



2017 Annual WRAP Workplan

June 12, 2017

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I. Executive Summary of 2017 Activities

The 2017 Annual WRAP Workplan describes the topics, tasks, associated projects, and objectives for the WRAP Technical Steering Committee (TSC) and Work Groups to address in implementing the five goals laid out in the [WRAP Strategic Plan and Vision Statement](#) adopted by the WRAP Board on March 9, 2015.

To assist in focusing development of the Annual WRAP Workplan, the WRAP Board established near-term strategic objectives in February 2016. The table below lists these strategic objectives and identifies 2016 WRAP Workplan accomplishments and goals for the 2017 WRAP Workplan:

WRAP Near-Term Strategic Objective	Progress
Create and operate the TSC and topical Work Groups: accomplished in 2016.	Accomplished in 2016. Ongoing operations for 2017.
Create stable, sufficient funding for staff to support WRAP, organizational activities, and enable participation by all member agencies.	Accomplished for 2016. Critical needs for staff support and essential organizational activities in place for 2017. No non-staff travel funding available. Workplan begins to identify funding resource needs for 2017 and 2018.
Approve and utilize the WRAP Workplan to measure and track WRAP activities.	Accomplished for 2016. Ongoing for 2017.
Design and bring the Regional Technical Center (RTC) on-line.	Regional Technical Operations Working Group formed in 2016, developed a 2017 Work Group Workplan, and is set up to begin RTC work in 2017.
Continue implementation of the March 2015 WRAP Strategic Plan and Vision Statement.	Accomplished for 2016. Ongoing for 2017.

The 2017 WRAP Workplan builds from the WRAP functional structure and five topical Work Groups established in the 2016 Workplan and identifies near-term tasks for the TSC and each Work Group for 2017. Sections A-F below provide an overview of these tasks. Part II of the 2017 WRAP Workplan contains a tabular listing of the deliverables, funding sources, and budget. A description of the WRAP organizational structure is found in Appendix A. The complete description of the TSC, approved by the WRAP Board in 2015, is found in Appendix B. Appendices C-G contain the detailed Workplans for each Work Group.

A. Implement and Manage Coordination: Technical Steering Committee

The [Technical Steering Committee](#) (TSC) organizes, directs, and coordinates WRAP Work Groups and project activities. The TSC holds the lead responsibility for the WRAP Workplan, including progress reporting and budget tracking for the Board.

In 2017, the TSC will:

1. Oversee finalization of the 2017 calendar year annual workplan and budget for Board approval. All WRAP Work Groups' tasks and activities, as well as WRAP projects are to be documented in the annual workplan.
2. Coordinate among and provide oversight for the activities conducted under grants, cooperative agreements, and other Board-authorized WRAP projects.
3. Provide monthly status updates to WRAP Board during monthly WRAP meetings of Work Group progress and the activities conducted under grants, cooperative agreements and other Board-authorized WRAP projects.

4. Provide oversight, direction and coordination for the Work Groups and staff, and their projects and tasks by:
 - a. Working with the Board-approved Work Group Co-Chairs to complete Work Group memberships;
 - b. Working with the WRAP Work Groups on development and finalization of their individual Work Group Workplans;
 - c. Establishing monthly status reports, with Work Groups and WRAP project leads reporting progress to the TSC during monthly TSC meetings;
 - d. Ensuring periodic interaction with the Work Groups' Chairs and members and with the contractors operating any projects; and
 - e. Developing the 2018 Annual WRAP Workplan and reviewing the associated annual Work Group Workplans, budgets, projects and deliverables.
5. Coordinate with WESTAR committees and work groups to ensure activities conducted in WRAP projects, under the auspices of the TSC and WRAP Work Groups, provide needed support.
6. Maximize coordination within WRAP and leverage work of other related partner organizations through outreach, hosting and attending technical conferences and producing white papers to network with other organizations with common interests and needs.
7. Post WRAP Board-approved Annual WRAP Workplan and status reports of the WRAP Work Groups and WRAP projects to the WRAP website.

B. Support Technical and Planning Analysis for Regional Haze State Implementation Plans (SIPs)

I. Support Technical and Planning Analysis for Regional Haze State Implementation Plans (SIPs)

Changes to the Regional Haze Rule (RHR), published as final and effective in the Federal Register on January 10, 2017, require states to prepare and submit Regional Haze State Implementation Plans (RH SIPs) to the U.S. EPA no later than July 2021. The RH SIPs are plans to continue improvement in visibility in the 118 Class I areas of the WESTAR-WRAP region for the second planning period ending in 2028. Regional Haze SIP implementation guidance is expected from the U.S. EPA in final form in mid-2017. There are elements in the RHR, which require regional planning and interstate coordination and consultation, as well as consultation with the Federal Land Managers (FLMs) and affected Tribal Nations in the western U.S., including Alaska and Hawaii.

The purpose of the Regional Haze Planning Work Group (RHPWG) is to prepare the framework to support regional planning for the 15 western states, so that needed elements will be available for RH SIP submissions, to meet the July 2021 deadline. Regional Haze SIP preparation is a multi-year effort and must incorporate time for the required consultation and public review process. Because some member states require additional lead-time for legislative approval of SIPs, the RHPWG will develop this framework with phased deliverables, beginning in 2017 and continuing through the first quarter of 2020. Therefore, the tasks and deliverables for the 2017 WRAP Work Plan are based on prioritized scheduling of RH SIP preparation requirements, which will continue for three to four years. The RHPWG may also need to develop additional tasks associated with rule changes and implementation guidance, and identify planning tasks for which additional funding must be sought.

Despite the absence of SIP implementation guidance at the time of this writing, the RHR does spell out the basic SIP requirements with which to start planning. Also, WESTAR previously prepared a document entitled "WESTAR Regional Haze 2018 SIP Update Plan," dated April 2, 2014, which describes a scheduled set of tasks and deliverables needed for production of the RH SIPs for the second planning period. When updated, the WESTAR document will provide a guide for all the states to work together as needed, based on experiences

from the first planning period. There are two challenges: developing additional tasks associated with rule changes, and planning tasks for which funding must be sought.

The RHPWG will proceed with identifying and prioritizing SIP preparation tasks and deliverables, and identifying possible resources, pending clarifying guidance from US EPA. General RH SIP preparation includes analyzing IMPROVE monitoring data to determine visibility trends; coordinating inventories for each state, tribe and federally managed area for modeling input; analyzing emissions trends and source categories to identify potential control targets; differentiating anthropogenic and natural visibility impacts; modeling for baseline and future years in order to develop reasonable progress goals for each of the 118 western Class I areas; consultation with FLMS, states, and tribes throughout the process; and special studies as needed to further these overarching responsibilities. Critical to the successful preparation of RH SIPs is continued update and maintenance of the WRAP Technical Support System (WRAP TSS) which stores the publicly accessible planning data; and utilization of the Fire Emission Tracking System (FETS), California's Prescribed Fire Incident Reporting System (PFIRS), and the federal INCIWeb for identifying smoke events. Special studies might address administrative issues such as SIP preparation training, and changing emissions and controls for western source categories, such as the full range of oil and gas activities; electrical/industrial power generation; and international and interstate goods movement. All of these known and potential RH SIP preparation needs underscore the importance of integrating the activities of the different WRAP Work Groups.

The Regional Haze Planning Work Group activities, pending clarification of guidance and resources for planning analysis, requires IMPROVE monitoring data analysis to determine recent visibility trends and compare to baseline visibility conditions. Regional modeling and analysis will identify current emission conditions and the visibility effects of those, as well as estimate future scenarios and the effectiveness of potential additional controls. This analysis will also be used as states set their reasonable progress goals at each Class I area for the next progress period. The 2014 National Emissions Inventory (NEI)-based data with western regional improvements, hosted at the [Intermountain West Data Warehouse](#) (IWDW), will provide the basis for the emissions that are used in the regional modeling. Additional inventory efforts will be conducted as the states identify sectors that need refinement to better reflect actual conditions in the west. Emissions will be projected to reflect the 2028 milestone year. The 2017 Workplan also recognizes that Alaska and Hawaii are outside the regional modeling domain and require additional support. (See Appendix C)

C. Promote Understanding of Role of Fire and Smoke in Regional and Local Air Quality Plans

Both natural, unplanned wildfires and long-standing practices of planned, prescribed fire are important air pollution sources in the Western United States. For wildfire, the length of the fire season, and the duration and intensity of individual fires are increasing due to the build-up of natural fuels after years of public policy for restricting wildfire spread, and a warming climate. With a better understanding of the role of natural fire in maintaining the health of natural landscapes, public policy is evolving to balance the need for natural fires with the need for protection of human infrastructure and public health, through application of prescribed fire. Additionally, climate change results in altered weather patterns, shifts in the types and composition of natural landscape communities, and increased threats from biological pests on weakened and transitioning ecosystems. Periodic and sustained drought and pressure to expand human communities into the urban-wildland interface heighten the importance of understanding wildfire in the western United States. In recognition of the increasing contributions of wildfire smoke, in frequency and duration, to ambient air quality, the western states have formed cooperative tracking systems that are the technical basis for improved understanding of smoke from uncontrolled wildfires. This regional interstate cooperation supports preparation of State Implementation Plans (SIPs) for Regional Haze and criteria pollutants.

The Fire and Smoke Work Group will focus on analysis and planning activities related to improve activity data to support emissions inventories for fire and smoke emissions, begin scoping work to assess present and range of future year contributions of natural sources such as fire, undertake evaluation of Smoke Management Programs, survey and compile information about Exceptional Events assessment efforts, review the treatment of fire and smoke emissions in modeling studies, and improve coordination between state, tribal, and federal

agencies. Several of these activities involve close coordination with other WRAP Work Groups as described in the FSWG Workplan (see Appendix D).

D. Promote Understanding of Role of Oil and Gas in Regional and Local Air Quality Plans

The Intermountain Region and other portions of the WESTAR-WRAP region are especially impacted by exploration and production emissions from the oil and gas industry, and the West more broadly by emissions from the transport and use of those fuels. NAAQS exceedances during winter in production regions of Utah and Wyoming have demonstrated localized effects, while the contributions from exploration and production in the wider region on summer ozone is still being assessed. In addition, this sector must be considered for Regional Haze planning. Studies currently point to improvements in the emissions inventory as being one of the most needed products to improve performance of the air quality models. Current projects and funding opportunities make improvements in these areas likely in the 2016-17 timeframe. This is a rapidly changing sector due to variations in commodity prices, technology innovations, and emerging regulatory programs. The [Intermountain West Data Warehouse – Western Air Quality Study](#) (IWDW-WAQS) discussed in the Regional Technical Operations section below, has a particular focus on Oil and Gas energy development and associated impacts. The IWDW-WAQS efforts can be significantly leveraged for the Oil and Gas studies described next, and could be expanded geographically as resources and interest allow. The IWDW also hosts the National Oil & Gas Emissions Committee’s [Information Repository](#), which stores and allows access to information of interest to state air agencies, EPA, and others about Oil and Gas activity and emissions data, and supporting information across the U.S.

The Oil and Gas Work Group will focus on analysis and planning activities related to improve activity data to support emissions inventories for oil and gas emissions, and begin scoping work to assess the scope of both the present, and the range of future year emissions management programs by the variety of regulatory jurisdictions within the WESTAR-WRAP region, by agency. The OGWG will coordinate among state, tribal, local, and federal member agencies’ Oil & Gas programs, including review of modeling, monitoring, and control program assessment studies for Oil & Gas emissions. Several of these activities involve close coordination with other WRAP Work Groups as described in the OGWG Workplan (see Appendix E).

E. Provide Regional Technical Capabilities

The WRAP Workplan set up topical Work Groups including the Regional Technical Operations Work Group (RTOWG). Since its inception in the WRAP Strategic Plan and Vision Statement, the mission statement for RTOWG is to, “Provide a forum for regional collaboration on technical and planning topics of common interest to the members”. Over the past several years, various efforts by regional, federal, state, and local groups have developed infrastructure upon which the RTOWG can effectively build a forum for regional collaboration for technical analysis and planning. Some of the platforms that exist within the WRAP region include the Intermountain West Data Warehouse (IWDW), the Air Information Report for Public Access and Community Tracking (NW-Airquest and AIRPACT), and various state and local State Implementation Plan (SIP) analysis, special studies such as FRAPPE/Discovery AQ, UBAQS and Four Corners Study. The IWDW and AIRPACT platforms are readily adaptable for air quality planning purposes for the NAAQS, Regional Haze, and other programs, pending available resources and coordination with sponsoring agencies.

The Regional Technical Operations Work Group will focus on regional analysis in support of planning activities related to emissions and modeling for regional haze, ozone, PM, and other indicators’ background and regional transport, sensitivity and other analyses of emissions data focused on the western U.S., and perform and leverage modeling, data analysis, and contribution assessment studies. Work will include investigation of “background ozone” impacts to western U.S. locations, coordination and collaboration with other WRAP member-sponsored regional air quality modeling groups including IWDW, NW-AIRQUEST, EPA-OAQPS, BAAQMD, and other state agencies doing regional ozone modeling, providing guidance on more complete and uniform model performance evaluations (MPEs), and developing and implementing a protocol to use the IWDW-WAQS capabilities as discussed above to be the WRAP Regional Technical Center. Several of these

activities involve close coordination with other WRAP Work Groups as described in the RTOWG Workplan (see Appendix F).

F. Support Development of Tribal Air Quality Capacity and Capability

There are 480 federally recognized Tribes within the 15 states that comprise the Western Regional Air Partnership (WRAP) area of interest. Many of these, 242, are in the state of Alaska, while the remaining Tribes (238) are spread throughout the Environmental Protection Agency (EPA) Regions 8, 9, the lower three states of 10 and New Mexico in Region 6. There are at least 61 Tribal air quality programs in the WRAP area, excluding those in Alaska. WRAP currently has 23 active member tribes.

EPA Region	Number of Tribes	Number Tribes with Air Quality Programs ¹
6 New Mexico	21	2
8	27	14
9	148	30
10	42	
10 Alaska	242	15

¹ Based on the 2016 NTAA State of Tribal Air Quality Report. Highest number of Tribes monitoring or conducting Emissions Inventories

Each Tribal air quality program encompasses unique needs and requires specific emphasis to meet their goals.

There are however, certain common themes that weave them together including, but not limited to:

1. Staff (capacity) – many programs have one or two people to address the complexities of air quality. Some Tribes experience turnover in positions that tend to keep them at a lower level of performance compared to long-term stable programs.
2. Funding – Most tribal air programs are funded by EPA Clean Air Act (CAA) 103, 105, Direct Implementation Tribal Cooperative Agreements (DITCA), or Indian General Assistance Grant (IGAP) grant programs. IGAP and 103 grants are used to build capacity while DITCA and 105 grants are awarded to programs that have built their capacity and capability to operate long-term.
3. Training (capability) – New personnel to Tribal air programs may not always possess the basic knowledge or experience needed to manage the program. Opportunities to expand skills are available to Tribal professional, from several sources specific to Tribes and are imperative to building capacity and capability.

By virtue of numbers and geographic spread a large amount of variability exists in the needs and goals of Tribal air programs. To capture how WRAP can help meet these needs the TDWG will first undertake data gathering on the size, complexity, and scope of tribal air needs in the WRAP states. After that initial effort the workgroup will address how to provide services and help solve Tribal needs. (See Appendix G)

II. Deliverables and Proposed Budget

Section II provides information in a Gantt chart and series of tables that itemize work tasks expected to be undertaken throughout the remainder of 2017 by the WRAP Technical Steering Committee and the five Work Groups; a schedule for the development of the annual work plan; a table of the prioritized work tasks grouped by thematic categories such as gap filling, data collection & analysis, etc.; and, finally a high-level budget for 2017 and 2018 including an estimate of in-kind contributions by staff from state, federal, tribal, and local agencies. Please note that table II.A is currently in draft form with considerably more detail listed for TSC deliverables. In part, this is a reflection of the amount of time that the TSC has been meeting and formulating plans and tasks for organizing the WRAP technical work for 2017. For more detail on individual work tasks and deliverables for each of the work groups please see Appendices C-G. In each individual work group plan technical, analytical, and administrative tasks have been identified in draft form. It is anticipated that by when the final draft of the work plan is completed all of the work groups will have a complete listing of identified work tasks for 2017 and, in many cases, for the period beyond 2017.

A. Proposed Deliverables by TSC and Work Groups

	Deliverable	Source	Funding	Timeline
TSC	Oversee finalization of the 2017 calendar year annual workplan and budget for Board approval. All WRAP Work Groups' tasks and activities, as well as WRAP projects are to be documented in the annual workplan.	TSC 2017 Workplan Sub-group; approval by TSC.	In-kind	April 2017
	Coordinate among and provide oversight for the activities conducted under grants, cooperative agreements, and other Board-authorized WRAP projects. Provide monthly status updates to WRAP Board during monthly WRAP meetings of Work Group progress and the activities conducted under grants, cooperative agreements and other Board-authorized WRAP projects. Provide coordination for the Work Groups and staff, and their projects and tasks. Ensuring periodic interaction with the Work Groups' Chairs and members and with the contractors operating any projects	TSC, WRAP Staff TSC, WRAP Staff WRAP staff WRAP staff	TSC in-kind; WRAP staff budget	Ongoing Ongoing, Monthly WRAP Board Calls Ongoing Ongoing
	Workplan and Work Group oversight and direction <ul style="list-style-type: none"> Working with the Board-approved Work Group Co-Chairs to complete Work Group memberships Working with the WRAP Work Groups on development and finalization of their individual Work Group Workplans Establishing monthly status reports, with Work Groups and WRAP project leads reporting progress to the TSC during 	TSC, WRAP Staff	TSC in-kind; WRAP staff budget	March 1, 2017 Regional Haze Planning: April 1, 2017; All others: February 15, 2017

	monthly TSC meeting			Monthly TSC Calls
	Spring TSC & Workgroup Co-Chairs Meeting Fall TSC & Workgroup Co-Chairs Meeting	TSC & WRAP Staff, in coordination with WG Co-Chairs	TSC & WG Co-Chair in-kind; WRAP staff budget	April 2017 (virtual) October 2017 (virtual)
	Coordinate with WESTAR committees and work groups to ensure activities conducted in WRAP projects, under the auspices of the TSC and WRAP Work Groups, provide needed support. Maximize coordination within WRAP and leverage work of other related partner organizations through outreach, hosting and attending technical conferences and producing white papers to network with other organizations with common interests and needs.	WRAP Staff TSC & WRAP Staff, in coordination with WG Co-Chairs	WRAP staff budget TSC & WG Co-Chair in-kind; WRAP staff budget	Ongoing
	Developing the 2018 Annual WRAP Workplan and reviewing the associated annual Work Group Workplans, budgets, projects and deliverables Post WRAP Board-approved Annual WRAP Workplan and status reports of the WRAP Work Groups and WRAP projects to the WRAP website.	TSC & WRAP Staff, in coordination with WG Co-Chairs WRAP staff	TSC & WG Co-Chair in-kind; WRAP staff budget	October 1, 2017 Ongoing

Regional Haze Planning Work Group – analysis steps	Regional Analysis Activity	Milestone
<p>Training Based on Guidance Support WRAP TSS functionalities (updates and maintenance) Assess Inventory Quality by sector & category Worst Days vs Most Impaired Protocol Natural Conditions - Adding Smoke & International to 2064 (what about dust and volcanoes)</p>	<p>Regional Haze monitoring and emissions analysis to support planning (118 visibility-protected Class I areas)</p> <ul style="list-style-type: none"> • Assess revised Regional Haze Program Requirements • IMPROVE Monitoring Data Analysis for revised metric • Regional Emissions Analysis – work covers list below <ol style="list-style-type: none"> a. Emissions Inventories b. Emission Inventory Method Changes c. Sector Methods d. Additional (critical) Emission Inventory Studies e. Emission Inventory Projections 	<p>Work to be completed Spring-Summer 2018 Funding in hand by Summer 2017 to start work</p>
<p>Coordination on Regional Modeling Selecting a Metric - Regional Decision? Recreate the 2000-04 baseline with new metrics How Would States Work Together? Federal Land Managers Consultation (develop protocol) Discuss EPA Projection to 2028 from 2011v3 CSAPR Modeling Future Projection Inventories for Planning Analyses</p>	<p>Contiguous WESTAR-WRAP region (112 Class I areas)</p> <ul style="list-style-type: none"> • Regional Modeling <ol style="list-style-type: none"> a. Meteorological and Emissions Modeling b. Visibility Modeling - Reasonable Progress Goals for each Class I area c. Source Apportionment and Sensitivity Analyses <p>Alaska Analysis (4 Class I areas) – additional specific studies</p> <p>Hawaii Analysis (2 Class I areas) – additional specific studies</p>	<p>Final modeling done late 2019 Funding available starting in Fall 2017 to start work Modeling continues for 2 years As identified by Alaska, no later than Fall 2018 As identified by Hawaii, no later than Fall 2018</p>
<p>Identify resources and methods for modeling controls Compare Progress with Current Glide Path and What that Means</p> <p>Future Natural Conditions (convert current 2064 default to PM₁₀?)</p> <p>Progress in Visual Range – what are realistic expectations?</p>	<p>Assessing Emission Reduction Strategies and Reasonable Progress Goals (118 visibility-protected Class I areas)</p> <ul style="list-style-type: none"> • Four-Factor Analysis • Potential Visibility Effects of 4-factor controls • Setting each Class I area’s Reasonable Progress Goal following EPA guidance • other planning support as needed 	<p>Analyses completed late 2019 Funding available starting by early Summer 2018 to start work</p>
<p>Co-Chairs attendance at Technical Steering Committee In-person Meeting, 2 meetings per year</p>	<p>2017 Workplan funding request</p>	<p>December 1, 2017</p>

Oil & Gas Work Group	Activity Type / Source of Effort	Milestone
Identify Oil and Gas Work Group action items that will require coordination with WRAP and WESTAR work groups and committees	In-kind work	2nd Quarter 2017
Oil and Gas Work Group Scope: <ul style="list-style-type: none"> Identify Oil and Gas sources for the entire upstream and midstream sectors Identify WRAP member agencies dealing with oil and gas sources 	In-kind work	2nd Quarter 2017
Review Oil and Gas-specific work products: review existing work products to identify and discuss relevance, strengths, areas for improvement, and gaps.	Initiate in-kind work and continue to explore if funding is necessary	
Identify regional and local air quality planning needs: Regional Haze, Ozone, Climate Change, Hazardous Air Pollutants, and Other Air Pollution Indicators	Workgroup will initiate and continue to explore if additional assistance is necessary	4th Quarter 2017
Fire & Smoke Work Group	Activity Type / Source of Effort	Milestone
Smoke Management Plans	To be addressed	Summer 2017
Emissions Inventories	Activity Data to support Emissions Inventory <ul style="list-style-type: none"> Review of FETS / WRAP Fire Tools <ul style="list-style-type: none"> Identify potential updates and restructuring of FETS / WRAP Fire Tools Review current functions Identify improvements to track activity and improve emissions estimates Update state, tribal, and federal data streams Add PFIRS tracking and SmartFire/Bluesky forecasting data streams 	Fall 2017
Exceptional Events	Work underway	Summer 2017
Communications	To be addressed	Fall 2017
Regional Technical Operations Work Group	Activity Type / Source of Effort	Milestone
Intermountain West Data Warehouse as a data source (and/or other regional data sources) encompass contiguous		

WESTAR-WRAP region (except for Hawaii and Alaska)		
Tribal Data Work Group	Activity Type / Source of Effort	Milestone
Assessment of the status of Tribal air quality monitoring, AQS, and emissions inventories	In-Kind - TDWG, WRAP Staff and IWDW	September 1, 2017
Determine the types of Tribal data needs for WRAP projects and deliverables	In-Kind - TDWG, WRAP Staff, RTOWG RHPWG, OGWG, and FSWG	September 1, 2017
2) General Regional Technical Analysis Needs		
Oil & Gas Work Group	Activity Type / Source of Effort	Milestone
Develop communication plan to distribute Oil and Gas Work Group work products	In-kind work	2nd Quarter 2017
Co-Chairs attendance at Technical Steering Committee In-person Meeting, 2 meetings per year	2017 Workplan funding request	December 1, 2017
Fire & Smoke Work Group	Activity Type / Source of Effort	Milestone
Exceptional Events		
Communications		
Co-Chairs attendance at Technical Steering Committee In-person Meeting, 2 meetings per year	2017 Workplan funding request	December 1, 2017
Regional Technical Operations Work Group	Activity Type / Source of Effort	Milestone
Regional Haze modeling analysis	Pending direction from RHPWG	Summer 2017
Other western air quality modeling analyses	Pending direction from other Work Groups	Summer 2017
Exceptional Event regional data support	See table to be drafted for Board meeting	
Co-Chairs attendance at Technical Steering Committee In-person Meeting, 2 meetings per year	2017 Workplan funding request	December 1, 2017
Tribal Data Work Group	Activity Type / Source of Effort	Milestone
Develop SharePoint website (or similar arrangement) to house TDWG documents and projects.	WRAP Budget	March 1, 2017
Help Tribes understand the benefits of using WRAP and WESTAR products and services	In-Kind	July 1, 2017
Change Section F title to – Support Development of Tribal Air Quality Capacity and Capability and rewrite narrative	In-Kind	Completed
Solicit Tribal membership in WRAP and participation in the TDWG	In-Kind	September 1, 2017
Schedule TDWG meeting and provide activity reports	In-Kind	September 1, 2017
Co-Chairs attendance at Technical Steering Committee In-person Meeting, 2 meetings per year	2017 Workplan funding request	December 1, 2017
Provide educational opportunities for WRAP member Tribes and	In-Kind - TDWG and WRAP Staff	December 1, 2017

Tribes within the area of interest.		
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B. WRAP Workplan Timelines

WRAP Technical Steering Committee 2017 Schedule

Task	Q1 - 2017			Q2 - 2017			Q3 - 2017			Q4 - 2017		
	January	February	March	April	May	June	July	August	September	October	November	December
Work Group Formation and Plan Development												
Draft Work Plans	█	█										
Work Plan review and synthesis by TSC, draft to final	█	█	█	█	█							
2017 Draft Work Plan review by WRAP Board		█										
2017 Final Work Plan review by WRAP Board				█	█							
2017 Final Work Plan approval by WRAP Board				█	█							
TSC identify priorities for Board discussion					█							
TSC and Work Group co-chairs webinar & teleconference				█						█		
WRAP/WESTAR Spring Mtg, April 26-27, San Diego, CA				█	█							
Seek funding for important subset of work tasks for 2018				█	█	█	█	█	█	█	█	█
Analysis for regional planning								█	█	█	█	█
Begin drafting 2018 WRAP WG workplans											█	█
Regional Haze Planning Work Group												
Outreach and identification of members	█	█	█	█								
Develop 2017 Work Plan for WRAP Board Approval	█	█	█	█	█	█	█	█	█	█	█	█
Identify and Prioritize RH SIP preparation requirements				█	█	█	█	█	█	█	█	█
Identify resources to undertake and complete critical tasks				█	█	█	█	█	█	█	█	█
Establish process to work with WESTAR RH group					█	█	█	█	█	█	█	█

WRAP Regional Haze Planning Work Group Multi-year Schedule

Task	2017				2018				2019				2020				2021			
	Q1	Q2	Q3	Q4																
Preparatory Work	█	█	█	█																
Emissions Inventory			█	█	█	█	█	█	█	█	█	█								
Control Measure Analysis			█	█	█	█	█	█	█	█	█	█								
Monitoring Data Analysis		█	█	█	█	█	█	█	█	█	█	█								
Modeling			█	█	█	█	█	█	█	█	█	█	█	█	█	█				
Natural and International			█	█	█	█	█	█	█	█	█	█								
Embedded Progress Report													█	█	█	█	█	█	█	█
State to State Consultation													█	█	█	█	█	█	█	█
FLM Consultation													█	█	█	█	█	█	█	█
State Adoption Process													█	█	█	█	█	█	█	█

C. Budget Table Summary

This budget includes an estimate of funding needed for basic operations to support the WRAP technical analysis and planning for both 2017 and 2018. It also includes, at the end of the budget a conservative estimate of the in-kind contributions, in units of total hours for 2017-18, that are likely to be provided through participation in the TSC and the WGs, over this time period by staff from state, federal, tribal, and local agencies.

Calendar Year 2017 – short term operational needs to get WRAP Regional Haze planning analysis started

Activity	Funding Amount
Contractor support for kickoff work products - summarizing gaps, needs of each WG, and emerging issues for Western air quality planning - \$10,000 for each of 5 Workgroups	\$50,000
TSC and WG Co-Chairs (state, tribal, local reps) travel support for Fall 2017 meeting – 20 individuals @ \$800 trip budget	\$16,000
Local and Tribal WRAP Board member travel support for Fall 2017 meeting – 7 individuals @ \$800 trip budget	\$ 5,600
Contracted part-time WRAP staff (July - Dec.) 15 hours/week @ \$75/hour * 26 weeks	\$29,250
2017 Total	\$100,850

Calendar Year 2018 – basic operational needs* to continue overall Workplan implementation progress and continue Regional Haze analysis

Activity	Funding Amount
Contractor support needs for each WG to be determined in Fall 2017 planning process with Board for 2018 WRAP Workplan	\$ TBD
TSC and WG Co-Chairs (state, tribal, local reps) travel support for Spring and Fall 2018 meetings – 20 individuals @ \$800/trip budget * 2 meetings	\$32,000
Local and Tribal WRAP Board member travel support for Spring and Fall 2018 meetings – 7 individuals @ \$800/trip budget * 2 meetings	\$ 11,200
Contracted part-time WRAP staff (Jan. - Dec.) 15 hours/week @ \$75/hour * 52 weeks	\$58,500
2018 Total (minimum before WG contractor support for Regional Haze planning analyses)	\$101,700

In-kind hours of staff time contributed to WRAP by TSC and WGs’ members and advisors in 2017-18

Average 36 hours/year/person * 84 WRAP member agencies’ staff active in TSC and WGs * 2 years =	6,048 hours
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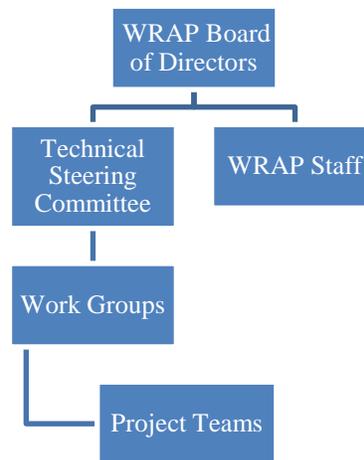
* does not include contractor support for detailed regional analyses needed for Regional Haze planning

Appendix A

WRAP Organizational Structure

Membership in the WRAP is open to all states, federally recognized tribes, and local air agencies located in the geographical region encompassed by the states of: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming. Membership in the WRAP is also open to the US Forest Service, National Park Service, Bureau of Land Management, Fish and Wildlife Service, and U.S. EPA. In order to become a recognized member of the WRAP, eligible states, tribes, local air agencies, and federal agencies shall submit an official letter to the WRAP requesting membership and designating primary and secondary contacts for the jurisdiction or agency. Any tribe, state, or local air agency in the WRAP region may participate in the WRAP; however, for membership/Board matters brought to a vote, recognized membership is needed.

In order to accomplish the objectives of the WRAP, in addition to the TSC and topical Work Groups already described, other portions of the WRAP structure are organized as follows:



WRAP Board of Directors

The WRAP [Board of Directors](#) consists of five state, five tribal, five federal and two local air agency representatives. The Board of Directors acts on behalf of all WRAP members. The WRAP's purposes, activities, powers, and duties of the Board of Directors are described in the [WRAP Charter](#), last amended in July 2014. From the Charter, the Board of Directors provides overall policy direction to the WRAP by accomplishing the following:

- Work with WRAP staff to solicit and accept funding for continued efforts under current activities and projects described in this Workplan, as well as the likely addition of new or expanded activities or projects;
- Sustaining the membership and providing oversight for the activities of the Technical Steering Committee;
- Provide oversight for WRAP Staff as described in the Charter;
- Establish Work Groups and Project Teams as recommended by WRAP Staff and the Technical Steering Committee for the effective coordination of WRAP initiatives;
- Review and approve Workplans developed by the Technical Steering Committee;
- Ensure appropriate stakeholder participation in WRAP processes through coordination with the WRAP staff and Technical Steering committee; and
- Initiate membership meetings twice a year or as necessary to oversee the general direction of the WRAP.

The WRAP Board resolves all issues on a consensus basis. The WRAP Board may vote on administrative matters when consensus cannot be reached.

WRAP Technical Steering Committee

The WRAP Board formed the [Technical Steering Committee](#) (TSC) in Fall 2015 to organize, direct, and coordinate WRAP project activities and Work Groups listed under the topical issues identified in the Annual WRAP Workplan, as well as to hold the lead responsibility for the WRAP Workplan, including progress reporting and budget tracking for the Board (see Appendix B: Technical Steering Committee Description). The WRAP TSC accomplishes the following:

- Work with the WRAP Board to establish the topical WRAP Work Groups by designating the WRAP Work Group Co-Chairs to be approved by the WRAP Board.
- Work with the WRAP Work Group Co-Chairs to identify and approve Work Group members.
- Oversee the preparation of a calendar year annual workplan and budget for Board approval.
- Maintain the WRAP process through:
 - Open and transparent communications, including periodic meetings, conference calls and documentation;
 - Completion of deliverables that support the common needs of the WRAP membership and avoid duplication;
 - Pursuing opportunities to leverage multi-agency resources to accomplish larger projects; and
 - Providing TSC leadership on behalf of the Board to enable Work Groups and specific Project Teams to implement and track work under the Annual Workplan.
 - Coordinating with WESTAR committees and work groups to ensure activities conducted in WRAP projects, under the auspices of the TSC and WRAP Work Groups, provide needed support.

WRAP Staff

The WRAP Staff provide full-time technical leadership support as well as significant experience and expertise to the TSC. As time and funds permit, the WRAP Staff work on technical projects with the TSC and Work Groups. The WRAP Staff accomplishes the following:

- As time and resources permit, support each project team of the TSC and Work Groups in completing the mission of the team. The WRAP Staff may retain outside contractors for support on specific projects;
- Seek out funding opportunities that align with the WRAP Board of Directors overall policy direction and bring these opportunities to the attention of the WRAP Board and TSC for consideration;
- Work with the TSC and Board of Directors to ensure timely submittal of grant applications;
- Track all current and any new WRAP activities and projects to assist the Technical Steering Committee, Work Groups, and Project Teams, for periodic WRAP Board reporting;
- Consider the technical tools needed to assist the WRAP membership in making use of WRAP products and reports by conducting an annual needs assessment for WRAP membership;
- Improve communications among the WRAP membership by organizing WRAP meetings with input from the TSC and Board and conducting periodic conference calls with the TSC, Work Groups, Board and membership;
- In accordance with the direction of the WRAP Board, maintain a strategic plan and update the Annual Workplan for WRAP Board review and approval; and

- In coordination with the TSC, review available funding, WRAP membership needs and prioritized projects to produce reports and white papers outlining future technical needs and needed funding.

WRAP Work Groups

Under WRAP Board approval, topical work groups were established in the 2016 WRAP Workplan and continue through this 2017 Workplan. There are five WRAP Work Groups: Regional Haze Planning, Fire and Smoke, Oil and Gas, Regional Technical Operations, and Tribal Data. With oversight by the TSC, WRAP Work Groups are charged with identifying annual priorities and work tasks to complete objectives in Board-determined topical work areas.

WRAP Work Group Co-Chairs are determined by the TSC and approved by the WRAP Board to lead and execute the Work Plan objectives associated with the individual Work Group. Work Group Co-Chairs work with the TSC to identify Work Group members who have applicable expertise related to that Work Group, seeking appropriate representation from the WRAP membership (states, tribes, locals, FLMs) to the greatest extent possible. WRAP Work Groups will be composed of members from WRAP member agencies, however, some Work Groups will or could have significant participation from industry and environmental stakeholders, as directed by the Board and overseen by the TSC. Work Group membership is to be approved by the TSC.

WRAP Work Groups work with the TSC on development of individual Work Group Workplans that will describe the detailed tasks and activities to meet Annual WRAP Workplan objectives, including incorporation of applicable WRAP projects (see WRAP 2016 Workplan, Appendix B - Work Group Workplan Template). Work Group Workplans will be submitted by the TSC to the WRAP Board for approval. Individual 2017 Work Group Workplans are found in Appendices C-G of this 2017 WRAP Workplan.

WRAP Project Teams

Under the leadership of the Technical Steering Committee, Work Groups, WRAP Staff, and ultimately the WRAP Board, needed Project Teams will be identified and included in the Annual Workplan process. The TSC and/or Work Groups will be responsible for managing the Project Teams, which are intended to enable non-members of WRAP to express interest and sponsor analysis or planning projects within the scope and topics of the WRAP Charter and Strategic Plan. The Project Teams will be associated with a discrete, defined project for which the non-member sponsor is providing funding and expertise resources. The Project Teams are intended to allow sponsor participation and will include members of WRAP Work Groups and TSC, WRAP Staff, and non-member sponsors. The TSC will define the scope and membership, and duration of each Project Team, and include that information in the Annual Workplan. The WRAP has one recent historical example of an active Project Team, the Study Management Team for the [Drill Rig 1-hour NO₂ Collaborative Study](#).

Appendix B

Technical Steering Committee Description

(Approved by WRAP Board – October 2015)

Introduction

This document presents the member qualifications, membership and committee structure, meeting and call schedule, duties, and work group oversight activities of the WRAP Technical Steering Committee (TSC) under the requirements of the [WRAP Charter](#) and Board-approved planning documents. Updates to this document can be made through the WRAP Board at any time, and can be initiated by the Board, TSC members, or at the suggestion of WRAP member agencies.

TSC Member Qualifications

The TSC members will be from WRAP member organizations and will be senior air quality technical or planning program management staff with experience in air quality programs. To assure appropriate time and effort commitment, the Board will nominate individual TSC members and the WRAP member agency representative from the nominee's agency will accept the nomination.

TSC Membership Structure and Terms

The TSC is composed of:

- Three (3) state representatives;
- Three (3) tribal representatives;
- Three (3) Local Air Agency representatives – at least one (1) from the non-California WRAP region; and
- Three (3) federal agency representatives – one (1) of whom will represent the U.S. EPA.

The TSC will function by consensus as defined in the WRAP Charter.

The TSC will have two (2) Co-Chairs appointed by the Board. TSC Chairs will be from WRAP member organizations. The Co-Chairs will be responsible for serving as liaisons to the Board and reporting on the TSC activities to the Board, with support from WRAP staff.

The desired distribution of TSC members is to reflect the diversity of member agency programs and air quality issues across the WRAP region, and draw upon the substantial collaborative regional air quality technical and planning needs and experience of WRAP member agencies. Vacancies among TSC seats may be filled by the Board at any time. All TSC members and Chairs will be appointed for two-year terms, with the first such terms expiring at the conclusion of the Fall 2017 WRAP membership meeting.

Duties and WRAP Staff Support

The TSC will have at least bi-monthly conference calls to manage TSC activities and provide oversight to WRAP work groups and projects. The TSC will oversee the preparation of an annual workplan and budget for Board approval, covering technical projects and Work Groups. The TSC may have meetings immediately preceding or following the Spring and Fall WRAP membership meetings, and/or other meetings as needed, to plan next steps, address comments and concerns, and review Workplans and activities. The TSC Co-Chairs will plan and direct the calls and meetings, and with assistance from WRAP staff, take the lead in communications and other necessary Board interaction.

WRAP staff will provide support for TSC calls and meetings. WRAP staff will assist with arranging and documenting TSC calls and meetings, prepare TSC Workplans and budgets for review and action, assist with status

reports on the Work Groups' activities, and provide status reports on the deliverables, budgets, and timelines for the WRAP's technical projects.

Day-to-day management of WRAP technical projects will primarily be conducted by WRAP staff. The TSC will provide oversight and coordination for the work groups, committees, and projects or tasks listed below by reviewing and directing the effort of WRAP Work Groups and staff to manage these projects, via routine status reports, the annual workplan and budget, and periodic interaction with the contractors operating these systems.

TSC Oversight of WRAP Technical Projects

The TSC will coordinate among and provide oversight for the activities conducted under following grants, cooperative agreements, and other Board-authorized WRAP projects. The tasks comprising the projects are documented in the annual workplan, and posted on the WRAP website.

- 1) The WRAP Regional Technical Support portion of the WESTAR-EPA grant;
- 2) The WESTAR/WRAP-BLM Cooperative Agreement;
- 3) The WESTAR/WRAP-NPS Cooperative Agreement;
- 4) Projects under the Joint Fire Science Program;
- 5) Development and ongoing implementation of the WRAP Regional Technical Center; and
- 6) Any modified or new tasks, projects, and/or initiatives recommended by the Board for implementation via acceptance by WESTAR/WRAP through new or modified Cooperative Agreements, Grants, Funding Opportunities, or other mechanisms.

TSC Oversight of WRAP Work Groups

The TSC will provide oversight for the following WRAP Work Groups. The activities of the projects and work groups will be documented for review by the Board. Additional or modified Work Groups may be authorized by the Board and those changes made in the appropriate Work Group workplan document and via the annual workplan.

- 1) Tribal Data Work Group (TDWG);
- 2) Regional Technical Operations Work Group (RTOWG);
- 3) Oil and Gas Work Group (OGWG); and
- 4) Fire and Smoke Work Group (FSWG).

WRAP Work Groups will be composed of members from WRAP member agencies, and Co-Chairs of each work group will be designated by the TSC to lead and execute the activities associated with the individual work group, outlined in each work group's workplan document. Some work groups will or could have significant participation from industry and environmental stakeholders, as directed by the Board and overseen by the TSC. The TSC will provide oversight of the work groups by reviewing their annual Workplans, budget, projects and deliverables, via routine status reports, and periodic interaction with the work groups' Chairs and members.

Coordination

The TSC will also coordinate with the following work groups and committees to ensure activities conducted in WRAP projects, and under the auspices of the TSC and WRAP Work Groups provide needed support:

- 1) WESTAR Regional Haze Planning Work Group;
- 2) WESTAR Planning Committee;
- 3) WESTAR Technical Committee; and
- 4) Other groups as designated by the Board in the annual Workplan process.

Appendix C

Regional Haze Planning Work Group (RHPWG)

Status Report

- Final RHR effective January 10, 2017 <https://www.federalregister.gov/d/2017-00268>
- Publication of U.S. EPA final guidance on RH Planning requirements uncertain, not before May
- Work Group members identified, conference calls underway, Work Group working on deliverables for 2017 WRAP Work Plan
- Three conference calls in first quarter of 2017; likely bi-monthly calls after that
- Co-Chair report on Western States Regional Haze Survey and Work Plan Elements at Spring WESTAR/WRAP meeting in San Diego

Purpose

The purpose of the WRAP Regional Haze Planning Work Group (RHPWG) is to prepare the framework to support regional planning for the 15 western states, so that needed elements will be available for RH SIP submissions in a timely fashion, to meet the July 2021 deadline for the second planning period of the federal Regional Haze Rule for visibility protection at 118 Class I areas in the 15 western states.

Duties and WRAP Staff Support

In consultation with the Co-Chairs from the Regional Haze Planning Work Group (RHPWG), the Technical Steering Committee (TSC) will review and seek Board approval of a written workplan to address and include all the elements for each Work Group, specific to RHPWG as described in Section I of the Annual WRAP Workplan. Based on these elements, the RHPWG is then charged with creating detailed workplan inputs to the WRAP annual workplan for achieving these objectives. The RHPWG workplan will include a schedule for progress reports to the TSC (quarterly and annual summary) and a schedule for project completion. The RHPWG will work with WRAP staff to have progress reports posted to the WRAP website. The RHPWG and other Work Groups are responsible for translating technical materials into a form understandable by the TSC, Board, and the general public. The RHPWG has the additional responsibility for ensuring the best information and data are available for visibility protection planning across the region, with WRAP Staff support.

The RHPWG will have conference calls on alternating months to manage activities and provide oversight to WRAP projects. The RHPWG will provide inputs to the TSC for an annual WRAP workplan and budget for Board approval, covering technical projects and Work Group coordination. The RHPWG may have meetings identified in the annual workplan. The RHPWG Co-Chairs will plan and direct the calls and meetings, and with assistance from WRAP Staff, take the lead in communications and other necessary TSC and Board interaction.

WRAP Staff will provide support for RHPWG calls and meetings. WRAP Staff will assist with arranging and documenting RHPWG calls and meetings; preparing TSC workplan inputs and budgets for review and action; drafting status reports on the RHPWG's activities; and providing status reports on the deliverables, budgets, and timelines for the WRAP's technical projects.

Processes

The RHPWG is to conduct their business on a consensus basis. Consensus has the following parameters:

- Consensus is agreement.

- Consensus is selection of an option that everyone can live with.
- Consensus may not result in the selection of anyone's first choice, but everyone is willing to support the choice.
- Consensus is not a majority vote.

When the RHPWG cannot reach a consensus on an issue, it will be referred to the TSC. If the TSC cannot reach a consensus on the issue, it will be referred to the WRAP Board for resolution.

Co-chairs prepare brief agendas for conference calls. For efficiency sake, notes of calls and meetings will be limited to action items and reminders of who takes responsibility for various tasks.

Coordination

Through the TSC, the RHPWG will coordinate with the following work groups and committees as needed to ensure activities conducted in WRAP projects, and under the auspices of the RHPWG provide needed support:

1. Tribal Data Work Group (TDWG);
2. Regional Technical Operations Work Group (RTOWG);
3. Oil and Gas Work Group (OGWG);
4. Fire and Smoke Work Group (FSWG);
5. WESTAR Regional Haze State Implementation Plan (SIP) preparers group;
6. WESTAR Planning Committee;
7. WESTAR Technical Committee; and
8. Other groups as designated by the Board in the annual Workplan process.

RHPWG Co-Chairs and Work Group Members

Tina Suarez-Murias, California Air Resources Board
Jay Baker, Utah Department of Environmental Quality

Work Group members will be selected from WESTAR Planning and Technical Committee participants based on their past experience preparing their state's initial Regional Haze Plan or Progress Report. State members serve for one year with the option of renewing for following years. Federal Land Managers and the U.S. EPA will be represented in the Work Group. Liaisons from each of the other Work Groups are invited to listen in or participate in the RHPWG conference calls to encourage the exchange of respective Work Group progress on activities of mutual interest and need. WRAP/WESTAR staff are de facto members of the Work Group.

Action Items for 2017 WRAP Work Plan

- I. RHPWG Management
 - a. Roles and Responsibilities of Work Group Members
 - b. Conference Call Schedules
 - c. Interaction with TSC and Other Groups
 - d. Communication and Documentation
- II. Scoping Tasks for 2017 WRAP Work Plan Elements
 - a. Survey Individual State Needs and Collate Results

- b. Determine Training Needed for Writing RH SIPS
- c. Identify Regional and State Responsibilities from the January 10, 2017 Rule
<https://www.federalregister.gov/d/2017-00268>
- d. Identify further Regional and State Responsibilities for the second planning period (RH SIPS due in 2021 setting the 2028 Reasonable Progress Goals) depending on pending US EPA guidance on RH SIP implementation
- e. Use the WESTAR Regional Haze 2018 SIP Update Plan as a means to identify tasks and processes for the 2017 WRAP Work Plan and subsequent years
- f. Order SIP tasks by Priority on a Preliminary Multi-Year Timeline (can utilize Gantt Chart in Appendix B of the WESTAR Regional Haze 2018 SIP Update Plan as starting point)
- g. Develop Regional Haze 2021 SIP Update Protocol using the WESTAR Regional Haze 2018 SIP Update Plan; the Regional Haze Rule effective January 10, 2017; and the pending US EPA Guidance for RH SIP Implementation as guides

III. Preparing SIP Work Plan Elements (prioritize 2017- 2018 time frame)

- a. Evaluate Inventory Issues (what's available, what improvements are needed, for which years)
- b. Develop Emissions Inventory projection protocol, to forecast 2028
- c. Evaluate TSS Existing Monitoring Data Functionalities and Future Needs (coordinate with RTOWG)
- d. Evaluate Modeling Needs (base year, 2028, and RPG) (for meteorology and for gridded emissions inputs)
- e. Coordinate with USEPA Modeling (adjustments needed to make it useful for western states)
- f. Initiate Early Consultation with Federal Land Managers (initial discussion of monitoring and emission trends)
- g. Evaluate Protocol for Monitoring Data Analysis (Species separation into Anthropogenic, Natural, and International)
- h. Coordination with FSWG for Fire & Smoke Quantification (for modeling inputs and for monitoring data analysis)
- i. Protocol for Identifying "Natural Smoke" or "Wildland Fire" Days, to be differentiated from "Anthropogenic Fire" days.
- j. Protocol for Identifying International Emissions (natural and anthropogenic)
- k. Protocol for Identifying/Quantifying "Dust Days"
- l. Protocol for Identifying/Quantifying "Volcanic Days"
- m. Initial Control Strategy Analysis based on Inventory Analysis and Growth Potential (are there critical source categories in the West)
- n. Determine Special Analysis Needs requiring Contractor Assistance
- o. Differentiate and Schedule State and Regional SIP Tasks
- p. Progress Report Analysis (identify regional vs. state needs)

IV. Overriding Work Plan Items

- a. Major Funding needed
 - (1) Available vs. Desired Resources
 - (2) Potential Funding Sources and In-Kind Resources
- b. Alternative Means for Meeting SIP and Progress Report Requirements

V. RHPWG Administration

- a. Determine how and when co-chairs are appointed
- b. Time commitments for all participants
- c. Development of budgets for projects

- d. Travel budget proposal for WRAP twice yearly meetings
- e. Summary budget for RHPWG activities
- f. Write RHPWG portion of 2017 WRAP work plan (continue for subsequent years, as needed)
- g. Deliverable Products Distributed to States or posted to WRAP website as appropriate

Budget Request

Funding Need	Amount	Funding Request
Support of Conference calls	??	WRAP Budget
Travel to in-person WRAP Board meetings for Co-Chair(s)	????	WRAP Budget
Develop RH SIP training (includes use of TSS)	??????	Possibly utilize another RPOs training?
Travel for SIP training for Webinar or in-person meetings 15 states	??????	WRAP Budget

Thematic grouping of **DELIVERABLES** – with summary paragraph of grouping definitions (e.g. gap filling, data collection & analysis, documenting the status quo...)

(Possible projects that feed into RH SIP requirements)		Comments	
1	Assess each State Inventory by sector & category	What's growing, what isn't, what's clustered, what's legally and technically controllable by whom, what percentage is it of the inventory sectors? etc. (sectors: Natural, Mobile, Areawide (anthro), Stationary (anthro), all State-by-State	2017
2	Future Inventory	Which states have future years; which don't; other options	2017
3	Training Based on Guidance	Webinar vs. in-person meeting	2017
4	How States Would Work Together	WESTAR SIP preparers caucus – name/process TBD (Planning & Technical Committee representatives from each state)	2017
5	Assure WRAP TSS Function and Maintenance	Data stored here; critical need; states don't have back-up.	2017
6	Analyze monitoring data for Worst v Most Impaired Days Separate Out Natural and Anthropogenic	Each State will need to do this	2017-2018
7	Selecting a Metric - Regional Decision?	To be resolved; do states have same or different preferences	2017-2018
8	Discuss EPA Projection to 2028 from CSAPR Modeling	Find out what modeling EPA will do or is doing	2017-2018
9	Figure out what modeling we are going to need	Price out options	2018
10	Create a new Baseline for Most Impaired Metric	Develop protocol if Guidance not specific or available	2018
11	Compare Progress with Glide Path (s) and What that Means	Determine data years for Progress Report inside SIP	2017-2018
12	Newest Mexican, Canadian, Pacific, Asian inventories or NASA/NOAA remote or aircraft data or research	Special study....needed for modeling?	2018
14	Natural Conditions - Adding Smoke & International to 2064 (what about dust and volcano vog?)	Will there be a method spelled out in Guidance. If not, should we create one, or is it a state-by-state issue?	2018
15	Future Natural Conditions, when would EPA approve this, since it changes the Glide Slope	Is U.S. EPA or IMPROVE Steering Committee creating new Natural Conditions for 2064, and from what data?	2018
16	Coordination on Regional Modeling	Depends on if we select 2011 (EPA CSAPR modeling) or 2014 which includes more of the BART reductions	2017-2018
17	Progress in Visual Range - what's realistic Expectation	Should we start converting to miles, as an option, for public outreach?	Optional post 2017
18	Convert current 2064 default to PM10	Concentrations at IMPROVE monitors are far below PM10 NAAQS in western CIAs, compared to urban areas	Optional post 2017

Appendix D

Fire and Smoke Work Group 2017 Workplan

Approved by FSWG members January 31, 2017

The Fire and Smoke Work Group will focus on analysis and planning activities related to improve activity data to support emissions inventories for fire and smoke emissions, begin scoping work to assess present and range of future year contributions of natural sources such as fire, undertake evaluation of Smoke Management Programs, survey and compile information about Exceptional Events assessment efforts, review the treatment of fire and smoke emissions in modeling studies, and improve coordination between state, tribal, and federal agencies. Several of these activities involve close coordination with other WRAP Work Groups as described in the FSWG Workplan.

Action Items for 2017 FSWG Workplan

Deliverable	Source	Funding	Timeline
FETS review: current functions, improvements needed	Workgroup, Matt Mavko	Request funds for Matt's time.	2017
Smoke Management Plans: compile and review	Workgroup	In-kind work.	2017
Exceptional Events: compile list of states developing mitigation plans	Workgroup	In-kind work.	2017
Exceptional Events: identification of key data to collect for demonstrations	Workgroup	In-kind work.	2017
Wildfire coordination between states/tribes: define fire language used by FLMs, states, and tribes	Workgroup	In-kind work.	2017

Duties and WRAP Staff Support

In consultation with the Chair or Co-Chairs from the Fire and Smoke Work Group (FSWG), the Technical Steering Committee (TSC) will review and seek Board approval of a written workplan to address and include all the elements for each Work Group, specific to FSWG as described in Section I of the Annual WRAP Workplan. Based on these elements, the FSWG is then charged with creating detailed workplan inputs to the WRAP annual workplan for achieving these objectives. The FSWG workplan will include a schedule for progress reports to the TSC (quarterly and annual summary) and a schedule for project completion. The FSWG will work with WRAP staff to have progress reports posted to the WRAP website. The FSWG and other Work Groups are responsible for translating technical materials into a form understandable by the TSC, Board, and general public. The FSWG has the additional responsibility for ensuring the best information and data are available for air quality planning across the region, with WRAP Staff support.

The FSWG will have conference calls on alternating months to manage activities and provide oversight to WRAP projects. The FSWG will provide inputs to the TSC for an annual WRAP workplan and budget for Board approval, covering technical projects and Work Groups. The FSWG may have meetings identified in the annual workplan. The FSWG Chair or Co-Chairs will plan and direct the calls and meetings, and with assistance from WRAP Staff, take the lead in communications and other necessary TSC and Board interaction.

WRAP Staff will provide support for FSWG calls and meetings. WRAP Staff will assist with arranging and documenting FSWG calls and meetings, prepare TSC workplan inputs and budgets for review and action, assist

with status reports on the FSWG’s activities, and provide status reports on the deliverables, budgets, and timelines for the WRAP’s technical projects.

Processes

The FSWG is to conduct their business on a consensus basis. Consensus has the following parameters:

- Consensus is agreement.
- Consensus is selection of an option that everyone can live with.
- Consensus may not result in the selection of anyone's first choice, but everyone is willing to support the choice.
- Consensus is not a majority vote.

When the FSWG cannot reach a consensus on an issue it will be referred to the TSC. If the TSC cannot reach a consensus on the issue it will be referred to the WRAP for resolution.

Coordination

Through the TSC, the FSWG will coordinate with the following work groups and committees as needed to ensure activities conducted in WRAP projects, and under the auspices of the FSWG provide needed support:

1. Tribal Data Work Group (TDWG);
2. Regional Technical Operations Work Group (RTOWG);
3. Oil and Gas Work Group (OGWG);
4. Regional Haze Planning Work Group (RHPWG)
5. WESTAR Planning Committee;
6. WESTAR Technical Committee; and
7. Other groups as designated by the Board in the annual Workplan process.

FSWG Co-chairs

Carolyn Kelly, Quinault Indian Nation
Sara Strachan, Idaho Department of Environmental Quality
Josh Hall, U.S, Forest Service

Action Items for Workplan

- VI. FSWG Management
 - a. Finalize workgroup recruitment
 - b. Schedule bimonthly meetings
 - c. Send quarterly reports to TSC
 - d. Send yearly accomplishment narrative to TSC and WRAP board
 - e. Schedule work project completion with milestones of progress
- VII. Activity Data to support Emissions Inventory
 - a. Review of [FETS / WRAP Fire Tools](#)
 - i. Identify potential updates and restructuring of FETS / WRAP Fire Tools
 1. Review current functions
 2. Identify improvements to track activity and improve emissions estimates
 3. Update state, tribal, and federal data streams
 4. Add PFIRS tracking and SmartFire/Bluesky forecasting data streams
- VIII. Determine present and range of future year contributions of natural sources (coordinate with Regional Technical Operations and Regional Haze Planning Work Groups); and
 - a. Identify potential methodologies to determine future year emissions

- i. Synthesize current research
- ii. Report possible approaches to model future year contribution of natural sources

IX. Evaluation of Smoke Management Programs

- a. Review/Update current state smoke management programs
- b. Track, reference, and apply effects of smoke management programs on fire management-related regional haze controls on regional ozone and PM.
- c. Identify Smoke Management Plans certified by states for use in prescribed burn exceptional event demonstrations

X. Exceptional Events

- a. Survey states planning on developing a mitigation strategy
- b. Compile elements of mitigation plans
- c. Identify key data to collect for exceptional event demonstrations

XI. Smoke emissions modeling

- a. Identify and evaluate emissions and modeling for fire-related ozone background and regional transport evaluation – leverage the Intermountain West Data Warehouse – Western Air Quality Study ([IWDW-WAQS](#)) and potentially other regional modeling platforms for western air agencies’ planning needs (coordinate scope with Regional Technical Operations Work Group);
- b. Specify modeling studies of fire emissions and impact analysis – results on FETS / WRAP Fire Tools and IWDW-WAQS data and decision support web systems

XII. Coordination between states/tribes/federal agencies

- a. During wildfire season – establish how states/tribes/federal agencies coordinate during wildfire season and determine how to improve
- b. For general smoke management – leverage work on evaluation of Smoke Management Programs (Action Item IV) to identify ways states/tribes/federal agencies can improve smoke management coordination

Budget Request

Funding Need	Amount	Funding Request
FETS technical consultation with Matt Mavko	amount for his time based on cost estimate to reviewed and recommended by FSWG	WRAP Budget

Appendix E

Oil and Gas Work Group 2017 Workplan

Approved by consensus on the January 10, 2017 OGWG call

The Oil and Gas Work Group will focus on analysis and planning activities related to improve activity data to support emissions inventories for oil and gas emissions, and begin scoping work to assess the present and range of future year scope of emissions management programs by the variety of regulatory jurisdictions within the WESTAR-WRAP region, by agency. The OGWG will coordinate among state, tribal, local, and federal member agencies' Oil & Gas programs, including review of modeling, monitoring, and control program assessment studies for Oil & Gas emissions. Several of these activities involve close coordination with other WRAP Work Groups as described in the OGWG Workplan (see Appendix E).

The WRAP Workplan set up topical Work Groups including the Oil and Gas Work Group to “*promote understanding of the role of oil and gas in regional and local air quality plans.*” The WRAP Workplan also identified the following with respect to the topic of oil and gas.

“The Intermountain Region is especially impacted by exploration and production emissions from the oil and gas industry, and the West more broadly by emissions from the transport and use of those fuels. NAAQS exceedances during winter in production regions of Utah and Wyoming have demonstrated localized effects, while the contributions from exploration and production in the wider region on summer ozone is still being assessed. In addition, this sector must be considered for Regional Haze planning. Studies currently point to improvements in the emissions inventory as being one of the most needed products to improve performance of the air quality models. Current projects and funding opportunities make improvements in these areas likely in the 2016-17 timeframe. This is a rapidly changing sector due to variations in commodity prices, technology innovations, and emerging regulatory programs.” - Annual WRAP Workplan approved by the WRAP Board May 9, 2016

Duties and WRAP Staff Support

In consultation with the Co-Chairs from the Oil and Gas Work Group (OGWG), the Technical Steering Committee (TSC) will review and seek WRAP Board (Board) approval of a written workplan to address and include all the elements for each Work Group, specific to OGWG as described in Section I of the Annual WRAP Workplan. Based on these elements, the OGWG is then charged with creating detailed workplan inputs to the WRAP annual workplan for achieving these objectives. The OGWG workplan will include a schedule for progress reports to the TSC (quarterly and annual summary) and a schedule for project completion. The OGWG will work with WRAP staff to have progress reports posted to the WRAP website. The OGWG and other Work Groups are responsible for translating technical materials into a form understandable by the TSC, Board, and general public. The OGWG has the additional responsibility for ensuring the best information and data are available for air quality planning across the region, with WRAP Staff support.

The OGWG will have conference calls on alternating months to manage activities and provide oversight to WRAP projects. The OGWG will provide inputs to the TSC for an annual WRAP workplan and budget for Board approval, covering technical projects and Work Groups. The OGWG may have meetings identified in the annual workplan. The OGWG Co-Chairs will plan and direct the calls and meetings, and with assistance from WRAP Staff, take the lead in communications and other necessary TSC and Board interaction.

WRAP Staff will provide support for OGWG calls and meetings. WRAP Staff will assist with arranging and documenting OGWG calls and meetings, prepare TSC workplan inputs and budgets for review and action, assist with status reports on the OGWG's activities, and provide status reports on the deliverables, budgets, and timelines for the WRAP's technical projects.

Processes

The OGWG is to conduct their business on a consensus basis. Consensus has the following parameters:

- Consensus is agreement.
- Consensus is selection of an option that everyone can live with.
- Consensus may not result in the selection of anyone's first choice, but everyone is willing to support the choice.
- Consensus is not a majority vote.

When the OGWG cannot reach a consensus on an issue it will be referred to the TSC. If the TSC cannot reach a consensus on the issue it will be referred to the WRAP for resolution.

Coordination

Through the TSC, the OGWG will coordinate with the following work groups and committees as needed to ensure activities conducted in WRAP projects, and under the auspices of the OGWG provide needed support:

1. Tribal Data Work Group (TDWG);
2. Regional Technical Operations Work Group (RTOWG);
3. Fire and Smoke Work Group (FSWG);
4. Regional Haze Planning Work Group (RHPWG);
5. WESTAR Planning Committee;
6. WESTAR Technical Committee; and
7. Other groups as designated by the Board in the annual Workplan process.

OGWG Structure

The OGWG Co-Chairs were designated by the TSC and approved by the WRAP Board to lead and execute the Workplan objectives associated with the OGWG. OGWG members have applicable oil and gas expertise and provide appropriate geographic representation from the WRAP member agencies (state, tribal, local, federal) to the greatest extent possible. OGWG members will be approved by the TSC. All OGWG Co-Chairs and members are appointed for two-years. Additional individuals with applicable oil and gas expertise will be encouraged to participate in the OGWG as advisors. The OGWG structure, including identification of Co-Chairs, members, and advisors is attached and will be updated as necessary.

Project Teams

Project Teams are intended to enable non-members of the WRAP to express interest and sponsor analysis or planning projects within the scope and topics of the WRAP Charter and Strategic Plan. Project Teams will be associated with a discrete, defined project for which the non-member sponsor is providing funding and expertise resources. The Project Teams are intended to allow sponsor participation and will include members of WRAP Work Groups and TSC, WRAP Staff, and non-member sponsors. Information will be included in the Annual Workplan to define the scope, membership and duration of each Project Team.

Project Teams that may be beneficial to the OGWG as future funding allows:

- Continue the Drill Rig 1-hour NO₂ Collaborative Study
- Implement the Collaborative Air Landscape-Scale Management Pilot (CALM) Study – Oil and Gas development impacts in the intermountain west

Oil & Gas Work Group	Deliverable	Source	Funding	Timeline
	Develop communication plan to distribute Oil and Gas Work Group work products	Workgroup	In-kind work, WRAP Budget SharePoint Development	2 nd Quarter 2017

Identify Oil and Gas Work Group action items that will require coordination with WRAP and WESTAR work groups and committees	Workgroup	In-kind work	2 nd Quarter 2017
Oil and Gas Work Group Scope: Identify Oil and Gas sources for the entire upstream and midstream sectors Identify WRAP member agencies dealing with oil and gas sources	Workgroup	In-kind work	2 nd Quarter 2017
Review Oil and Gas Specific Workproducts: review existing workproducts to identify and discuss relevance, strengths, areas for improvement, and gaps	Workgroup will initiate and continue to explore if additional assistance is necessary	Initiate in-kind work and continue to explore if funding is necessary	4 th Quarter 2017
Identify regional and local air quality planning needs: Regional Haze, Ozone, Climate Change, Hazardous Air Pollutants, and Other Air Pollution Indicators	Workgroup will initiate and continue to explore if additional assistance is necessary	Initiate in-kind work and continue to explore if funding is necessary	4 th Quarter 2017

Action Items for Workplan

- I. OGWG Management
 - a. Determine work group size, geographic representation, member agency representation
 - b. OGWG requesting participation of members or advisors
 - c. Schedule of monthly (bi-monthly) meetings
 - d. Quarterly reports to TSC
 - e. Yearly accomplishment narrative to TSC and WRAP board
 - f. Schedule for work project completion with milestones of progress
 - g. Develop communication plan to distribute OGWG work products
 - h. Identify OGWG action items that will require coordination with WRAP and WESTAR work groups and committees
- II. OGWG Scope
 - a. Identify Oil and Gas sources for the entire upstream and midstream sectors
 - b. Identify WRAP member agencies dealing with oil and gas sources
- III. Member Agency Oil & Gas Programs
 - a. Provide information on existing programs
 - i. Identify permitting and registration requirements
 - ii. Identify emissions management requirements
 - iii. Identify emissions inventory requirements
 - iv. Identify modeling requirements
 - v. Identify monitoring requirements
 - b. Identify and discuss information strengths, areas for improvement, and gaps
 - c. Discuss needs of agencies without existing programs
 - d. Develop a basic oil and gas program example
- IV. Oil & Gas Emissions Inventory
 - a. Identify regional and local air quality planning needs
 - i. Regional Haze
 - ii. Ozone: NAAQS, background, transport
 - iii. Climate Change (methane emissions)
 - iv. Hazardous Air Pollutants
 - v. Other air pollution indicators

- b. Identify emission factors and speciation profiles for oil and gas sources: national, regional, local
 - c. Identify and discuss emissions inventory strengths, areas for improvement, and gaps
 - d. Implement regionally-consistent emissions inventories
 - e. Identify projection methodologies
 - f. Implement regionally-consistent future year projections
 - g. Make technical improvements to emissions inventories
- V. Oil & Gas Modeling Studies
- a. Identify regional and local air quality planning needs
 - i. Regional Haze
 - ii. Ozone: NAAQS, background, transport
 - iii. Climate Change (methane emissions)
 - iv. Hazardous Air Pollutants
 - v. Other air pollution indicators
 - b. Identify existing impact analysis
 - c. Identify regional and local air quality planning needs
 - d. Identify and discuss modeling strengths, areas for improvement, and gaps
 - e. Determine present and range of future year oil and gas contributions
- VI. Oil & Gas Monitoring Studies
- a. Identify regional and local air quality planning needs
 - i. Regional Haze
 - ii. Ozone: NAAQS, background, transport
 - iii. Climate Change (methane emissions)
 - iv. Hazardous Air Pollutants
 - v. Other air pollution indicators
 - b. Identify existing monitoring studies
 - c. Identify regional and local air quality planning needs
 - d. Identify and discuss monitoring strengths, areas for improvement, and gaps
- VII. Oil & Gas Emissions Management
- a. Identify existing emissions management requirements: state, tribal, local, federal
 - b. Identify proposed emissions management requirements: state, tribal, local, federal
 - c. Identify and discuss potential requirement overlap and authority concerns
- VIII. OGWG Administration
- a. Development of budgets for projects
 - b. Travel budget proposal for WRAP twice yearly meeting
 - c. Summary budget for OGWG activities
 - d. Write annual OGWG workplan

Action Items for 2017 Workplan

- I. OGWG Management
 - a. Determine work group size, geographic representation, member agency representation
 - b. OGWG requesting participation of members or advisors
 - c. Schedule of monthly (bi-monthly) meetings
 - d. Quarterly reports to TSC
 - e. Yearly accomplishment narrative to TSC and WRAP board
 - f. Schedule for work project completion with milestones of progress
 - g. Develop communication plan to distribute OGWG work products
 - h. Identify OGWG action items that will require coordination with WRAP and WESTAR work groups and committees
- II. OGWG Administration
 - a. Development of budgets for projects
 - b. Travel budget proposal for WRAP twice yearly meeting
 - c. Summary budget for OGWG activities
 - d. Write annual OGWG workplan

- III. OGWG Scope
 - a. Identify Oil and Gas sources for the entire upstream and midstream sectors
 - b. Identify WRAP member agencies dealing with oil and gas sources
- IV. Review Oil and Gas Specific Work Products
 - a. Review existing work products to identify and discuss relevance, strengths, areas for improvement, and gaps
 - i. Western Regional Air Partnership
 - ii. National Oil and Gas Emissions Committee Information Repository
 - iii. National Oil and Gas Emissions Analysis Project
 - iv. Intermountain West Data Warehouse – Western Air Quality Study
 - v. Other relevant work products
- V. Identify regional and local air quality planning needs
 - a. Regional Haze
 - b. Ozone: NAAQS, background, transport
 - c. Climate Change (methane emissions)
 - d. Hazardous Air Pollutants
 - e. Other air pollution indicators

Budget

WRAP only has funds for OGWG conference call support, SharePoint development, and minimal travel reimbursements for the co-chairs to attend Technical Steering Committee working meetings.

FUNDING NEED	FUNDING REQUEST
Conference Call Support	WRAP Budget
SharePoint Development	WRAP Budget

Appendix F

Regional Technical Operations Work Group 2017 Workplan

The WRAP Workplan set up topical Work Groups including the Regional Technical Operations Work Group (RTOWG). Since its inception in the WRAP Strategic Plan and Vision Statement, the mission statement for RTOWG is to, “Provide a forum for regional collaboration on technical and planning topics of common interest to the members”. Over the past several years, various efforts by regional, federal, state, and local groups have developed infrastructure upon which the RTOWG can effectively build a forum for regional collaboration for technical analysis and planning. Some of the platforms that exist within the WRAP region include the Intermountain West Data Warehouse (IWDW), the Air Information Report for Public Access and Community Tracking (NW-Airquest and AIRPACT), various state and local State Implementation Plan (SIP) analysis, special studies such as FRAPPE/Discovery AQ, UBAQS and Four Corners Study. The IWDW and AIRPACT platforms are readily adaptable for air quality planning purposes for the NAAQS, Regional Haze, and other programs, pending available resources and coordination with sponsoring agencies.

The Regional Technical Operations Work Group will focus on regional analysis in support of planning activities related to emissions and modeling for regional haze, ozone, PM, and other indicators’ background and regional transport, sensitivity and other analyses of emissions data focused on the western U.S., and perform and leverage modeling, data analysis, and contribution assessment studies. Work will include investigation of “background ozone” impacts to western U.S. locations, coordination and collaboration with other WRAP member-sponsored regional air quality modeling groups including IWDW, NW-AIRQUEST, EPA-OAQPS, BAAQMD, and other state agencies doing regional ozone modeling, providing guidance on more complete and uniform model performance evaluations (MPEs), and developing and implementing a protocol to use the IWDW-WAQS capabilities as the WRAP Regional Technical Center. Several of these activities involve close coordination with other WRAP Work Groups as described in the RTOWG Workplan

Action Items for 2017 Workplan – *not yet identified, pending additional direction from PHPWG and other WRAP Work Groups*

Duties and WRAP Staff Support

In consultation with the Chair or Co-Chairs from the Regional Technical Operations Work Group (RTOWG), the Technical Steering Committee (TSC) will review and seek Board approval of a written workplan to address and include all the elements for each Work Group, specific to RTOWG as described in Section I of the Annual WRAP Workplan. Based on these elements, the RTOWG is then charged with creating detailed workplan inputs to the WRAP annual workplan for achieving these objectives. The RTOWG workplan will include a schedule for progress reports to the TSC (quarterly and annual summary) and a schedule for project completion. The RTOWG will work with WRAP staff to have progress reports posted to the WRAP website. The RTOWG and other Work Groups are responsible for translating technical materials into a form understandable by the TSC, Board, and general public. The RTOWG has the additional responsibility for ensuring the best information and data are available for air quality planning across the region, with WRAP Staff support.

The RTOWG will have conference calls on alternating months to manage activities and provide oversight to WRAP projects. The RTOWG will provide inputs to the TSC for an annual WRAP workplan and budget for Board approval, covering technical projects and Work Groups. The RTOWG may have meetings identified in the annual workplan. The RTOWG Chair or Co-Chairs will plan and direct the calls and meetings, and with assistance from WRAP Staff, take the lead in communications and other necessary TSC and Board interaction.

WRAP Staff will provide support for RTOWG calls and meetings. WRAP Staff will assist with arranging and documenting RTOWG calls and meetings, prepare TSC workplan inputs and budgets for review and action, assist with status reports on the RTOWG’s activities, and provide status reports on the deliverables, budgets, and timelines for the WRAP’s technical projects.

Processes

The RTOWG is to conduct their business on a consensus basis. Consensus has the following parameters:

- Consensus is agreement.
- Consensus is selection of an option that everyone can live with.
- Consensus may not result in the selection of anyone's first choice, but everyone is willing to support the choice.
- Consensus is not a majority vote.

When the RTOWG cannot reach a consensus on an issue it will be referred to the TSC. If the TSC cannot reach a consensus on the issue it will be referred to the WRAP for resolution.

Coordination

Through the TSC, the RTOWG will coordinate with the following work groups and committees as needed to ensure activities conducted in WRAP projects, and under the auspices of the RTOWG provide needed support:

1. Tribal Data Work Group (TDWG);
2. Fire and Smoke Work Group (FSWG);
3. Oil and Gas Work Group (OGWG);
4. Regional Haze Planning Work Group (RHPWG);
5. WESTAR Planning Committee;
6. WESTAR Technical Committee; and
7. Other groups as designated by the Board in the annual Workplan process.

The RTOWG will hold monthly/bi-monthly conference calls with members to provide an update on activity status and coordinate future work. Initial calls will be held monthly (February, March, April), and then bimonthly. A survey of topics will be provided to RTOWG members to identify and prioritize areas of interest.

Agendas, reports, and other documents will be shared with the existing IWDW infrastructure.

<http://views.cira.colostate.edu/tsdw/>

RTOWG Co-Chairs

Mike Barna, National Park Service

Kevin Briggs, Colorado Department of Public Health and Environment

Gail Tonnesen, EPA Region 8

Action Items for Workplan

XIII. RTOWG Management

- a. Membership in RTOWG, letter requesting participation
- b. Determine minimum number needed on workgroup
- c. Schedule of bimonthly meetings
- d. Quarterly reports to TSC
- e. Yearly accomplishment narrative to TSC and WRAP board

- f. Schedule for work project completion with milestones of progress
- XIV. Coordinate with other Work Groups to identify air quality modeling products that will be relevant to their Workplans
- a. Tribal Data Work Group
 - i. Simulated air quality impacts and comparison to Tribal monitoring sites
 - ii. Identifying regions of high air pollutant impacts
 - b. Fire and Smoke Work Group
 - i. Coordinate fire emission inventory development suitable for air quality modeling
 - ii. Evaluate impacts from fire emissions on regional air quality
 - c. Oil and Gas Work Group
 - i. Coordinate oil and gas inventory development suitable for air quality modeling
 - ii. Evaluate impacts from oil and gas emissions on regional air quality
 - d. Regional Haze Planning Work Group
 - i. pending additional direction
- XV. Participate in upcoming science conferences
- a. Background Ozone Scientific Assessment Workshop (March 28-29, 2017, Denver, CO)
 - b. FRAPPE/Discover AQ Science Meeting (May 2-4, 2017, Boulder, CO)
 - c. Western Air Quality Modeling Conference (Sept. 6-8, 2017, Boulder, CO)
 - d. Community Modeling and Analysis Meeting (CMAS) (October 2017, Chapel Hill, NC), and
 - e. Other meetings and workshops as they are scheduled.
- XVI. Leverage opportunities and work by WRAP member-sponsored technical centers as well as other technical and scientific groups to:
- a. Investigate “background ozone” impacts to western U.S. locations, utilizing recommendations from the March 28-29 Background Ozone workshop and subsequent journal publication
 - i. Coordinate western regional ozone analyses with the planned collaborative effort among BAAQMD, CARB, and the Coordinating Research Council (CRC). At this point, both BAAQMD and CRC have approved funding.
 - ii. Coordinate and collaborate with other WRAP member-sponsored regional air quality modeling groups including IWDW, NW-AIRQUEST, EPA-OAQPS, BAAQMD, and other state agencies doing regional ozone modeling.
 - iii. Develop an assessment protocol for modeling studies, include trans-Pacific sources, Mexico and Canada sources, and “natural” sources
 - iv. Assess coordination opportunities with academic and other modeling groups.
 - b. Provide guidance on more complete and uniform model performance evaluations (MPEs)
 - i. Identify key model performance statistics and representative figures to apply to regional air quality and meteorology simulations.
 - ii. discuss/specify what we mean by “benchmarks” in the context of model evaluation.
 - iii. Work with IWDW-WAQS, EPA OAQPS

- iv. Reference docs
 - v. Identify outcomes and committed participants to write and test
- c. Develop and implement a protocol to use the IWDW-WAQS capabilities as the WRAP Regional Technical Center
- i. Expand existing modeling domains to include other states. Also, evaluate additional modeling year (i.e. 2015, 2016) that fall outside the triannual NEI (i.e. 2014)
 - ii. Expand IWDW-WAQS modeling domain
 - iii. Incorporate additional states of MT, ND, SD
 - iv. Add other western and central states?
 - v. Other?

XVII. Provide modeling products to FLAG (Federal Land Managers' Air Quality Related Values Work Group)

- a. Single source evaluations using a photochemical grid model
- b. Inputs on MERPS
- c. Simulation results for criteria pollutants (e.g., ozone, NOx) and AQRVs (visibility, nitrogen deposition)
 - i. Identify “hot spots”
 - ii. Identify unmonitored regions of concern
- d. Evaluation of “secondary” ozone (e.g., W126).

XVIII. RTOWG Administration

- a. Development of budgets for projects as resources are available
- b. Summary budget for RTOWG activities
- c. Write 2018 RTOWG work plan

Budget

WRAP only has funds for RTOWG conference call support and IWDW staff support for RTOWG task tracking, documentation, and webpage support.

FUNDING NEED	FUNDING REQUEST
Conference Call Support	WRAP Budget
IWDW staff support for RTOWG	WRAP Budget

Appendix G

Tribal Data Work Group 2017 Workplan

There are 480 federally recognized Tribes within the 15 states that comprise the Western Regional Air Partnership (WRAP) area of interest. Many of these, 242, are in the state of Alaska, while the remaining Tribes (238) are spread throughout the Environmental Protection Agency (EPA) Regions 8, 9, the lower three states of 10 and New Mexico in Region 6. There are at least 61 Tribal air quality programs in the WRAP area, excluding those in Alaska. WRAP currently has 23 member tribes.

EPA Region	Number of Tribes	Number Tribes with Air Quality Programs ¹
6 New Mexico	21	2
8	27	14
9	148	30
10	42	15
10 Alaska	242	

¹Based on the 2016 NTAA State of Tribal Air Quality Report. Highest number of Tribes monitoring or conducting Emissions Inventories

Each Tribal air quality program encompasses unique needs and requires specific emphasis to meet their goals. There are however, certain common themes that weave them together including:

4. Staff (capacity) – many programs have one or two people to address the complexities of air quality. Some Tribes experience turnover in positions that tend to keep them at a lower level of performance compared to long-term stable programs.
5. Funding – Most tribal air programs are funded by EPA Clean Air Act (CAA) 103, 105, Direct Implementation Tribal Cooperative Agreements (DITCA), or Indian General Assistance Grant (IGAP) grant programs. IGAP and 103 grants are used to build capacity while DITCA and 105 grants are awarded to programs that have built their capacity and capability to operate long-term.
6. Training (capability) – New personnel to Tribal air programs may not always possess the basic knowledge or experience needed to manage the program. Opportunities to expand skills are available to Tribal professional, from several sources specific to Tribes and are imperative to building capacity and capability.

By virtue of numbers and geographic spread a large amount of variability exists in the needs and goals of Tribal air programs. To capture how WRAP can help meet these needs the Tribal Data Work Group (TDWG) will first undertake data gathering on the size, complexity, and scope of tribal air needs in the WRAP states. After that initial effort the workgroup will address how to provide services and help solve Tribal needs.

Duties and WRAP Staff Support

In consultation with the Chair or Co-Chairs from the TDWG, the Technical Steering Committee (TSC) will review and seek Board approval of a written workplan to address and include all the elements for the Work Group as described in Section I of the Annual WRAP Workplan. Based on these elements, the TDWG is then charged with creating detailed workplan inputs to the WRAP annual workplan for achieving these objectives. The TDWG workplan will include a schedule for progress reports to the TSC (quarterly and annual summary) and a schedule for project completion. The TDWG will work with WRAP staff to have progress reports posted to the WRAP website. The TDWG and other Work Groups are responsible for translating technical materials into a form understandable by the TSC, Board, and general public. The TDWG has the additional responsibility for ensuring the best information and data are available for air quality planning across the region, with WRAP Staff support.

The TDWG will have conference calls on alternating months to manage activities and provide oversight to WRAP projects. The TDWG will provide inputs to the TSC for an annual WRAP workplan and budget for Board approval, covering technical projects and Work Groups. The TDWG may have meetings identified in the annual workplan.

The TDWG Chair or Co-Chairs will plan and direct the calls and meetings, and with assistance from WRAP Staff, take the lead in communications and other necessary TSC and Board interaction.

WRAP Staff will provide support for TDWG calls and meetings. WRAP Staff will assist with arranging and documenting TDWG calls and meetings, prepare TSC workplan inputs and budgets for review and action, assist with status reports on the TDWG's activities, and provide status reports on the deliverables, budgets, and timelines for the WRAP's technical projects.

Processes

The TDWG is to conduct their business on a consensus basis. Consensus has the following parameters:

- Consensus is agreement.
- Consensus is selection of an option that everyone can live with.
- Consensus may not result in the selection of anyone's first choice, but everyone is willing to support the choice.
- Consensus is not a majority vote.

When the TDWG cannot reach a consensus on an issue it will be referred to the TSC. If the TSC cannot reach a consensus on the issue it will be referred to the WRAP board for resolution.

Coordination

Through the TSC, the TDWG will coordinate with the following work groups and committees as needed to ensure activities conducted in WRAP projects, and under the auspices of the TDWG provide needed support:

1. Regional Technical Operations Work Group (RTOWG);
2. Fire and Smoke Work Group (FSWG);
3. Oil and Gas Work Group (OGWG);
4. Regional Haze Planning Work Group (RHPWG);
5. WESTAR Planning Committee;
6. WESTAR Technical Committee; and
7. Other groups as designated by the Board in the annual Workplan process.

The TDWG will participate in a SharePoint site or other similar arrangement coordinated by WRAP staff, which enables collaboration on projects within the group and with other workgroups. Access will be provided to all members of the Technical Steering Committee, TDWG, and co-chairs of other workgroup. The TDWG believes this will foster great communications and enhance collaboration.

The TDWG may decide to coordinate information gathering efforts with other Tribal organizations such as the National Tribal Air Association (NTAA) and the Tribal Air Monitoring Support Center (TAMS) Steering Committee. These entities actively support Tribal air programs and gather information that would benefit the work of the TDWG.

National Tribal Air Association – <http://www7.nau.edu/itep/main/ntaa/>

Tribal Air Monitoring Support Center - <http://www7.nau.edu/itep/main/tams/>

TDWG Co-chairs

Carolyn Kelly, Quinault Indian Nation
Kris Ray, Confederated Tribes of the Colville Reservation

Members

Participation in the TDWG will be dynamic and evolving depending on projects being addressed and interests of the work group's members. Therefore, a members list will be provided as attachment 1 and will be updated by the co-chairs when needed. Although a Tribal focus exists, the TDWG encourages other interested parties to join the group.

Tribal Data Workgroup Action Items for 2017 Workplan			
Deliverable	Source	Funding	Time line
Administrative Projects			
Develop SharePoint site to house TDWG documents and projects.	WRAP Staff	WRAP Budget	March 1, 2017
Help Tribes understand the benefits of using WRAP and WESTAR products and services	TDWG, WRAP Staff, other workgroups	In-Kind	July 1, 2017
Change Section F title to – Support Development of Tribal Air Quality Capacity and Capability and rewrite narrative	TDWG and WRAP Staff	In-Kind	Completed
Solicit Tribal membership in WRAP and participation in the TDWG	TDWG and WRAP Staff	In-Kind	September 1, 2017
Schedule TDWG meeting and provide activity reports	TDWG and WRAP Staff	In-Kind	September 1, 2017
Co-Chairs attendance at Technical Steering Committee In-person Meeting, 2 meeting per year	TDWG Co-Chairs	\$4,800	December 1, 2017
Information Gathering Project			
Assessment of the status of Tribal air quality monitoring, AQS, and emissions inventories	TDWG, WRAP Staff and IWDW	In-Kind	September 1, 2017
WRAP General Projects			
Determine the types of Tribal data needs for WRAP projects and deliverables	TDWG, WRAP Staff, RTOWG RHPWG, OGWG, and FSWG	In-Kind	September 1, 2017
Provide educational opportunities for WRAP member Tribes and Tribes within the area of interest.	TDWG and WRAP Staff	In-Kind and supplemental funds	December 1, 2017

Multi-year Action Items

The majority of this work plan spans many years of potential effort by the TDWG to provide needed information and services to the WRAP membership. Not all of the identified tasks will be addressed immediately due to time constraints and funding while others are considered ongoing. Ongoing action items will be identified in the multi-year list only. The 2017 action items identified by consensus will guide this year's work load as listed later in this document.

- I. TDWG Management
 - a. Membership in TDWG letter requesting participation by WRAP Tribes – ongoing yearly request
 - b. WRAP Tribal membership recruitment from Tribes in the 15 state area – ongoing

- c. Schedule of quarterly meetings – ongoing
 - d. Quarterly reports to TSC – ongoing
 - e. Yearly accomplishment narrative to TSC and WRAP board - ongoing
 - f. Schedule for work project completion with milestones of progress - ongoing
 - g. Develop SharePoint site to house TDWG documents and projects
- II. TDWG Emissions Inventory
- a. Identify WRAP member tribes dealing with oil and gas production emissions
 - b. Identify emission factors for the oil and gas industry and make available
 - c. Conduct WRAP member tribe oil and gas industry emission inventory
 - d. Provide information on the benefits to Tribes for having an emission inventory
 - e. Identify barriers for conducting an EI
 - f. Develop strategy and options to help WRAP member Tribes submit data to National Emissions Inventory (NEI)
 - g. Coordinate with the oil and gas workgroup to disseminate information to Tribes.
- III. TDWG Air Quality System (AQS)
- a. Identify which WRAP member Tribes and those in the area of concern are submitting data to AQS
 - b. Identify barriers that exist that keep Tribes from submitting AQS data
 - c. Provide information on the benefits to Tribes for submitting AQS data
 - d. Develop strategy to help WRAP member Tribes submit data
- IV. TDWG Air Quality Monitoring
- a. Identify air pollutants Tribes are monitoring
 - b. Identify equipment used for monitoring
 - c. Determine goal of monitoring
 - d. Identify unmet monitoring needs
 - e. Discuss role of sensor technology for monitoring
- V. TDWG Tribal Data Analysis Activities
- a. Determine types of Tribal data WRAP is interested in
 - b. Identify how Tribes collected this data
 - c. Determine how Tribes could share this data
 - d. Identify capacity building for Tribes not collecting this data
 - e. Identify data that Tribes would like to collect and determine how this could be accomplished
- VI. TDWG Modeling
- a. Identify data that could benefit WRAP modeling projects
 - b. Provide Tribal programs training to utilize WRAP products
- VII. TDWG Capacity Building
- a. Provide educational opportunities for WRAP member Tribes
 - b. Determine barriers to data submittal to EPA's AQS and EI systems
 - c. Facilitate an Institute for Environmental Professionals (ITEP) mini course on selected subjects for WRAP member Tribes
 - d. Identify Tribal data collection needs and determine a strategy for those
 - e. Review Intermountain Data Warehouse resources in respect to how tribes can utilize it
 - f. Help Tribes understand all of the benefits for using WRAP and Western States Air Resources Council (WESTAR) products and services
 - g. Develop lines of communication and joint information sharing with other organizations. Examples would be the National Tribal Air Association, Tribal Air Monitoring Support Center Steering Committee, Clean Air Act Advisory Committee, and the Northwest Air Quality Communicators Group
 - h. Provide lists of resources Tribal programs might need. Example – Wildfire Smoke Resource List

- i. Educate other WRAP members about Tribes; monitoring, EI, data and needs – ongoing

VIII. TDWG Administration

- a. Development of budgets for projects
- b. Travel budget proposal for WRAP twice yearly meeting
- c. Summary budget for TDWG activities
- d. Write 2018 TDWG work plan
- e. Determine how and when co-chairs are appointed

Action Items for 2017 Workplan

The 2017 workplan action items were selected and prioritized by consensus of the TDWG. A detailed plan for each will be developed by the TDWG to provide specific goals, processes and uses of the information gathered. These detailed action item plans will be added to the main plan as an attachment. The TDWG may decide to group several action items into one project. The TDWG expects that after the initial scoping and information gathering, projects will increase in complexity and funding needs.

Administrative Projects

These projects can be accomplished by workgroup members and WRAP staff.

1. Develop SharePoint site to house TDWG documents and projects. This may be part of a TSC SharePoint site.
2. Help Tribes understand all of the benefits for using WRAP and WESTAR products and services
3. Change Section F title to – Support Development of Tribal Air Quality Capacity and Capability and rewrite narrative

Information Gathering Project

Tasks identified here can be combined into a single project or can be addressed separately. Tasks can also be completed by utilizing other organizations information gathering efforts. The TAMS Steering Committee will be gathering information concerning air quality monitors utilized by Tribes. That project identifies the monitors used, what pollutants are being sampled, meteorological equipment, and location. Data will be collected for the entire nation but can be sorted by EPA region. The NTAA compiles information every year into a State of Tribal Air Report (STAR). Information for Emissions inventories and Air Quality System reporting may be gleaned from that effort. The most difficult task to complete will be the identification of barriers and how to minimize them to submitting NEI and AQS data by Tribal programs.

1. Provide information on the benefits to Tribes for having an emission inventory
2. Identify barriers for conducting an EI
3. Develop strategy to help WRAP member Tribes submit data to NEI
4. Identify which WRAP area Tribes are submitting data to AQS
5. Identify existing barriers that prevent Tribes from submitting AQS data
6. Identify air pollutants Tribes are monitoring
7. Identify equipment used for monitoring

WRAP General Projects

These projects can be tackled individually and will help tie the other projects together.

1. Identify WRAP member tribes dealing with oil and gas production emissions; will coordinate with the OGWG.
2. Determine the types of Tribal data WRAP is interested in to help with the modeling efforts and where that data is available; will coordinate with the RTOWG

3. Provide educational opportunities for WRAP member Tribes and Tribes within the area of interest. These opportunities could be in the form of webinars, classroom, or phone conference discussions. The TDWG will identify subjects, method of presentation and venues along with implementation costs during this workplan year.

Budgets

WRAP only has funds for TDWG conference call support and SharePoint development.

Funding Need	Funding Request
Conference Call Support	WRAP Budget
SharePoint Development	WRAP Budget
Educational Opportunity	Unknown, depends on format and venue costs