

2018-2019 WRAP Workplan

adopted by the WRAP Board on April 4, 2018

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**Regional Technical Operations Work Group 2018-2019 Workplan**

The WRAP Workplan established 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. The modeling center selected by the RTOWG for regional modeling in this workplan is the [Intermountain West Data Warehouse](https://views.cira.colostate.edu/iwdw/) (IWDW) – Western Air Quality Study (WAQS). The IWDW-WAQS modeling center will be directly applying its resources to support and deliver WRAP regional modeling work efforts described in this workplan, readily adaptable for air quality planning purposes for the NAAQS, Regional Haze, and other programs, utilizing available resources from, and through coordination with, sponsoring agencies of the IWDW-WAQS and WRAP members.

The focus of the Regional Technical Operations Work Group includes:

* Regional analysis in support of planning activities related to emissions and modeling for regional haze, ozone, PM, and other indicators;
* Background and regional transport, international transport, sensitivity and other analyses of emissions data focused on the western U.S.;
* Perform and leverage modeling, data analysis, and contribution assessment studies;
* Investigation of “background ozone” impacts to western U.S. locations;
* Coordination and collaboration with the WRAP member-sponsored IWDW-WAQS regional air quality modeling center, and leveraging work by groups including NW-AIRQUEST, EPA-OAQPS, and other state and local agencies performing regional modeling;
* Provide guidance on more complete and uniform model performance evaluations (MPEs);
* Several of these activities involve close coordination with other WRAP Work Groups and Subcommittees of the Regional Haze Planning Work Group as described in the WRAP Workplan.

The WRAP Regional Technical Center, in the form of the IWDW-WAQS, will provide data support and decision support for air quality planning in the WRAP region and will be comprised of three components. The IWDW-WAQS website provides storage of all the data required to support regional air quality modeling including meteorological, emission inventories, air quality modeling platforms, and monitoring data, and the website hosts the results of a variety of western air quality modeling activities. The IWDW-WAQS provide the data support. Planning decision support will be in the form of the [Technical Support System v2](http://views.cira.colostate.edu/tssv2/) (TSSv2) , which will provide access to a variety of data, work products, and data analysis capabilities to support air quality planning activities. The WRAP Regional Technical Center will be the collective of the IWDW-WAQS and TSSv2 efforts..

The work that the RTOWG does and oversees often uses guidance provided by EPA and others. The EPA’s Air Quality Modeling Group (AQMG) provides guidance documents to EPA Regional, State, and Tribal air quality management authorities and the general public on how to prepare attainment demonstrations for National Ambient Air Quality Standards (NAAQS) and the Regional Haze Rule using air quality modeling and other relevant technical analyses. These guidance documents are primarily directed at modeling applications in nonattainment areas but are also useful for modeling in maintenance areas or to support other rules or sections of the Clean Air Act. These guidance documents recommend procedures for estimating if a control strategy to reduce pollutant emissions (e.g., ozone precursors) will lead to attainment of the appropriate NAAQS or visibility metric. These guidance documents are periodically updated or new documents published at the discretion of EPA-OAQPS. Some of the current applicable guidance documents include:

* [Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM2s, and Regional Haze.](https://www3.epa.gov/ttn/scram/guidance/guide/Draft_O3-PM-RH_Modeling_Guidance-2014.pdf) (3.25 MB, PDF) - December 2018 - Updated Ozone, PM2.5, and Regional Haze modeling guidance document.
* [Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze.](https://www3.epa.gov/ttn/scram/guidance/guide/final-03-pm-rh-guidance.pdf) (1 MB, PDF) - April 2007 - Final version of the Ozone, PM2.5, and Regional Haze modeling guidance document.
* [Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations](https://www.epa.gov/sites/production/files/2017-07/documents/ei_guidance_may_2017_final_rev.pdf) (149 pp, 1 MB) July 2017)

Duties of the RTOWG and WRAP Staff Support

In consultation with the Co-Chairs from the 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 a regular basis and as needed 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 and will leverage IWDW-WAQS periodic technical meetings to review and discuss work products related to the regional modeling platform. The RTOWG 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 and Subcommittes (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 conference calls on a regular basis and as needed with members to provide an update on activity status and coordinate future work. Initial calls will be held monthly. Additional calls will be scheduled as needed especially for topics of higher interest. 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. Information in regards to the IWDW-WAQS can be found at: <http://views.cira.colostate.edu/tsdw/>and on the WRAP’s regional haze planning website at:<http://www.wrapair2.org/RHPWG.aspx> **.**

RTOWG Structure

The structure of the RTOWG is very similar to the other work groups. The RTOWG Co-Chairs were designated by the TSC and approved by the WRAP Board to lead and execute the Workplan objectives associated with the RTOWG. RTOWG members are from the WRAP member agencies and represent Federal, State, Local and Tribal agencies and also represent a geographic expanse and interest across the WESTAR-WRAP region. RTOWG members generally have technical expertise in ambient air monitoring, emission inventory development, air quality modeling, data analysis, and regulatory expertise. RTOWG members are approved by the TSC. All Co-Chairs and members are appointed for two-years.

Additional individuals that are not Co-Chairs and members of the RTOWG with technical expertise are also encouraged to participate in the RTOWG as advisors. The RTOWG structure, including identification of Co-Chairs, members, and advisors is included as part of the overall work plan.

RTOWG Status Report for 2017 Workplan – was this supposed to edited?

|  |  |  |
| --- | --- | --- |
| 2017 RTOWG Task | 2017 Progress | Outstanding Tasks |
| 1. RTOWG Management | ongoing | ongoing |
| II. Coordinate with other Work Groups to identify air quality modeling products that will be relevant to their Workplans, especially for regional work in support of Regioanal Haze planning | ongoing; | ongoing |
| III. Participate in upcoming science conferences | ongoing | ongoing |
| IV. Leverage opportunities and work by WRAP member-sponsored modeling efforts as well as other technical and scientific groups. | ongoing | ongoing |
|  |  |  |

The RTOWG has completed a [Modeling Representativeness Analysis](http://www.wrapair2.org/RTOWG.aspx). The results of this analysis compare the ambient measurement data, meteorology, emissions inventory and other factors such as exceptional events that may influence the decision to use one base year (i.e. 2014 vs. 2016) over another. This work anchors the understanding of applying 2014 and 2016 modeling platforms described below in this workplan

RTOWG Action Items for 2018-2019 WRAP Workplan

Action Items for the 2018-2019 Workplan

1. RTOWG Management
   1. Recruit and retain RTOWG membership and advisors based on geographic representation, WRAP member agency representation and technical expertise. Maintain the RTOWG Members + Advisors and WG Co-Chairs and WG rosters spreadsheet
   2. Schedule and facilitate conference calls or meetings. Schedule and facilitate additional calls on an as needed basis.
   3. Quarterly reports to TSC
   4. Yearly accomplishment narrative to TSC and WRAP board
   5. Schedule for work project completion with milestones of progress
2. Coordinate with other Work Groups to identify air quality modeling products that will be relevant to their Workplans, in particular, those tasks specifically listed in Section III of the TSC workplan with the accompanied Gantt chart.

* 1. Tribal Data Work Group
     1. Simulated air quality impacts and comparison to Tribal monitoring sites
     2. Identifying regions of high air pollutant impacts
  2. Fire and Smoke Work Group
     1. Coordinate fire emission inventory development suitable for air quality modeling
     2. Evaluate impacts from fire emissions on regional air quality
  3. Oil and Gas Work Group
     1. Coordinate oil and gas inventory development suitable for air quality modeling
     2. Evaluate impacts from oil and gas emissions on regional air quality
  4. Regional Haze Planning Work Group and its Subcommittees
     1. pending additional direction – this needs text added

1. RTOWG will oversee and facilitate the following high-level Tasks which will be provided principally by contractor services, with in-kind effort and support from RTOWG members. Task examples below will require summary reports at their completion to document approach, assumptions, results, et cetera. Additional detail for planned analysis and modeling schedule is displayed in the table below the list of example tasks.
   1. Monitoring and Data analysis for most representative modeling year and modeling performance evaluation
   2. Dynamic Model Evaluation to assess Regional Haze
   3. Selection of global model simulations to be used for boundary conditions, and method for estimating natural and anthropogenic contributions to boundary conditions.
   4. Base Year (i.e., 2014 or 2016) emission processing including those inventories provided by the other work group
   5. Base Year Meteorological Modeling and meteorological model performance
   6. Base Year Air Quality Modeling
   7. Baseline period (i.e., 2013-17) representative emissions and air quality modeling for Regional Haze planning projections
   8. Future Year (i.e. 2028) emissions processing
   9. Future Year Air Quality Modeling
   10. Source Apportionment/Sensitivity Modeling
   11. Technology transfer/Make modeling platform available through the IWDW

Planned Regional Analysis and Modeling Schedule

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 2018 | 2019 | | | | | | | | | | | | 2020 | | |
|  | Dec | Jan | Feb | March | April | May | June | July | Aug | Sept | Oct | Nov | Dec | Jan | Feb | March |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Shakeout | 2014 Base Year Modeling **Platform v1 Shakeout** - Emissions Processing, Met Modeling/MPE, Global Modeling/MPE, AQ Modeling/MPE, Modeling Plan (RTOWG and contractor team) | | | |  |  |  |  |  |  |  |  |  |  |  |  |
| Project |  |  |  | 2014 Base Year Modeling **Platform v2** and 2013-2017 Representative Baseline Development - Processing of revised Emissions, AQ Modeling/MPE (RTOWG, EI&MP SC, and modeling contractor team) | | | |  |  |  |  |  |  |  |  |  |
|  | OGWG Base Year Inventory Development and Finalization | | | | |  |  |  |  |  |  |  |  |  |  |  |
|  | FSWG Base Year Inventory Development |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Task 1 | Completion of RH Monitoring Data Analysis **Round 1** (MGSSC and contractor) | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | RH Monitoring Data Analysis **Round 2** (contractor for MGSSC) | | | |  |  |  |  |  |  |  |  |  |
| Task 2 |  |  |  |  |  | Dynamic Model Evaluations for Regional Haze Progress to Date (RTOWG and contractor team) | | | |  |  |  |  |  |  |  |
| Task 3 |  |  |  |  |  |  | Assessment / possible application of data for 2016 & projections - National Collaborative Emissions Modeling Platform (RTOWG and contractor team) | | | | | | | | | |
| Task 4 |  |  |  |  | 2023 and 2028 On-the-books Emission Inventory Development (RTOWG, EI & MP SC, and contractor team) | | | | | |  |  |  |  |  |  |
|  | OGWG On-the Books 2028 Inventory Development | | | | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | OGWG Additional Reasonable Controls 2028 Inventory Development | | |  |  |  |  |  |  |  |
|  | FSWG Future Year Inventory Development | | | |  |  |  |  |  |  |  |  |  |  |  |  |
| Task 5 |  |  |  |  |  |  |  |  | 2023 and 2028 On-the-books Air Quality Modeling (RTOWG and contractor team) | | |  |  |  |  |  |
| Task 6 |  |  |  |  |  |  |  |  |  | 2028 Source Apportionment / Sensitivity / Control Scenarios Modeling (RTOWG and contractor team) | | | | | | |
| Task 7 | Data and Documentation Delivery (SDSC with modeling contractor team and IWDW / TSSv2 team) | | | | | | | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | | |
|  | **Detailed 2014 Shakeout Modeling Platform Development Activities** | | | | | | |  |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | | |
|  | 2018 | 2019 | | | | | | | | | | | |  |  | |  | |  | |  | |  | |  | |  | |  | | |
|  | Dec | Jan | Feb | March | April | May | June | July | Aug | Sept | Oct | Nov | Dec |  |  | |  | |  | |  | |  | |  | |  | |  | |
|  | 2014 Modeling Platform Shakeout | | | | | |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |
| Task 1 | Develop and Finalize Modeling Plan | | |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |
| Task 3 | Update 2014 NEI with State comments | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |
| Task 7 | Single-Source Modeling Webinar and memo | | |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |
| Task 3 |  | 2014 Emissions Modeling and Reporting / Transfer to IWDW | |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |
| Task 4 |  | 2014 Met Modeling, MPE, and Reporting / Transfer to IWDW | |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |
| Task 5 |  | Process Global Modeling for BC / Transfer to IWDW | |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |
| Task 3 |  |  | 2014 Emissions Summary Reporting |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |
| Task 6 |  |  | 2014 PGM Configuration, MPE, Annual Runs, Sensitivity Testing, and Reporting / Transfer to IWDW |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |
| Task 12 |  |  |  | Shakeout Close-out Meeting |  |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |

1. Participate in upcoming science conferences – regional and national meetings and workshops as they are scheduled.

As time permits and WRAP members’ interest warrants in 2019, organize and facilitate the bi-annual workshop on western modeling and emission inventory efforts.

1. Leverage opportunities and work by WRAP member-sponsored technical centers as well as other technical and scientific groups to:

* 1. Investigate “background ozone” impacts to western U.S. locations, utilizing recommendations from the March 28-29, 2017 Background Ozone workshop and subsequent journal publication
     1. Coordinate western regional ozone analyses with the planned collaborative effort among BAAQMD, CARB, and the Coordinating Research Council (CRC).
     2. Coordinate and collaborate with other WRAP member-sponsored regional air quality modeling groups including IWDW, NW-AIRQUEST, EPA-OAQPS, BAAQMD, and other state and local agencies doing regional ozone modeling.
     3. Develop an assessment protocol for modeling studies to understand international anthropogenic contribution to include trans-Pacific sources, Mexico and Canada sources, and “natural” sources
     4. Assess coordination opportunities with academic and other modeling groups.
  2. Provide guidance on more complete and uniform model performance evaluations (MPEs)
     1. Identify key model performance statistics and representative figures to apply to regional air quality and meteorology simulations.
     2. Discuss/specify what we mean by “benchmarks” in the context of model evaluation.
     3. Work with IWDW-WAQS, EPA OAQPS
     4. Reference docs
     5. Identify outcomes and committed participants to write and test
  3. Develop and implement a protocol to use the IWDW-WAQS capabilities as the WRAP Regional Technical Center
     1. Assess the adequacy of a 12 km grid resolution modeling platform and develop procedures for nesting down from 12 to 4 km grid resolution if needed.
     2. Evaluate additional modeling year (i.e. 2015, 2016) that fall outside the triannual NEI (i.e. 2014)
     3. Assess expansion and grid resolution of IWDW-WAQS modeling domain
     4. Address the IWDW-WAQS expansion to include additional states of MT, ND, SD
     5. Address any additional expansion to add other western and central states?

1. RTOWG Administration
   1. Development of budgets for projects as resources are available
   2. Summary budget for RTOWG activities
   3. Write and track progress on 2018-19 RTOWG work plan