Finally, it should be noted that the WRAP organizational structure provides several checkpoints for tribal input. First and foremost, the WRAP has established equal representation for tribes and states within its management structure, including a tribal Co-Chair of the WRAP. Key positions are also reserved for tribal representatives on all standing committees, forums, work groups, and the Public Advisory Board. Public workshops for WRAP work products ensure that the broader tribal community has an opportunity for input prior to WRAP action.

IV. WRAP Organization and Structure

In September 1997, the Western Regional Air Partnership (WRAP) was formed, with a membership including states and tribes both within and outside of the GCVTC region. The WRAP established oversight committees and forums which were charged with developing work plans to implement the GCVTC recommendations.

1. Membership

The WRAP membership currently includes the Governor or his/her designee from twelve states (Arizona, Colorado, Idaho, Montana, New Mexico, North Dakota, Oregon, Utah, Washington, Wyoming, California and South Dakota) and ten tribes (Campo Band of Kumeyaay Indians, Cortina Indian Rancheria, Hopi Tribe, Hualapai Nation of the Grand Canyon, Nez Perce Tribe, Northern Cheyenne Tribe, Pueblo of Acoma, Pueblo of San Felipe, Confederated Tribes of Salish and Kootenai, and Shoshone-Bannock Tribes of Fort Hall) from across the West. The WRAP membership also includes the U.S. Secretary of the Interior, the U.S. Secretary of Agriculture and the Administrator of the U.S. EPA or their designees. EPA is a non-voting member.

2. Charter and Bylaws

The WRAP Charter and Bylaws set forth the basic operating goals, principles and operating procedures and are posted on the WRAP website at wrapair.org.

3. WRAP Organization

The WRAP is composed of several forums, committees, and work groups, all of which include participation from the WRAP membership (states, tribes, and federal agencies) and interested stakeholders (industry, environmental groups, etc.).

4. Coordinating Group

The Coordinating Group is made up of the co-chairs of the IOC, TOC, International Projects Committee, Communications Committee, and the Northern Air Managers Committee. The WRAP may adjust membership of the Group to ensure balanced representation. The Group oversees development and coordination of the strategic work plans of the WRAP, promotes collaborative work relationships among committees and forums to avoid duplication and maximize productivity, makes interim appointments to committees between WRAP meetings, provides administrative leadership to carry out the activities of the work plan, helps identify process problems, budget needs and financial planning, and may make recommendations to the WRAP.

5. Communications Committee

The Communications Committee addresses communication within the components of the WRAP as well as outreach and education of the public and interested groups on air quality issues.

6. Technical Oversight Committee (TOC) and Initiatives Oversight Committee (IOC)

The IOC provides general oversight for the coordination and development of air quality strategies necessary to promote the implementation of federal visibility rules. The TOC provides general oversight of the technical activities of the WRAP. IOC and TOC members are representatives from the tribes, states, federal government, environmental community and industrial community.

Presently, there are eleven forums/working groups. The IOC oversees forums on Pollution Prevention, Market Trading, Mobile Sources and Sources In and Near Class I Areas. The TOC oversees forums on Research and Development, Emissions, Air Quality Modeling, and Ambient Monitoring and Reporting, and the Tribal Data Development Work Group. The Fire Emissions Joint Forum and the Economic Analysis Forum are overseen by both the IOC and the TOC, as they address both technical and policy issues.

Forums and work groups are established by the IOC and TOC to conduct the specific work of the WRAP.

7. Stakeholder Involvement

The WRAP includes participation from industry, environmental groups and any other affected parties. The following categories of representatives are regularly considered for membership in committees, groups and forums:

- Industry
- Mobile Sources
- Tribal Governments
- Local Governments
- General Public
- Small Business (including “green industry”)
- Federal Government
- State Governments
- Academia
- Environmental Groups

Committee and forum members are expected to maintain full communications with their agencies and constituent groups. Forum and committee members are responsible for establishing mechanisms that will ensure this communications occurs. These mechanisms may involve working through trade groups, state and tribal organizations such as the Western States Air Resource Council (WESTAR Council) and the National Tribal Environmental Council (NTEC), and intra- and inter-agency forums.

V. Project Management

Setting Priorities

The WRAP members establish the strategic direction of the organization, setting overall priorities for action. Once the WRAP agrees on a direction, issues are further developed and priorities refined by the following process:

- The WRAP identifies issues and requests that one or more oversight committees address them, or asks that the oversight committees develop issues and work plans for review by the WRAP.
- Oversight committees examine the management and technical issues associated with the strategic direction and identify the major deliverable components, skills required, and stakeholders most directly affected.
- Based on this examination, oversight committees may refer issues to existing forums or work groups, or may create forums and work groups to generate the deliverables. Oversight committees appoint co-chairs of forums and work groups, and work with each forum's co-chairs to develop a written charge including objectives, expectations, and time frames for deliverables.
- Co-chairs of forums and work groups appoint members, taking into consideration stakeholder balance and the charge from the oversight committee or committees.
- Each forum and work group is responsible for developing a detailed work plan to meet the work product and process guidance from its oversight committee or committees. They issue bi-monthly reports to their oversight committees; these reports are posted on the Web site.
- Oversight committees review and approve detailed work plans to ensure that all WRAP time lines and process needs are addressed.
- Depending on the nature of the process, each forum and work group works with its oversight committee or committees to resolve deadline or budgetary conflicts that may arise in the plan development process.
- The Coordinating Group manages general work, ensures budgetary consistency and coordination among the different groups and the overall direction of the WRAP.

Reconciling Conflicts

If an issue arises on which a forum or work group cannot reach consensus, the issue is referred to the oversight committee(s). If the oversight committee(s) can reach consensus on the issue, that decision is referred to the forum or work group for integration with the forum or work group's decisions on other issues. If the oversight committee(s) cannot reach consensus, the issue may be referred to the WRAP for resolution, or it may be referred back to the forum for further debate.

When conflicts over priorities and budgets cannot be resolved by the individual forum, work group or committee, the Coordinating Group will recommend a resolution. The Coordinating Group's recommendation will be based on the policy direction from the WRAP, the work tasks required to accomplish that direction, and consultation with the forums, work groups and committees. Where major changes in directions or deliverables are required, the Coordinating Group will seek the approval of the WRAP prior to directing such changes.

Outreach and Peer Review

The WRAP Communications Manual sets forth the process for reviewing work products and policy decisions. At each stage of review, relevant materials will be available on the WRAP Web site, and comments will be solicited; funding for outreach is found in the budget for the WRAP Communications Committee.

Work products must be presented to the appropriate oversight committees before being presented to the WRAP. The oversight committees may provide feedback to the forum or work group; the forum or work group has the responsibility to decide whether or not to make changes. Changes the forum or work group makes to the work product should be communicated to the oversight committee(s) so recommendations from these groups to the WRAP on the work product can be fully informed.

Policy work products are subject to public review through workshops and formal public comment periods; technical work products are reviewed by the Research and Development Forum, an independent contractor engaged to perform peer review, or by a specialty technical workshop on the work product. The forums and work groups are responsible for acknowledging public and peer reviewer feedback in the final presentation to the WRAP.

State and Tribal Coordination

In addition to the extensive and ongoing communication and coordination that occurs directly between the WRAP and its member states and tribes, the WRAP will work with the Western States Air Resources Council (WESTAR) and the National Tribal Environmental Council (NTEC) as important coordination points to ensure that state and tribal regional haze needs are clearly identified and addressed by the WRAP.

Administration and Staffing

Members of committees and forums perform much of the work of the WRAP. The Oversight Committees monitor forum and work group activities to ensure that work products are developed in a timely manner and that stakeholder participation remains representative, balanced, and fair. Contractors hired with these grant funds are relied upon to expand the resources of the WRAP. Committees and forums direct the work of contractors.

Support services to the line functions of the WRAP come from the Communications Committee, the National Tribal Environmental Council (NTEC) and the Western Governors' Association (WGA). The Communications Committee has developed a Communications Manual for the WRAP's internal and external communications, and assists committees and forums with outreach strategies for specific products and activities.

WGA and NTEC staff provide overall project management for the WRAP. WGA provides much of the basic logistical support for the WRAP, by assisting forums and committees with the preparation of RFPs and contracts, advertising RFPs, contract administration, processing travel reimbursement requests, preparing grant requests, grant fund management, arranging meeting space, reserving room blocks in hotels, setting up conference calls, responding to media inquiries, issuing press releases, responding to public inquiries, web site training and administration, processing requests to participate in the WRAP, and printing and distributing reports. Staff assistance includes providing a "sounding board" for stakeholders having concerns with the WRAP processes and relating concerns to forum co-chairs, oversight committees, committee co-chairs, facilitators, and the WRAP co-chairs.

During the period covered by the grant, WGA staff will be performing these activities. Additionally, WGA and NTEC staff routinely attend the meetings of the various committees and forums. WGA and NTEC jointly or separately perform tasks related to WRAP and serve as primary contact points by responding to media and public inquiries.

Under a separate EPA grant, NTEC assists tribal participation in the WRAP by arranging, facilitating, and providing reimbursement for tribal caucus meetings; providing coordination among tribal representatives of various forums; performing legal and policy analyses on WRAP issues, and securing contractor assistance for additional technical and policy analysis. This will include providing staff support to the Tribal Caucus.

As part of this work plan update, the WRAP is budgeting for staff support to several committees and forums. The first staff support function is related to assisting with the State Caucus of the Air Managers Committee. The second is to assist with technical coordination, with an emphasis on emission inventories. In addition, the WRAP has identified a need for staff support for the communications and outreach effort (Communications Committee), as well as for the work of various forums, including the Fire Emissions Joint Forum and the Market Trading Forum.

The WRAP will examine various options for ensuring staff support is available in these areas. Options include: 1) contracting with a WRAP state or tribe to dedicate staff support for a defined period of time; 2) hiring temporary staff at WGA, NTEC, or WESTAR; and/or 3) entering into an agreement with an independent contractor to provide the needed staff support. For the technical coordination/emission inventory specialist position, the WRAP will examine the option of amending the WRAP's Regional Modeling Center contract with UC Riverside to add another staff person to conduct this role.

- **WGA Staff Description**

Program Manager III. This line is for salary and benefits for the WRAP's Co-Project Manager (the National Tribal Environmental Council provides the other Co-Project Manager). This position provides and oversees other staff in the provision of administrative support to the WRAP, works with stakeholders to ensure the WRAP's processes are fair and equitable, and serves as a contact for the general public and press.

Program Manager I. This line is for salary and benefits for the individual who manages contracts and provides general financial management for the WRAP (paying bills and maintaining account information is covered by WGA's indirect charges).

Program Analyst II. This line is for salary and benefits for the individual that is WGA's public information lead. This individual provides support for the WRAP's public outreach and media programs.

- **Contract Management**

WGA and Forums jointly manage WRAP contracts. WGA, as the receiver of WRAP grants, retains the legal responsibility for signing and administering contracts and ensuring that work products are completed, these responsibilities are performed with input from forums and work groups. Forums and work groups may create balanced subgroups for purposes of contract management.

It is the responsibility of the forums and work groups and their respective oversight committees to develop the scope of work for each contract. All contracts are to be developed in accordance with the work programs approved by the WRAP and submitted to the EPA in support of grant requests. Once the scope of work has been properly developed and approved, it is transmitted to WGA. WGA is responsible for developing a Request for Proposals where necessary, or, where a contract will not be bid, developing an appropriate sole source justification. All RFPs are published in the Commerce Business daily and are issued for a minimum 30 days. Sample RFPs are available on request.

An appropriate review committee is established for the evaluation of RFPs. The review committee is responsible for scoring each of the RFPs. Scoring is documented and retained by WGA to substantiate any selection. Once the committee has agreed upon selection of a potential contractor, a memorandum of recommendation is prepared and transmitted to the Executive Director of WGA, along with any necessary supporting materials. It is the responsibility of the Executive Director to make the final contractor selection. The winning contractor and all losing bidders are then notified in writing of the decision of the Executive Director.

Subsequent to contractor selection, WGA staff and the appropriate forum, work group or committee negotiates a final contract with the winning bidder. All contracting is done in accordance with established federal guidelines. The standard contract form includes provisions for record keeping and audit requirements in accordance with OMB Circular 110.

It is the responsibility of the forum, work group or committee to monitor the work of the contractor and to determine whether all work requirements are being met. When a bill is received, WGA will examine the invoice to match invoice items to requirements outlined in the contract. WGA requires documentation from the contractor regarding hours spent and expenses incurred. WGA also requires copies of any deliverables prior to rendering payment. If there is any question regarding whether the contractor has met the requirements in the scope of work, it is negotiated between the contractor, WGA, and the appropriate co-chairs. Once it has been agreed that all work has been completed in accordance with the requirements of the contract, payment is rendered by WGA.

WGA is responsible for maintaining all records and does so in accordance with all federal requirements. This includes submittal of quarterly status reports to EPA. As noted in the previous section, NTEC lets contracts for work done in support of tribal participation. These contracts are funded by a grant separate from the general WRAP grant, and are subject to the requirements of the single audit act and related compliance supplements.

VI. Regional Haze Work Plan

This work plan guides development of work products consistent with the requirements of the regional haze rule. The table included as Appendix A provides a comprehensive summary of the projects to be funded through this grant, including a breakdown of how the FY99 and FY00 funds have been/will be spent.

Section 308 of the regional haze rule contains a general requirement for states to submit an implementation plan, with the option for tribes to also submit implementation plans, on a schedule dependent on the attainment status of the proposed fine particulate standard and participation in regional planning groups. Section 309 of the rule allows states in the GCVTC transport region to submit an implementation plan conforming with the recommendations of the GCVTC if the state elects to submit the plan by December 2003. Such plans would satisfy the state's obligation for planning for the 16 Class I areas included in the jurisdiction of the GCVTC.

The states would then be allowed to defer submittal of implementation plans for the other non-§309 areas until 2008. For the purpose of this plan document CFR 51.308 will be referred to as the National Rule or §308, and CFR 51.309 will be referred to as the GCVTC Rule or §309.

The implementation plan requirements for the National Rule and the GCVTC Rule are similar. Both include:

- A requirement to address regional haze best available retrofit technology (BART), with the option to use a regional market based program to assure the emission reductions if the emission reductions can be demonstrated to make greater reasonable progress than source specific BART,
- A monitoring plan,
- An emission tracking and reporting requirement,
- Periodic implementation plan revisions,
- A projection of visibility conditions anticipated from the long-term strategy to the end of the planning period (2018), which requires the consolidation of region-wide emission inventories and forecasts for use in an air quality model.
- For each of the 16 Class I areas considered by the GCVTC, §309(d)(2) requires that states and tribes project expected visibility conditions through the year 2018 for the most impaired and least impaired days based on the implementation of all the GCVTC recommendations. This will require an estimate of natural conditions. For each Class-I area other than the 16 GCVTC Class I areas, the rule requires the determination of a reasonable progress goal and an analysis of the rate of improvement needed to achieve the goal in 60 years.

The GCVTC implementation plans require components for the monitoring, and potentially management of, emissions in clean air corridors.

In preparing the Work Plan, the assumption was made that several of the WRAP members will elect to submit implementation plans by the end of 2003 consistent with the requirements of §309. It is anticipated that periodically thereafter, states and tribes will submit implementation plans under §308 or update plans under §309 on a schedule consistent with their regulatory requirements and infrastructure capabilities. In order to satisfy these needs, this plan will evolve as WRAP members establish specific dates for the submission of their implementation plans. This Work Plan has been established to accommodate this anticipated staggered schedule.

It is important to support the WRAP members submitting implementation plans to meet the requirements under either §308 or §309. WRAP policy analysis forums will develop and deliver control strategy components to address the major source categories identified in the regional haze rule for §309 and for other areas defined by the WRAP. These deliverables will be in the form of generic strategies or model rules that states and tribes may use in developing their implementation plans.

The WRAP technical forums will develop products to assist the states and tribes in discharging their responsibilities. These will include:

- A comprehensive integrated visibility database and trends report including estimates of the current, baseline, and natural conditions for all Class-I areas,
- A regional emission information system, including emissions inventory, tracking, and forecasting, to integrate emissions from all source areas and categories that may influence visibility in the Class I areas,
- An air quality modeling system that will operate with the regional emission information system to project necessary visibility metrics for all Class-I areas,
- Periodic updates to the comprehensive integrated visibility database and trends report including updated estimates of the current, baseline and natural conditions for all Class I areas,
- Periodic updates to the regional emission information system databases and techniques, to ensure that the actual emissions and control strategies of states and tribes contained in their long-term strategies are reflected in the integrated regional emission inventory used for visibility projections,
- Periodic updates to the air quality modeling system and air quality projections for all Class I areas reflecting implementation plan long-term strategies on a schedule to support state and tribal demonstration, reporting, and monitoring obligations,
- Periodic updates to the assessment system databases reflect updated emissions and air quality modeling.

A. Market Trading Forum

Section 309 of the regional haze rule contains a requirement for states and tribes to develop emission milestones for SO₂ and a backstop regional cap-and-trade program for SO₂ that would be implemented if the milestones were not met through voluntary means. The regional haze rule divides the development of this program into two parts. The first requirement was the submittal of an Annex to the Grand Canyon Visibility Transport Commission's report to provide the detailed structure of the backstop program. The Annex was completed and submitted to the EPA on September 29, 2000. The Market Trading Forum has now shifted its work to the second phase which is to provide additional documentation so that states and tribes can include the backstop trading program into SIPs and TIPs that are due by December 31, 2003.

States and tribes also have the option to develop SIPs and TIPs under section 308 of the regional haze rule using different strategies to improve visibility at western Class I areas.

Implementation Plans under section 308 of the rule will be due sometime between 2004 and 2008, depending on the circumstances in each area.

Summary of MTF Workplan

The tasks under development by the MTF fall into three main categories. First, the MTF needs to provide additional information regarding stationary sources so that states and tribes can better understand the impact of implementing the SO₂ milestones and backstop trading program. States and tribes will need to make a decision in the near future to either develop an implementation plan under section 309 of the regional haze rule as outlined in the Annex, or to develop a new set of strategies under section 308 of the rule. The information is needed within the next six months because most states must make their decision by the spring of 2002. Tribes will need to make a similar decision, but are not subject to the same deadlines as the states.

1. Critical Mass. The Annex was developed based on a regional analysis, assuming that all 9 states and 211 tribes in the Grand Canyon Visibility Transport Region would participate in the program. However, states and tribes have the option to develop implementation plans using a different set of strategies. The benefits of the program, including cost-savings and overall visibility improvement, will change depending on the number of states and tribes that choose to participate in the program. Contract support is needed to conduct economic modeling to determine the critical mass that is needed to meet the goals of this program. The proposed modeling will build on the economic analysis that has already been done for the Annex milestones.
2. RA BART/Geographic Enhancements. The SO₂ milestones were developed to meet the requirements for regional haze visibility impairment through a backstop trading program, in lieu of case-by-case BART determinations. Prior to 2018 when BART will be satisfied for all eligible BART sources participating in the 309 backstop regional trading program, there may be "hot spot" issues, where individual sources or a small group of sources uniquely affect visibility at a Class I area. The visibility rule addresses this issue through the application of BART due to reasonable attribution. The interaction

between these two requirements in the context of a trading program in lieu of BART is referred to as geographic enhancements. The MTF needs to better define geographic enhancements, and to review the work that is underway by the Northern Air Managers Committee to develop a process guideline for determining reasonable attribution.

3. Other Class I Areas. The Modeling Forum is working on a model of visibility improvements due to the section 309 strategies. Preliminary results of the model are expected near the beginning of 2002, with final results in the summer of 2002. The MTF will need to review the results of the modeling to determine whether “greater reasonable progress than BART” has been met for all Class I Areas.

4. Allocations. The Annex outlines the methodology that will be used to allocate SO₂ allowances to individual sources if the backstop trading program is triggered. Additional detail is needed to help states and tribes understand the impacts of the program in their area. Contract support is needed to develop estimates of floor level allocations for all non-utility sources in the transport region. The contractor will identify the current level of control for non-utilities, and will estimate the floor level for each of the source categories using the floor level technologies that have been developed by the MTF.

The second category of tasks are those that states and tribes will need to develop their SIPs and TIPs in order to meet the December 31, 2003 deadline. These tasks will generally need to be completed by mid-2002 to meet the rulemaking schedules of the various states and tribes.

1. Model Rule and MOU. The Annex contained a draft model rule and MOU among states and tribes participating in the Section 309 program that outline the details of the backstop trading program as well as the interaction that will occur between states and tribes in the region. Contract support is needed to review and finalize the draft model rule and MOU to ensure that these documents will work properly within the framework of existing state and tribal regulations.

2. Monitoring Protocols. Contract support is needed to develop detailed monitoring protocols for all source categories that are subject to the backstop trading program to ensure that the monitoring is equivalent to the requirements of 40 CFR Part 75. The contract support will provide technical information regarding monitoring options, and will also provide facilitation support to help the MTF work with individual source categories to develop protocols that will work for specific emission units.

The final category of tasks are those that are needed as documentation for the 2003 SIPs or to help states and tribes develop implementation plans under section 308 of the regional haze rule. Some of these tasks that do not need to be started during the next FY but need to be included in the overall WRAP planning process. Other tasks will require several years to complete and are therefore included in the near-term priorities of the MTF.

1. NO_x and PM. The states and tribes are required to submit a report that assesses emission control strategies for stationary source NO_x and PM and the degree of visibility improvement that would result from such strategies. The report must also evaluate and discuss the need to establish milestones for NO_x and PM to avoid any net increase in these pollutants from stationary sources within the Grand Canyon visibility transport region, and to support future development and implementation of a multi-pollutant, and possibly multi-source market-based program. Contract support is needed to obtain information about major sources of NO_x and PM in the WRAP region, including the current level of control technology that is in place. Contract support is also needed to develop a list of options for reducing emissions of NO_x and PM from specific source categories and to analyze the degree of visibility improvement that could be expected if those options were implemented.
2. Development of an Allowance and emissions tracking system (after program is triggered). If the backstop trading program is triggered, an allowance and emissions tracking system will be needed to determine compliance with the program. The system itself does not need to be created at this time, but a framework is needed that a contractor could then use to build a system in the future. The acid rain ATS and ETS could be used as the starting point for the system, or a new system could be designed to meet the needs of the WRAP.
3. The MTF needs to evaluate the impacts of a possible expansion of the regional SO_2 milestones and backstop trading program to WRAP states and tribes that are outside of the Grand Canyon visibility transport region.
4. The MTF needs to provide background information regarding stationary sources for states and tribes as they develop SIPs and TIPs under section 308 of the regional haze rule.

B. Fire Emissions Joint Forum

The Fire Emissions Joint Forum (FEJF) created a comprehensive Workplan in Spring 1999 which has been previously submitted to EPA and is available on the WRAP web site. It was approved by the Forum and subsequently by the WRAP later that year. All current work and future work of the FEJF is designed to meet the Workplan objectives, all of which are directly linked to either the Grand Canyon Visibility Transport Commission (GCVTC) Recommendations for Fire or the Regional Haze Rule (RHR). Assessment of the Forum Workplan Tasks by WESTAR and the WRAP Planning Committee has kept the work on point with regard to insuring that the state and tribal needs for meeting either Section 309 or 308 RHR requirements will be met.

The FEJF is addressing both policy and technical issues concerning smoke effects that are caused by wildland and agricultural fire on public, tribal and private lands. The Workplan is quite broad with two basic concepts which are that all types of fire are to be addressed (wildfire, prescribed fire on wildlands and agricultural lands, wildland fire use/prescribed natural fire) and that consideration of smoke effects includes not only regional haze but also public health and nuisance. The Forum has chosen to accomplish its work through the establishment of Task Teams which may be comprised of Forum Members and interested stakeholders. To date this approach has led to successful completion of several workplan tasks with ongoing work to be funded through this planning cycle.

The Forum has collected information on smoke management programs across the WRAP region, as well as across the country, in order to build progressive recommendations on the elements of Basic and Enhanced Smoke Management Programs (ESMP). Two task teams are addressing this RHR need with a deadline of 6/02 for structural program requirements followed by specific details shortly thereafter. The budget projected to complete this assignment is \$100,000.

This same group is also addressing a requirement of the RHR and GCVTC to create an annual emissions goal methodology for states and tribes which is envisioned as a key element of an ESMP. This potentially controversial task is funded at \$25,000. As the GCVTC was concerned about the cost of such future programs, the teams are simultaneously assessing cooperative funding options for the recommended smoke management programs with a budget of \$25,000 set aside to complete this task. This step is extremely important as there are a variety of potentially affected stakeholders ranging from private land-holders to tribes to state air quality regulatory agencies that will need to participate in future smoke management programs.

As part of the work of these task teams, there has been a concentrated effort to work with the TDDWG to collect information on tribal smoke management programs. The establishment of a clearinghouse of the collected information is budgeted at \$5,000 and is a way to provide further support to the development of future tribal programs.

The GCVTC and RHR were specific in the citation of the need to assess the potential use of alternatives to prescribed burning on both wildlands and agricultural lands. The potential use of alternatives is important to the establishment of annual emissions goals. Alternatives can reduce

fire emissions and can contribute to the demonstration of reasonable progress towards the 2064 natural condition goal. The Forum currently has a contract that is assessing the potential for alternatives to burning on agricultural lands that should be complete late December of 2001. The companion study on wildlands has a budget of \$150,000 and should be completed by Spring 2002. The outputs of these efforts will fit into both the types of smoke management programs and the emissions tracking systems under development by the Forum.

In order to assess the effects of fire sources on current and future visibility, there is a need to develop emissions inventories for fire. Work is underway developing 1996 inventories for these source types which have not been previously inventoried to the level of sophistication needed to drive current model simulations. These 1996 inventories with documentation will be complete by late 2001. There is a simultaneous effort that is underway to develop and augment future fire emission scenarios based on previous work conducted by the GCVTC. The GCVTC and RHR noted the need to further develop these types of inventories. The 2018 projections are on a fast track with completion estimated late in 2001. The budget to support the fire emission inventory work is \$150,000 and will provide the information needed by states and tribes to show effects of various control strategies such as enhanced smoke management programs and the annual emissions goals.

As the emissions inventory is being developed, the current state of emissions estimation systems across the WRAP region for the different fire source types is being learned. The Forum will use this knowledge along with further assessment of regional emissions estimation needs to help develop a recommended WRAP approach for tracking fire emissions. The need for emissions tracking is key to the recent Policy for Categorizing Fire Emissions and will be important for smoke management programs as well as the demonstration of reasonable progress for fire sources. This tracking of fire emissions for all fire sources is a key element of the GCVTC Recommendations and the RHR. This task is budgeted for \$70,000 and will develop the tools needed for states and tribes to effectively address the RHR requirements and incorporate them into their respective implementation plan.

An additional requirement of the GCVTC Recommendations is the assessment of the relationship between the use of prescribed fire and the potential for wildfire in terms of emissions and effects on air quality. This task has a budget of \$15,000 and will assess what tools are available for quantifying this relationship and their applicability to the other recommendations being developed by the Forum.

The need to address the air quality effects of planned and operational prescribed and managed fire operations on all land types was recognized by the GCVTC and in the RHR. The prescribed fires program assessment effort will create recommendations for how smoke effects should be addressed in planning efforts and on an operational basis for the WRAP Region. The effort has a budget of \$75,000. The current status of addressing smoke effects and guidance for burning entities is being assessed by contract and should be completed by early Spring of 2002. The results of that assessment and a joint workshop with WESTAR on the topic will provide the basis for the recommendations from the Forum to the WRAP. These recommendations will address the requirements of the RHR and support state and tribal implementation plans.

C. Air Pollution Prevention Forum

Section 309(d) (8) of the Regional Haze Rule explicitly recognizes energy efficiency and renewable energy as air pollution prevention strategies. And in preparing Regional Haze SIPs, each state that follows the 309 path must describe programs relied on to achieve the The Grand Canyon Visibility Transport Commission's (GCVTC) recommended goal that renewable energy supply 10 percent of the regional power needs by 2005 and 20 percent by 2015.

The goal itself is not enforceable, but as part of the Regional Haze SIP, EPA will require those states that chose the GCVTC Option to include a "...description of the programs relied on to achieve the Commission's renewable energy goal".

With regard to energy efficiency, however, the goals established by the rule are much less clear. The rule states only that a state's SIP must provide for programs to preserve and expand energy conservation efforts. But for both renewable energy and energy efficiency states that opt to follow the 309 path required to include projections of short and long-term:

- Emissions reduction
- Visibility Improvements,
- Cost Savings, and
- Secondary benefits.

The requirements to address the renewable energy 10/20 goal, provide for energy efficiency programs, and include short and long-term projections, are all options for inclusion in a 309 TIP, if a Tribe so chooses.

AP2 Forum Charter

To address the requirements of Section 309 (8) (d) the WRAP has charged the AP2 Forum to identify and recommend legislative actions, economic incentives and regulatory policies that states and tribes can adopt to increase use of renewable energy and energy efficiency and reduce haze causing emissions in the region.

Objectives

Our objective in conducting our investigation is to provide states and tribes with the policy and the analytical framework necessary to identify those economic incentives, legislative and regulatory actions states and tribes can adopt or (if already in place in those states) recognize for inclusion in their regional haze SIPs/TIPs to comply with the Pollution Prevention requirements of 309. To this end the AP2 Forum will:

- Examine market and institutional barriers,
- Identify economic incentives, legislative actions and regulatory policies that can overcome market barriers,
- Quantify emissions reductions economic impacts of the actions, and
- Recommend a portfolio of policies states and tribes can implement and include in their regional haze SIPs/TIPs.

Budget and Projects

1. WIEB Staffing : \$30,000, Start Date: September 1, 2001

Task: The day to day operations of the AP2 Forum are conducted by staff of the Western Interstate Energy Board who perform the following functions:

- Assist Co-Chairs in planning, administration, and management of forum activities.
- Organization and logistical coordination of meetings and conference calls. (Scheduling, briefing materials, invitations, letters etc.)
- Forum meeting summaries (Minutes, assignments, follow up, invitational travel)
- Responsible for coordinating preparation, editing, publishing and dissemination of forum reports.
- Liason with the WRAP/WGA, other Forums.
- Updating AP2 site on WRAP website

We anticipate four more Forum (or Forum Workgroup) meetings between now and when we submit our final report to the Initiatives Oversight Committee and WRAP in June 2002. WIEB staff will address logistical support for those meetings, the completion of the energy efficiency state report, modeling and quantification of emissions and economic analysis of renewable energy and policy recommendations, and integration of the renewable energy state report with the final energy efficiency state report.

Completion: June 30, 2002

2. Economic Modeling of Renewable Energy and Efficiency Policies

Budget: \$176,200; Start Date: September 17, 2001

Task: Using ICF's IPM model (engineering-economic capacity expansion and production cost model) and the REMI model the AP2 Forum will quantify the emissions and economic costs and benefits of renewable energy and energy efficiency measures recommended by the AP2 Forum for 3 different climatic zones in the West. (CA-S. Nev, Pacific NW, and Mountain West. In coordination with work being conducted by NAU on specific tribal renewables and energy efficiency recommendations, the ICF work will include a tribal component to the greatest extent possible at this time. As needed, tribal modeling work will be identified for future workplans. Specifically the ICF Integrated Planning Model and REMI modeling analysis of RE and EE will:

- Capture the costs of RE and EE programs to energy sector/cost of power, including:
 - ▶ Incremental capital costs
 - ▶ Production costs
 - ▶ Changes in wholesale electricity costs

- ▶ Changes in fuel production, consumption revenues
- ▶ Expenditures on energy efficiency programs by sector
- Estimate renewable and energy efficiency policy measures' contribution to emissions reductions.
- Estimate regional economy-wide impacts of energy efficiency and renewable energy policy measures on employment, gross regional product, and regional income.

Completion: February 5, 2002

3. Purchase of REMI Model License

Budget: \$25,000; Start Date: December 10, 2002

Completion of Task: January 10, 2002

4. Integration of State Renewable Energy and Energy Efficiency Reports

Budget: \$30,000; Start Date: February 12, 2002

Task: The Air Pollution Prevention Forum has prepared 3 extensive reports on the subjects of state renewable energy and energy efficiency policies. A fourth report will be published with the completion of the ICF/REMI economic modeling and analysis. The Tellus Institute will be hired to integrate the four documents into a single final report that will be forwarded to the Initiatives Oversight Committee and the WRAP.

Completion: May 15, 2002

5. Tribal Reports

5.a. Renewables Report:

Budget: Currently funded at \$50,000

Task: This project is currently contracted to Northern Arizona University (NAU). The project objective is to prepare a report for WRAP region tribes that recommends a package of policies and programs that, if implemented by tribes, will make significant progress towards meeting the GCVTC's 10/20 goals. This project addresses the unique needs of tribes as sovereign governments.

The Tribal Renewables Report meets the regional haze planning needs of tribes by:

1. Addressing the different requirements of the tribes as stated in the Regional Haze Rule. Tribes may implement visibility programs, or reasonably severable elements in the same manner as states. However, the independence of tribes means that a tribal visibility program is not dependent on strategies selected by the state or states in which the tribe is located.

2. Addressing the RHR requirements of SIPs and TIPs under section 309 to include a variety of information addressing renewable energy production and consumption, as well as an outline of the programs and policies that each state will rely on to work towards meeting the GCVTC' 10/20 goals.

A draft Tribal Renewables Report was completed in June 2001. A revised draft will be completed in September 2001. The project is scheduled to be completed by December 2001.

5.b Tribal Energy Efficiency Report:

Budget: Currently funded at \$73,667

Task: This project is currently funded and contracted to the same contractor and project contact for the renewables report. The project objective is to prepare a report for WRAP region tribes, building on the findings of the Tribal Renewables Report, that recommends a package of energy efficiency policies and programs that will meet the GCVTC's energy efficiency recommendations. The project also includes an economic analysis of the proposed energy efficiency programs, as well as peer review of both the tribal renewables and energy efficiency reports. NAU will also work with ICF on the AP2 Forum's contract to model the renewable energy and energy efficiency recommendations to the states, to ensure that tribes and tribal RE and EE recommendations are addressed to the greatest extent possible.

The Tribal Renewables Report meets the regional haze planning needs of tribes by:

1. Addressing the different requirements of the tribes as stated in the Regional Haze Rule. Tribes may implement visibility programs, or reasonably severable elements in the same manner as states. However, the independence of tribes means that a tribal visibility program is not dependent on strategies selected by the state or states in which the tribe is located.

2. Addressing the RHR requirements of SIPs and TIPs under section 309 to include a variety of information addressing energy efficiency programs and their benefits.

Work with ICF on modeling is in progress. Peer review of the Tribal RE Report took place during summer 2001. The draft Tribal Energy Efficiency Report and EE peer review will be completed in spring 2002. The project is scheduled to be completed in the summer of 2002.

Current AP2 Forum Work Products as Required for States Under the Regional Haze Rule and Areas Where Additional Work is Needed

Requirements Under Regional Haze Rule	AP2 Forum Work Product	Areas Where Additional Work is Needed
Section 51.309(d)(8)(i): An initial summary of all air pollution prevention programs currently in place.	Data presented in AP2 renewables report. Data was provided by the National Renewable Energy Laboratory. In the AP2 efficiency report or related SIP guidebook, data may need to be provided summarizing state energy efficiency programs currently in place.	Provide information as to how frequently the data relied upon is updated.
Section 51.309(d)(8)(i): An inventory of all renewable energy capacity and production in use or planned as of 2002 (expressed in megawatts and megawatt-hours).	Provided in the AP2 renewables report. Information derived from Repis database and EIA.	Provide information as to how frequently the data relied upon is updated.
Section 51.309(d)(8)(i): Total energy generation capacity and production for the state.	Provided in the AP2 renewables report. Information derived from Repis database and EIA.	Provide information as to how frequently the data relied upon is updated.
Section 51.309(d)(8)(i): Percent of total energy generation capacity and production that is derived from renewable energy.	Provided in the AP2 renewables report.	Provide information as to how frequently the data relied upon is updated.
Section 51.309(d)(8)(i): The state's anticipated contribution toward the 10/20 goals (based on the programs and policies each state relies on to achieve its renewable goals).	Information under this item must be developed by each state following its selection of a portfolio of programs which will be utilized to meet the 10/20 goals. It should be noted that Section 51.309(d)(8)(vi) requires that, to the extent that it is not feasible for a state to meet its contribution to the regional 10/20 goals, the state must identify in progress reports to EPA the measures implemented to achieve its contribution and an explanation as to why meeting the goals was not feasible.	Additional modeling work may be necessary to aid states in assessing anticipated contribution towards the 10/20 goals. To calculate each state's contribution to the regional 10/20 goals, a regional generation tracking system will be necessary to track renewable power. <u>Washington State has just received a grant from DOE to begin a regional effort to develop such a tracking system.</u>

<p>Section 51.309(d)(8)(ii): Programs which provide incentives that reward efforts that go beyond compliance and/or achieve early compliance with air pollution related requirements.</p>	<p>As discussed in the AP2 renewables report, the major program that would provide incentives that reward efforts to go beyond the 10/20 goals or to achieve the goals earlier than 2005/2015 would be a regional haze emissions cap-and-trade program.</p>	<p>The urgency of additional work will depend on the likelihood of the cap and trade system being triggered.</p>
<p>Section 51.309(d)(8)(iii): Programs to preserve and expand energy conservation efforts.</p>	<p>To be addressed in AP2 Forum’s energy efficiency recommendations. The Forum will recommend a series of “best practices” with regard to energy efficiency for states to consider. In developing their SIPs, states will need to select which efficiency practices or programs will be implemented.</p>	<p>Modeling work by ICF/Tellus has begun to quantify the impacts of such “best practices” and should be done by the end of the year. However, the work will not generate state-by-state data.</p>
<p>Section 51.309(d)(8)(iv): The identification of specific areas where renewable energy has the potential to supply power where it is now lacking and where renewable energy is most cost-effective.</p>	<p>The AP2 renewables report provides resource maps taken mainly from EPRI’s <i>1997 Renewable Energy Technology Characterizations</i>.</p>	<p>More specific information needed on a state-by-state basis of renewable energy resource potential?</p>
<p>Section 51.309(d)(8)(v): Projections of the short- and long-term emissions reductions, visibility improvements, cost savings, and secondary benefits associated with the renewable energy goals, energy efficiency and air pollution prevention activities.</p>	<p>The AP2 Forum has identified recommended renewable energy actions to meet the 10/20 goals and best practices in the area of energy efficiency. In August, ICF/Tellus were contracted to quantify the impacts of the recommendations and best practices. Modeling results are expected later this year.</p>	<p>The output from the ICF model will include tons of reduced emissions and economic benefits (via the REMI model). The emissions savings will be provided to another forum to translate into visibility improvement.</p> <p><i>[There are some differences of opinion as to the nature of the projections required by the phrase “secondary benefits,” as provided in Section 51.309(d)(8)(v) of the Regional Haze Rule. For instance, it is unclear whether projections should be included regarding economic development and job creation as a result of increasing the use of renewables.]</i></p>

<p>Section 51.309(d)(8)(vi): A description of the programs relied on to achieve the state's contribution toward the 10/20 goals and a demonstration of the progress made toward achievement of the renewable energy goals in the years 2003, 2008, 2013, and 2018. This description must include documentation of the potential for renewable energy resources, the percentage of renewable energy associated with new power generation projects implemented or planned and the renewable energy generation capacity and production.</p>	<p>Most of the programs that states may rely upon to make a contribution to the 10/20 goals are described in Section III of the AP2 renewables report. To date, there is little experience with many of these programs and it is therefore not feasible to make precise estimates of the future impacts of these programs on renewable energy generation and consumption. "Back-of-the-envelope" estimates of the potential cost and impact of these programs are discussed in the AP2 report. The ICF/Tellus modeling work will provide additional impact information. The impact of these programs will change over time as the cost of renewable energy declines as a result of technology improvements.</p>	<p>Regional cost and impact estimates will be provided in the ICF/Tellus modeling work.</p>
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D. Mobile Sources Joint Forum

Objective

The objective of the Mobile Source Forum (MSF) is to provide both technical support and policy direction, from stakeholders perspectives, to aid states and tribes in their development of the mobile source portion of regional haze SIPS/TIPs. The primary emphasis of the MSF has been to develop, with contractor, state and metropolitan planning organization assistance, the most accurate base and future years mobile source emission inventories (EI) for western states for use in assessing the impact of mobile sources on visibility impairment and for assessing the need for additional mobile source control strategies as required by the EPA regional haze rules. Tribal mobile source data gathering efforts are being coordinated through the Tribal Data Development Work Group.

The Forums efforts have focused on using the most current emission factor models such as MOBILE 6 and best available activity data and insuring that the methodology used produces consistent results among the states/tribes. Special efforts are being made to improve the accuracy of paved and unpaved road dust emission inventories based on the significant concern for the accuracy of this EI component expressed by the Grand Canyon Visibility Transport Commission and EPA Regional Haze Rule.

Project Descriptions

The Modeling Forum has determined a need to expand the visibility modeling effort to include emissions from states adjacent to the WRAP states. In order to provide a mobile source emission inventory for these states that is consistent with the inventory developed for the WRAP states, it is necessary to have the MSF's EI contractor complete an inventory for these states.

A major coordinated effort between the MSF, Research and Development Forum, Emission Inventory Forum, dust experts and EPA has been underway to develop an approach to improving the accuracy of dust emission inventories. From this work it is clear that more accurate information is needed regarding such factors as unpaved road vehicle miles traveled, silt content and moisture levels. A contract effort is needed to collect such information.

The MSF is in the process of developing a definition of "significant visibility impairment from mobile sources" to determine if emission budgets are needed for mobile sources and emission management strategies are needed for road dust per requirements of the Regional Haze Rule. It is anticipated that road dust, at least from areas in and near at least some Class I areas, will be found to be a significant contributor to visibility impairment even after improving the accuracy of the emission inventory. In order to provide recommendations as to necessary and appropriate road dust emission management strategies, as required by the Regional Haze Rule, in a timely manner for Section 309 SIP development purposes, it is necessary to contract for a compilation of such strategies prior to the "significance" determination.

It is also anticipated that major rules adopted by the EPA to reduce emissions from new onroad gasoline passenger vehicles and onroad heavy duty diesel vehicles will continue to reduce onroad emissions from mobile sources through 2018, the first regional haze SIP/TIP planning period. The only remaining major mobile source control strategies that might be considered or promoted by the WRAP include control of nonroad diesel engine emissions and control of VMT growth. Projecting potential visibility improvements from nonroad engine controls including retrofit programs and application of smart growth principals in a timely manner would be useful for both 308 and 309 SIP/TIPs.

Project Timing and Budgets

Projects to compile improved road dust activity factors (estimated \$ 85,000) and complete emission inventories for mobile sources in states adjacent to the WRAP (estimated \$25,000) need to be started immediately and completed around the end of the year in order to be usable in the 309 haze modeling effort.

Projects to identify necessary and appropriate road dust emission management strategies (estimated \$45,000) and other potential mobile source emission control strategies (estimated \$45,000) should begin near the end of the year and be completed in the spring of 2002.

E. Sources In and Near Class I Areas Forum

Emissions from within Class I areas contribute to impaired visibility. Transportation-related emissions and other emissions from energy use are of particular concern. Prescribed fire emissions are also a concern given the Federal land managers' ongoing efforts to restore natural fire cycles and preserve ecosystems. National Park Service (NPS) nationwide policy is to mitigate visibility impairment and other air quality effects from in-park sources by reducing emissions and incorporating sustainability concepts into all plans and management decisions. The NPS has already implemented several innovative approaches to pollution prevention and reduction in many parks in the Western Regional Air Partnership (WRAP) region, and intends to do more. These actions include in-park transportation systems (such as low-emission shuttles), conversion of park vehicle fleets to cleaner fuels, use of solar energy, increasing energy efficiency, and taking other steps at parks in the region. In addition to in-park emissions, emissions from sources near Class I areas contribute to visibility impairment. These local emission sources must also be addressed.

The Grand Canyon Visibility Transportation Commission (GCVTC) developed recommendations to address emissions from sources in and near Class I areas on the Colorado Plateau. The Emissions In and Near Class I Areas Forum (In and Near Forum) of the WRAP will help implement those recommendations by working with parks and local communities to develop and implement strategies to minimize emissions and the resulting visibility impacts. To that end, the In and Near Forum will complete two main tasks:

- Quantify emissions for selected parks in the WRAP region and gather information regarding pollution prevention and minimization activities in those parks; and
- Focus on one local gateway community to serve as a template as to how other gateway communities could deal with the near park issue, including a local emissions inventory to identify and quantify emission sources associated with a representative gateway community, and to identify local pollution prevention and minimization activities.

WRAP has obligated \$50k of previous funding to initiate work on the in-park microinventories. The In and Near Forum issued a Request for Proposals for this work, conducted contractor interviews, and in July 2000 selected UC-Riverside to begin this work. UC-Riverside conducted inventories for eight western parks. The In and Near Forum has received a draft report for the Zion NP and Petrified Forest NP inventories and expects the final reports for all eight parks by Spring 2002. In addition, the NPS has also obligated separate funding to initiate emission inventory work for other parks in the WRAP region. These inventories will include estimates of in-park stationary, mobile, and area emission sources; identify applicable federal, state, tribal, and/or local regulations and assess compliance; identify potential emission reduction strategies; and compare the in-park emission estimates to adjoining county and statewide totals.

The In and Near Forum will use the additional funding provided under this grant to conduct a demonstration project for a selected gateway community to serve as a template as to how other gateway communities could deal with near-park issues. The demonstration case study will include a workshop with tribes, town managers, county managers, local land use planners, park officials, and other participants to reach consensus on the best approach to deal with near-park issues. The target date for the workshop is November 2002, subject to available funding. A contractor will then prepare a report to document the discussions and recommendations made at the workshop. In conjunction with the case study, the In and Near Forum also intends to conduct a local inventory to identify and quantify emission sources associated with the selected gateway community, and to identify local pollution prevention and minimization activities.

F. Economic Analysis Forum

Background: The costs, and benefits of alternative strategies (choices) to achieve goals under the Clean Air Act(CAA), and its subsequent amendments, especially as they pertain to the Regional Haze Rule and its sets of associated compliance programs, must be identified, assessed, and finally set in a common framework so as to allow both informed and economically efficient decisions that balance the myriad and varied interests, and at times competing objectives of stakeholders. Two economic studies were completed to support the 1 Oct 2000 Annex submittal that set forth the basic “cap and marketing trading” program. Stakeholders, and especially the states and tribes now must decide in a relatively short time whether the 309 approach will serve them and their respective constituencies (many inclusive of the remaining stakeholders including both industry and environmental interests) better than a 308 approach in meeting their commitment(s) to the legal and regulatory requirements under the current CAA and its amendments. Moreover, each of the principal stakeholders will need to see a systematic and technically defensible assessment of the broad strategies to be adopted as part of any SIP and/or TIP process, be it 309 or 308 – that assessment identifying the projected economic impact both now and tomorrow, the tomorrow being many years into the future.

In addition to the two economic studies that supported the Annex submittal, there continues to be a number of on-going activities and studies that are addressing, in on form or another, economic issues – for example, demographic and economic forecasts from whence emission projections can be made, and the relative costs, regional impacts and resultant benefits of alternative pollution prevention strategies/programs that might be adopted as part of each state’s and/or tribe’s implementation plan (SIPs and TIPS). Notwithstanding these strong efforts at economic analyses, there will remain a number of subsequent (and other) tasks yet to be completed that many judge absolutely essential to both provide needed information on potential economic tradeoffs of a 309 (or 308) decision, and the economic impacts of either as the SIP and/or TIP process progresses through the staff, legislative and public venues before a final submittal to EPA.

Approach: Over the coming year, and extending into the following year, the efforts under the Economic Analysis FORUM and its associated contractor(s) support will focus on several key activities. These include (a) developing a detailed plan for the types of data, analytical tools and subsequent assessments that will be required to support the decision, and decision process on 309 opt in by each state/tribe; (b) a careful review of both past and on-going economic analyses products for possible use and/or extension in the above noted plan; (c) provision of guidance, and where possible analytical support to selected FORUMs as they complete their work on focused strategies to help meet the Regional Haze Rule requirements; (d) preparation of an aggregate economic impact analyses of the proposed sets of strategies, based upon individual FORUM products as well as the studies that supported the Annex submittal, that place all under common assumptions and views of the future; and (e) preparation of a set of briefing products that both explain the economic analyses undertaken by and for WRAP, with their specific application to any final submittals by the states and tribes as part of their SIPs and TIPS.

Work Plan: Continue discussions with the states and tribes on their requirements for economic analyses, the timeframe of those requirements, and the relative priorities of their expectations for assistance – whether that be guidance, review and interpretative help, analytical support, or analysis products themselves. Develop description of needed steps and tasks to meet those requirements and expectations. Include needed coordination and cooperation activities among other FORUMs. Identify critical points along support and product timeline, and options to meet those critical points.

Review of Existing Economic Products and On-going Analysis Activities: Identify all key assumptions underlying both the Annex economic studies, as well as the on-going analyses efforts within selected FORUMs – with emphasis on the work within the Market Trading, Air Pollution Prevention and Emissions Modeling FORUMs. Compare and suggest, where needed, reconciliation requirements of all major differences among demographic and economic forecasts contained within those products and efforts. Determine to what extent, and under what sets of uncertainty, that both past and on-going economic studies could be used in both the 309 decision process and in subsequent preparation of SIPs/TIPs. Special emphasis should be paid to the costs and impacts resulting from alternative strategies contained within each product, and its possible assignment to varying stakeholders and interests within the WRAP region as a whole and to its political entities.

Economic Guidance and Support: The type and level of effort will be determined in concert with each respective FORUM. Much of the activity here may be an inherent part of the review noted above, but may also significantly extend some of the economic analyses and subsequent application to the strategy tradeoffs being made as final products are being prepared. The relative cost and benefit positions of those being most impacted from those formulated strategies will be one focus of any analytical support provided to each FORUM. Consistency and currency of data, with identification of the more important assumptions influencing differing views of the future, will also be emphasized in the provided guidance and support thereby helping to ensure that both the strategies and their potential impacts are properly accounted for.

Aggregate Economic Analysis: Using existing, on-going and any required new analyses products, prepare an assessment of the potential costs, economic impacts and benefits of the principal strategies being developed as part of the 309 response to the RH rule. This assessment will be from a WRAP regional perspective, with sufficient detail to adapt to each state and tribe as appropriate within their respective SIP/TIP development process. Existing products include both past and current IPM, REMI, IAS and the RTP-prepared analyses prepared in support of the MTF, AP2 and EM FORUMs. Both published and the raw supporting data, as well as the more detailed analytical results from each model shall be included whenever possible. Any new analyses required to support either the global WRAP or the individual state/tribal adaptation of this aggregate economic product shall use those models (identified above) to generate the additional strategy tradeoff and impact information unless judged technically inadequate to support those additional requirements. Estimates of benefits should include not only the traditional health effects, but also other classes of impacts under the broader “welfare” measures attributable to general economic well being.

Briefing Products: These products will be constructed to support not only WRAP and its individual stakeholders need for information on and about all of the economic-related analysis products, but also the broader requirements of the general public for understanding of what are the principal impacts and tradeoffs of the varying strategies. Key within these products will be straight-forward interpretation of the significant results as they apply to each stakeholder, and careful discussion of the uncertainties – especially as to how they may influence both the direction and magnitude of future costs, impacts and benefits.

We see much of the first activity being realistically accomplished within the first month or so of the new calendar year. The next activities may run concurrently over a multiple month timeframe, with the fourth activity (aggregate assessment) being drafted during late fall and early winter of 2001. The fifth activity will likely be an on-going effort, with its timing dependent upon both availability of analysis products and the actual schedule of varying states and tribes as they proceed both through the 309 decision process and resultant SIP/TIP preparation.

G. Air Quality Modeling Forum

Forum / committee objectives:

The Air Quality Modeling Forum (AQMF) is charged with the responsibility to identify, evaluate the performance of, and apply mathematical air quality modeling planning tools which are used to quantify the effects of alternative emission management options upon the air quality of the western United States. The current focus is to provide modeling support for States and Tribes to prepare State and Tribal Implementation Plans (SIPs and TIPs) following the requirements of the 40CFR51.309 regional haze rules.

Description of projects:

Last winter, WRAP released two RFP's to assist with this modeling: one for creation of a WRAP Regional Modeling Center (RMC) and one for a "Jump-Start" contract to initialize the modeling. The RMC contract was awarded to the University of California at Riverside with Dr. Gail S. Tonneson leading their technical work and Environ (Ralph Morris) participating as a partner in the contract. The Jump-Start contract was awarded to MCNC-Environmental Programs in Research Triangle Park, NC, also with Environ (Ralph Morris) participating as a partner in the contract. Marc Houyoux of MCNC is the technical lead.

Both of these contracts are active and all of the models (SMOKE/REMSAD/CMAQ) are operational and the model evaluation studies have been started. Because of delays in receiving the necessary emission data bases, some cost overruns have occurred with the Jump-Start contract. Some of these delays occurred as a result of an unexpected late release of EPA's Mobile-6 program.

Projects for 2002 are proposed to provide additional support beyond that provided in the existing contracts. These include:

- Provide extended emissions processing (SMOKE) support from MCNC beyond the end of the current Jump-Start contract.
- Refinement of existing tools (SMOKE) for use by the Regional Modeling Center and for technology transfer to States/Tribes
- Development of better tools for technology transfer to States/Tribes
- Cost overruns caused by delays in implementing the Jump-Start contract.

How projects help meet the regional haze planning needs of States and Tribes:

These contracts not only provide for the contractors to complete the necessary modeling but also to provide training as a part of the necessary technology transfer of these models and data bases to the States and Tribes. States and Tribes are responsible for submitting their SIPs and TIPs and will need to fully understand the air quality analysis that was performed to provide support. Further, some States and Tribes will need to perform refined modeling prior to submitting their SIPs and TIPs. Thus, technology transfer is a key element of these projects.

Training plans at the Regional Modeling Center consist of "hands-on" training, lecture training, and internships. These will be geared for participants from both State and Tribal organizations. Special training for Tribal staff with more emphasis on interpretation is also included as a part of these plans.

SMOKE is a key processor for the work of the Regional Modeling Center and also will be used by States and Tribes for refinement of modeling for their areas. Several of the proposed projects provide additional support in this area.

Projected beginning and end dates of projects:

Element	Begin Time	End Time
Current Jump-Start Contract (with delays)	Feb 01	Mar 02
Current RMC Contract	Feb 01	Dec 02
Provide extended emissions processing (SMOKE) support from MCNC beyond the end of the current Jump-Start contract.	Jan 02	Dec 02
Refinement of existing tools (SMOKE) and development of better tools for technology transfer to States/Tribes	Jan 02	Dec 02
Cost overruns caused by delays in implementing the Jump-Start contract	Feb 01	Mar 02

CY 2002 Budget estimates:

Element	CY 2002 Estimate
Current RMC Contract	\$544,174*
Current Jump-Start Contract	\$0**
Provide extended emissions processing (SMOKE) support from MCNC beyond the end of the current Jump-Start contract.	\$40,000
Refinement of existing tools (SMOKE) and development of better tools for technology transfer to States/Tribes	\$55,200
Cost overruns caused by delays in implementing the Jump-Start contract	\$30,000
Total Budget:	\$669,374

* The original RMC contract budget also includes a budget of \$499,012 for CY 2001.

** The original Jump-Start contract has a total budget of \$199,559. This entire budget was planned for CY2001.

H. Emission Forum

The objective of the Emission Forum is to provide the WRAP with all emission information necessary to implement applicable provisions of the Federal Regional Haze Rule. This includes compiling Emission Inventories for the point and area source emission sectors, for the WRAP states and adjacent areas within the WRAP modeling domain. The Emission Forum will also collect Emission Inventory data from the Mobile Source Forum and the Fire Emissions Joint Forum, and combine that mobile and fire emissions information with point and area source data in order to provide a complete Inventory of all Emissions of visibility impairing pollutants necessary to analyze visibility impacts within the WRAP region. The Emission Forum will work closely with the Tribal Data Development Workgroup to assure compatibility of information coming from Tribal sources, and to minimize duplication of effort between these similar data collection efforts.

The Emission Forum will also provide forward (and backward) projections of any base year emissions data to look at potential visibility impacts at other times. The Emission Forum will compile Emission Inventory information annually, to facilitate tracking of various emission related commitments under the Regional Haze Rule, such as the Market Trading Stationary Source Milestones or Clean Air Corridors tracking.

In order to store and retrieve this emission information, and make it available to public and private users, the Emission Forum will develop a central database storage system for the WRAP, and select a location/institution to house this information. In order to assure the accuracy of any data stored in this central database, the Emission Forum will undertake Quality Assurance activities designed to identify and remove incorrect information from the compilations. Also to improve the quality of the WRAP emissions inventory information, the Emission Forum will conduct investigations into the appropriateness of activity data and emission factors that are used in the calculation of these Emission Inventories, and provide guidance to state, local and tribal air quality agencies for the protocol to be used in preparation of proper data for submittal to the WRAP regional database.

In order to insure the usefulness of the data to eventual users, the Emission Forum will work closely with other WRAP forums, such as the Modeling Forum and the Ambient Monitory & Reporting Forum, to provide information in proper format for quick incorporation into their respective areas of responsibility.

In the 2002 Emission Forum Budget Proposal, the forum is seeking \$30,000 for Quality Assurance of the 1996 Base Year Emission Inventory and the 2018 Emission Inventory projections that will be used to demonstrate "reasonable progress" towards the Regional Haze Rule visibility improvement goals. These activities will begin around the first of 2002, and would likely be completed within a few months after contracts are let.

In addition, the Emission Forum must compile a Year 2000 inventory of "major" stationary source SO₂ emissions, in order to compare against the 13% reduction projected by the Grand Canyon Visibility Transport Commission over the decade from 1990. \$10,000 is allotted for this

task, and it is expected that this effort will begin in the Fall of 2001, and most likely be completed before the end of that year.

The Emission Forum is requesting \$28,000 additional funds to supplement the 2001 carryover of \$52,000, in order to begin the development of the central WRAP emission inventory database system. To assure that this database is functional, the Emission Forum plans to move forward with a \$125,000 effort to develop guidelines for emission calculation protocol for the state, local and tribal agencies, from whom the WRAP intends to receive the majority of the Emission Inventory data used to populate the WRAP database. If these local/tribal governments provide data based on some exceptions to the calculation protocols, or if some of these agencies fail to provide necessary information to the WRAP, then the Emission Forum intends to have an alternative "fall back" methodology for filling the essential data gaps. \$50,000 of the requested funds are intended to be used to conduct workshops to state, local and tribal agencies, to provide them with training in the emission inventory compilation methods desired by the WRAP. All of this Database Development and Emission Inventory Guidance effort is expected to begin near the first of 2002, and the forum would expect that this compilation, storage and retrieval system would be functional by the end of that year.

Regarding improvements to the Emission Inventory accuracy, the Emission Forum is requesting \$75,000 funding to conduct research in to proper temporal and spatial allocation of emissions data, and in speciation of particulate and organic compounds into specific visibility impairing components. Also the Emission Forum perceives major holes the current technology for assessing emissions of ammonia and volatile organic compounds, so \$10,000 of the 2002 Budget request would go towards improvements in defining these pollutants. This Emission Inventory Improvement work would probably begin after more pressing issues of Database Development and Emission Inventory Guidance were under way; probably towards the middle of 2002. Some results could be expected towards the end of that year, but this type of Emission Inventory Improvement is a long term issue that will likely require long term effort and additional funding in future years.

Finally, the Emission Forum has identified a major hole in the 1996 Base Year Inventory and 2018 Emission Projections, for "dust" particulate emissions. This is due to imprecise calculation methods and unreliable activity data currently available, and due to uncertainty in the role that dust emissions play in regional transport visibility assessment. The WRAP Technical Oversight Committee noted this problem as early as 2000, and convened an Expert Panel to evaluate the options available to correct this problem. The initial report describing the problem was produced in late 2000, and the Expert Panel was reconvened to develop more specific recommendations for remedy in mid-2001. Now the Mobile Source Forum is charged with producing a dust emission inventory for paved and unpaved roads, while the Emission Forum is charged with producing a similar emission inventory for wind erosion and off-road mobile sources of dust. Meanwhile, in order to implement the Regional Haze Rule, the Research & Development Forum must undertake a program to define the difference between anthropogenic and "natural dust". The Emission Forum Budget request seeks \$125,000 to implement the Expert Panel recommendations and compile our portion of the dust emissions inventory. This effort is critical to producing §309 SIP's/TIP's, and therefore it is anticipated this work would begin in the Fall of 2001. The completion target would be early in 2002, so that the information could be used in §309 modeling efforts.

I. Tribal Data Development Work Group

Under the Regional Haze Rule, and in accordance with the Tribal Authority Rule, tribes are not required to implement any particular provisions of the Rule, but have the option to submit visibility implementation plans or “reasonably severable” elements thereof. Tribes are encouraged to participate in Regional Planning Organizations, and EPA committed to supporting tribal involvement. Tribes within the 9-state GCVTC transport region have the option of submitting 308 or 309 implementations plan, independently of the state in which the tribe is located.

For many issues, more information regarding air quality and emissions on tribal lands is needed in order for tribes to participate in a meaningful way in the WRAP decisions. For example, tribes need to know what sources on tribal lands might be affected by the Annex trading program if it is enhanced to include trading of NO_x and PM. Thus the mission of the TDDWG is to assist the tribes and the WRAP in acquiring the information, and building the tribal capacity, which will be needed for tribes to make informed decisions regarding whether and how to implement visibility TIPS.

Although SIP deadlines do not apply, EPA encourages tribes to coordinate any TIP submittals with states to the extent practicable. Given the less-advanced state of tribal air program development, this means there is a need to develop tribal data capacity as quickly as possible in order to achieve consistency with the 2003 and 2008 time frames.

Workplan Summary

The TDDWG Work Plan contains three Phases, each comprising multiple tasks. The first Phase was the Work Groups organization and start-up, completed in 1999 with the only cost being travel expenses. The Second Phase was to assess the nature of the “tribal data gap” and devise a strategy for “filling” it. This was performed with contractual assistance from the Institute for Tribal Environmental Professionals (ITEP), and recently completed. The resulting report is available on the WRAP web site and hard copies are currently being distributed to WRAP, EPA, and tribal staff. The third Phase is Data Collection and Archiving, which is the object of the current year’s funding.

Several issues critical to bridging the tribal air quality data gap were identified through the TDDWG report:

- A serious limitation on environmental program resources among the WRAP tribes.
- A high demand for new and continuing tribal air quality programs in the WRAP region.
- A high demand to develop tribal emissions inventories.
- A shortage of tribal staff to deal with air quality issues.

These issues are documented and quantified in greater detail in the report. In order to accomplish Phase III (Data Collection and Archiving) in light of these factors, ITEP is proposing the following tasks, consistent with the TDDWG plan:

Task 1: Completion of Emissions Inventory Software. Coordinate the completion of the emission inventory software for tribes in the WRAP Region. The software will be an EI module compatible with ITEP's existing tribal environmental database, will be developed in conjunction with the WRAP EI Forum and other Forums, and will include GIS functions. The majority of the cost for this task would be for technical subcontractors to be selected by RFP.

Task 2: Quality Assurance/Quality Control. Develop a written QA/QC plan for data collection and data management associated with both the underlying database and emission inventory software.

Task 3: Pilot Test of EI Software. Field test the IE Software and QA/QC plan on three selected tribes, obtain feedback, and work with contractors to modify software as necessary. It is anticipated that software training will be extended to a broader group of tribes under the subsequent year's grant.

Task 4: Compilation of Existing Data. Maintain databases of existing EI's, GIS information, and contact information, and generate reports as directed by the TDDWG or requested by other WRAP Forums.

In addition to these Phase III tasks, ITEP will perform formatting and quality assurance on as many as possible of the 28 tribal emissions inventories identified in the assessment phase, in order to make the EI's compatible with EPA's National Emission Inventory.

J. Research and Development Forum

Secondary Organic Aerosols and Differentiation of Elemental Carbon

Background

Analysis of IMPROVE particle collected in the WRAP domain has shown that organic material and light absorbing carbon are responsible for about 15 to 38% and about 5 to 15%, respectively, of the average reconstructed aerosol light extinction. Organic material can account for about 30 to 50% of the fine mass on average and the bulk of the fine mass on specific days. Biogenic sources, industrial processes, vehicle exhaust, and vegetative burning are known to emit primary organic particulates (including elemental carbon) or include organic gases that have the potential convert to particulate.

Because of the relatively large contribution to visibility impairment of these constituents, it is important that WRAP be able to conduct an apportionment of sources of organic material and elemental carbon in order to effectively assess the causes of visibility impairment and identify appropriate control measures. However, there is much uncertainty that hampers such apportionment. For example,

- What are the chemical composition and emission rate of these compounds? What is the adequacy of source sampling information?
- What are the transport and transformation characteristics of these gases? What processes controls their conversion to particles? Are they hygroscopic?
- Can we distinguish elemental carbon from vegetative burning from elemental carbon from industrial processes or vehicle exhausts?
- What is the adequacy of ambient monitoring capabilities?

Suggested Approach

WRAP will sponsor a critical review conducted by an independent professional organization to develop a report on the state-of-science the emissions, atmospheric chemistry, and ambient monitoring of organic material (including elemental carbon) in remote areas. The report should include:

- a literature review,
- a qualitative and, where possible, a quantitative estimation of uncertainties in the emissions, atmospheric chemistry, and ambient monitoring of organic material (including elemental carbon),
- a sensitivity analysis of these uncertainties to estimate their relative importance, and
- a research agenda and possible assessment activities (long and short term) needed to reduce these uncertainties.

K. Ambient Monitoring and Reporting Forum

The Ambient Monitoring and Reporting Forum's plans for doing assessment of monitoring data is to have a web-based ambient monitoring database, to do Annual Data Reports, and on a five year basis to sponsor a major report currently referred to as "Causes of Haze" report.

The Forum has also reserved \$30,000 in its budget to address additional technical analysis needs related to the "Clean Air Corridor" requirements of Section 309 of the Regional Haze Rule.

Ambient Monitoring Database

The rationale for the web database is to make available the ambient monitoring data that is the basis for implementing the Regional Haze Rule to all who have an interest in the most convenient way possible. The web site is currently operational as a result of work done through the previous funding cycle, and its capabilities are expected to expand over the next several years as new data summary and display tools are designed and implemented. The description of the database below is taken from the SOW for the Request for Proposals that resulted in a WRAP contract with CIRA (the Colorado State University Cooperative Institute for Research in the Atmosphere). Most of these features in this description are or will be a part of the database at <http://vista.cira.colostate.edu/wrap/>

Database Specifications:

- Internet web-access by up to 5 simultaneous users.
- Ability to accommodate all routinely collected (i.e. weekly or more frequent) long-term (i.e. more than 1 year) aerosol, optical and meteorological data collected at U.S. (and near-U.S. border) monitoring sites west of the 100th meridian since 1980 including:
 - IMPROVE & IMPROVE protocol aerosol and optical data,
 - NWS meteorological surface and upper air data and RAWS surface data,
 - State & local government air quality and associated meteorological data, and
 - All other publicly available quality-assured sources of data that meet the criteria above.
- Capable of supplying data subset files determined by any combination of user-selected site, region, time periods, or measured parameters.
- Capable of calculating and storing prescribed indices from measurement data (e.g. aerosol extinction coefficient from aerosol species measurements).
- Capable of providing measurement descriptors (e.g. monitoring method & instrumentation used, probe height, sample start time & duration, uncertainty and detection limits, etc.) for each data record.
- Capable of tracking and reporting to the system manager information concerning user identification and data requested to improve future service and to allow user notification if data are subsequently found to be erroneous.
- Software and the data archive must be compatible with readily available computer systems (e.g. Access©)
- Software and data archive must be portable so that at anytime it could be replicated elsewhere if desired.

- Hardware, software and data archive resulting from this work is the property of WGA.
- Capable of displaying data in simple graphical formats (e.g. single or multiple parameter time plots, maps, or scatter plots) for user selected data subsets. [**Optional Capability**]¹
- Capable of calculating simple statistics (e.g. mean, standard deviation, various percentiles including median, 20th and 80th) for user selected data subsets. [**Optional Capability**]
- Capable of calculating more complex statistics (e.g. correlation coefficient, and simple and multiple linear regression coefficients and confidence limits). [**Optional Capability**]

Annual Data Reports

The following description of the Annual Data Report is taken from the Scope of Work used to solicit a proposal from CIRA to implement the annual data report. The rationale for the form and content of the report that it calls for is that state, tribes, FLMs and any others who have data summarization and simple analysis requirements would be able to conveniently assemble their own customized report using the web-available components of this annually prepared electronic report. This work has begun with funding through the previous grant.

Scope of Work

The WRAP Annual Ambient Data Report will be published electronically once per year and distributed through the WRAP ambient database web site. It will feature data summaries for the previous calendar year as well as some simple trends to promote comparison of current year's data with that from previous years. The overall approach will be to develop a core set of analysis software that generates standard statistical and graphical summaries of the data for every year's annual report. Over the years the software that generates these material will be enhanced so that the scope of the reports will evolve over the years. Feedback from users of the report will be a primary source of information for the direction of this evolution. The report will consist primarily of the standard output from this software and will have only a modest amount of year-specific commentary describing some of the prominent features of these automated products. [The planned WRAP Causes of Haze Report is the primary data interpretation report that will be prepared on an every five-year schedule.]

The report will feature summaries of data that are representative of the visibility-protected class I areas (i.e. IMPROVE and some IMPROVE Protocol sites in the WRAP area), but will also use some data gathered elsewhere to the extent that it helps to understand the conditions associated with the class I area haze levels (e.g. meteorological data). The report should be prepared in such a way that it provides a good overview of visibility conditions for the WRAP area as a whole, sub-regions of similar data characteristics, and individual class I areas. In addition to looking at annual and seasonal summaries, the report will feature summaries of the 20% best and worst aerosol calculated extinction days because of their central role in the Regional Haze Rule. The processed statistical summary information that was used to generate the tabular and graphical output for the annual report should also be downloadable by the users.

¹ System architecture must be compatible with these features, which may be added as funds permit.

One of the primary uses of the report will be to select subsets of the summary material that can be reformatted by users such as states and tribes who wish to prepare their own custom reports by cutting and pasting from the Annual Report. For this reason and because of the expected substantial amount of output in this report (i.e. regional maps plus graphs and tables for all sites), it is essential that the report be searchable by site or group of sites, and by data summary or display approach.

Retrospective summary report – A one time only report of data preceding January 2000 using the tools developed as described above in numbers 2 and 3 will be generated for all of the current sites that have complete (all 4 IMPROVE channels) aerosol speciation multi-year data prior to January 2000.

The remainder of this scope of work is a description of the various sections of the report including suggested standard statistical and graphical summaries.

Report Contents and Organization:

1. Background section
 - a. Text describing the objectives and approach of the report
 - b. Text describing the structure and uses of the report
 - c. Map of WRAP area with various monitoring sites cross-referenced to a table of sites and class I areas they represent
 - d. References to sites, monitoring, and data processing meta-files and other web site data and tools that can be used to better understand material presented in this report
2. WRAP-regional maps (contours with values shown) and site-specific summary tables and pie diagrams for annual and quarterly (i.e. by calendar quarters) mean values
 - a. Brief introductory text and figure and table captions (including aerosol extinction algorithms) for the following
 - b. Fine and coarse mass concentrations
 - c. Fine mass species concentrations and fractions of total calculated mass
 - d. Aerosol calculated extinction – total and by each component amounts and fractions
 - e. Aerosol calculated haze levels in deciview
3. Best and worst 20% calculated extinction days for each site
 - a. Brief introductory text and figure and table captions for the following
 - b. Stacked bar plots of extinction contributions across the year (i.e. those of Debbie Miller)
 - c. Contour maps of best and worst day deciview values & aerosol species contributions to extinction
 - d. Truth table of sites verse sample dates indicating best and worst days so regions and seasons of common best and worst can be identified
 - e. Meteorological conditions corresponding to the most common best and worst days
 - i. HISPLIT trajectories (or other method) to show flow,
 - ii. Other meteorological descriptors that might be helpful like precipitation, position with respect to pressure features, temperature, humidity, etc.

- iii. This would be limited to about 10 each best and worst most common days use as examples – readers encouraged to do more of the same for their favorite days and locations
- f. Year-to-year haze trends (deciview) and components of extinction trends [Ultimately we want this section to contain trends analysis of the 5-year averages as required by the Regional Haze Rule.]

Causes of Haze Report

A description of the Causes of Haze Report is shown below. It describes the concepts of both the Annual Data Reports and the Causes of Visibility Impairment Reports at that time. While the concept for the Causes report have not changed, a much more detailed Scope of Work is required as part of a Request for Proposal to do this work. The SOW will be prepared by December 2001 in expectation of selection of a contractor by next summer. As of the last WRAP technical meeting, a discussion of the magnitude of the effort envisioned for the Causes report described it requiring as much as 2 years to accomplish and costing from a quarter to half a million dollars per five-year report.

Data Interpretation and reporting:

This task includes data displays, summaries and interpretation. Aerosol and optical data displays and summaries include development of graphs, statistical summary tables and maps to show spatial distribution. Other information that may be useful in understanding the data such as climate variations and anomalous events (e.g. volcanoes and fires) will be included whenever possible in text accompanying the data displays. These will be documented in an “Annual Monitoring Data Report”.

On a less frequent basis (every 3 to 5 years) a report on the “Causes of Visibility Impairment” will include as much as can be estimated using monitoring data concerning the aerosol species and source categories that contribute to haze. These reports will also document the use of spatial and meteorological analysis methods to estimate the impacts from outside the WRAP region. To the extent assessments of monitoring data to estimate the natural contributions to haze, this will also be documented in these reports.

Some of the methods required to conduct assessment used in the Causes of Visibility Impairment report are non-standard and should be refined and evaluated by a broad group of technical experts. These include methods to estimate natural background, calculate extinction from aerosol data, and define the sub regions with similar haze characteristics.

Monitoring data should be used to test the reasonableness of our knowledge and understanding of the entire air quality system. For example, are the emission rates by pollutant species roughly consistent with the ambient aerosol species? Do the air quality models agree generally with the monitored aerosol species and visibility data? Is the measured and aerosol reconstructed extinction coefficient data similar? These types of closure assessments are important methods to either build confidence or identify problems that must be addressed.

L. Air Managers Committee

The Northern Air Managers (NAM) Committee was formed at the March '99 annual meeting of the WRAP in Portland, Oregon. The formation of this committee grew out of concern by some WRAP members that the work of the WRAP forums at that time was focused primarily at developing strategies and policies to address the Class I areas on the Colorado Plateau. The NAM purpose, then, was to insure that strategies and policies were also developed by the WRAP for jurisdictions not directly involved in implementing the recommendations of the Grand Canyon Visibility Transport Commission.

The NAM has continuously reviewed the ongoing work of the WRAP forums and at a May 3, 2001 meeting in Tempe, AZ concluded that the work of the WRAP, and in particular the current focus of the oversight committees, the IOC and TOC, is to the issues affecting the entire WRAP region and further that a third group within the WRAP focusing on those same issues is a redundant effort we cannot afford. At the same time we concluded that there are issues affecting Air Managers, state and tribal, that need a discussion forum that currently does not exist anywhere in the WRAP organizational structure. In particular, we felt there needs to be an opportunity within the WRAP process for state and tribal air managers to discuss issues that may have arisen out of Tribal Caucuses or meetings of the WESTAR air directors that can be resolved or coordinated prior to involving the WRAP Board. A group that focuses on the issues related to the transition of the broad WRAP regional efforts to specific state and tribal plans including issues related to SIP/TIP approvability issues with an effort that involves coordination between states and tribes in 15 western states, 3 EPA Regional Offices, and EPA HQ is also envisioned. There are other equally valid functions for such a group.

Consequently, the NAM proposed to the WRAP Board at the May 24, 2001 meeting at the Pueblo of Acoma that we reform the NAM as the State and Tribal Air Managers Committee to include State Air Directors (or Senior Programmatic staff concerned with SIP issues) and Senior Tribal Representatives from the entire WRAP region. Our charge from the Board was to survey States and Tribes in the WRAP region to determine the level of interest and commitment, develop the membership, identify the statement of purpose, and to coordinate and integrate the work plan with the co-chairs of the IOC and TOC to insure against duplication of effort.

Conceptually, a mechanism is needed that allows a more effective involvement by Air Managers regionwide. This involvement must include direct staff support for the State and Tribal caucuses whose function would be to closely follow the work of the various committees and forums and prepare status reports that summarize for the air managers, particularly those not intimately involved in the process, the negotiations and issues and to explain the tradeoffs and agreements reached. This mechanism also allows a vehicle for technical or policy issues of concern from the State and Tribal caucuses to be brought forward for resolution by the air managers group as a whole to be presented as unified feedback to the appropriate WRAP forum or oversight committee.

In anticipation of formal acceptance by the WRAP, this funding proposal includes a \$110,000 which would primarily be directed at obtaining the necessary full time staff support for the state caucus, with funding for the tribal caucus included in the NTEC grant. The work plan also calls for a \$50,000 contingency fund to be managed by the Air Managers Committee.

M. Communications Committee

The Communications Committee's role is to convey accurate and timely information to WRAP stakeholders, including the public and all participants, about the goals, activities and proposals of the WRAP, its committees, forums and working groups.

The WRAP's chief communication media is the Web site, www.wrapair.org. All materials developed for the WRAP are posted on the site, including meeting notices, minutes, research results, working documents, drafts, and final documents. In addition, there are links to related sites, including federal, tribal and state agencies, industries, environmental groups and others who have information relevant to regional haze and air quality issues. The site offers the opportunity for public comments directly to WRAP when documents are ready for public review.

The Web site is managed by a subcommittee of the Communications Committee that works directly with the Webmaster and with WRAP committees and forums to ensure that the site fulfills the WRAP goal of a completely open process.

The Communications Committee provides a team of liaisons for each of the oversight committees and their forums. The goal of the liaisons is to assist the forums and committee in ensuring that their agendas and decisions are posted to the Web site, in recognizing opportunities for public outreach, in assisting in designing and carrying out outreach plans, and in assisting them in ensuring that appropriate materials are available in user-friendly format.

Late in the year 2000, the Communications Committee began establishing a WRAP Speakers Bureau to educate the public about regional haze and the work of the WRAP, so that citizens are better prepared to participate in development of state and tribal implementation plans. Through a contract with Trenton West, more than 5000 civic and opinion leader organizations, trade associations, tribal organizations, and chambers of commerce in WRAP states have been solicited to see if they would be interested in having a WRAP speaker, and about 200 have responded positively. More than 30 potential speakers were trained during the May 2001 meetings of the WRAP and the Communications Committee, and they will be scheduled to make presentations as the opportunities are scheduled. Each speaker will distribute appropriate handouts for each meeting, and will solicit further speaking opportunities. The primary message to be conveyed in the presentations is that the WRAP is a broad based organization of governments, industries, environmental and other interest groups, that the WRAP makes decisions by consensus, and that the WRAP welcomes support and participation from everyone.

The presentation vehicle is the WRAP slide show. It has evolved through several editions and provides education about visibility and regional haze as well as conveys the WRAP message defined above. So far, both script and graphics have been provided by volunteer effort. However, as more technical findings and policy issues reach readiness for public comment and discussion, more frequent revisions and quick turnaround will be needed. In addition, the Communications Committee plans a Spanish-language script, as well as availability in other

formats such as Power Point and video tapes. These needs require the quick turnaround capabilities of a professional firm and thus, more financial support.

The latest project of the Communications Committee is an e-newsletter, to be titled “WRAP Sheet” and produced every other month or so. The first issue will be out in October and distributed to all WRAP participants and interested parties. It is intended to be a brief (one page) summary of WRAP activities with links to documents for those who want more information.

Finally, the Communications Committee works with the forums and committees when public comment is sought. The range of outreach activities may include conducting a single meeting advertised throughout the WRAP region, or conducting at least one meeting in every affected state. The Communications Committee works with WRAP volunteers in each state to ensure that the meeting site is appropriately equipped, that handouts are available and that the host or chairperson is well briefed. The Committee also works with the committee or forum responsible for the issue to summarize comments and respond to them, and to distribute the summary of comments and responses to all who submitted comments.