Date	Author	Document Type	Document Title	Brief Description
9/11/2018	USEPA - OAR	Announcement	EPA Releases Regional Haze Reform Roadmap https://www.epa.gov/ visibility/epa- releases-regional- haze-reform-roadmap	 Announcement of release of the Regional Haze Reform Roadmap. Acting Administrator Andrew Wheeler signed the announcement, which outlines how USEPA staff should take action to provide adequate support for states in implementing their RH programs in a timely and efficient manner. The OAR will continue to release implementation tools and guidance documents over the next year to help focus states' efforts in RH planning. EPA will also conduct notice-and-comment rulemaking to potentially update certain aspects of the RH Rule.
8/31/2018 (Last Updated)	WRAP	Web Page	Regional Haze Planning Work Group https://www.wrapair2 .org/RHPWG.aspx	 Home page of the Regional Haze Planning Work Group offering brief background on the group and links to relevant pages Page contains links to the following subcommittees: Monitoring Data and Glide Path Emissions Inventory and Modeling Protocol Control Measures Shared Database Consultation and Coordination Page summarizes recent activities such as meetings and workshops, providing links to meeting minutes, call notes, recordings, presentation slides, etc. Page provides links to relevant reference materials and guidance regarding RH.
9/13/2018 (Last Updated)	WRAP	Web Page	RHPWG - Shared Database Subcommittee http://www.wrapair2. org/RHP_SharedDB.a spx	 Main web page for the Shared Database Subcommittee of the RHPWG Describes the purpose for the subcommittee and lists out its main responsibilities which include: Advising technical contractors for the TSS shared database Reviewing and recommending database capabilities useful for planning Coordinating with other subcommittees to transition from TSS v.1 to v.2 Providing training for TSS users Provides links to meeting notes from May 2018 to the present.

Page 1 of 11 Ramboll

Date	Author	Document Type	Document Title	Brief Description
8/30/2018 (Last Updated)	WRAP	Web Page	RHPWG – Emissions Inventories and Modeling Protocol Subcommittee http://www.wrapair2.org/RHP_InvMod.aspx	 Main web page for the Emissions Inventories and Modeling Protocol Subcommittee of the RHPWG Describes the purpose and main responsibilities of the subcommittee which include: Helping to assemble Base Year emissions inventories Coordinating the Regional Inventory Forecasting 2028 emissions Working with modelers on source apportionment modeling and setting RPGs for Most Impaired Days Provides links to meeting notes from June 2018 to the present.
8/23/2018 (Last Updated)	WRAP	Web Page	RHPWG – Monitoring Data and Glide Path Subcommittee http://www.wrapair2.org/RHP_DataGlide.as px	 Main web page for the Monitoring Data and Glide Path Subcommittee of the RHPWG Describes the purpose and main responsibilities of the subcommittee which include: Determining a method for identifying Most Impaired Days Reconstructing the glide path using historical data Adjusting the natural conditions target for 2064 Provides links to meeting notes from April 2018 to the present.
8/22/2018 (Last Updated)	WRAP	Web Page	RHPWG – Control Measures Subcommittee http://www.wrapair2.org/RHP_Control.aspx	 Main web page for the Control Measures Subcommittee of the RHPWG Describes the purpose and main responsibilities of the subcommittee which include: Developing a protocol for four-factor analysis Assembling a control measure clearinghouse Provides links to meeting notes from May 2018 to the present.
8/14/2018 (Last Updated)	WRAP	Web Page	RHPWG – Consultation and Coordination Subcommittee http://www.wrapair2.org/RHP_ConsCo.asp X	 Main web page for the Consultation and Coordination Subcommittee of the RHPWG Describes the purpose and main responsibilities of the subcommittee which include: Developing protocols for consulting with FLMs, other states, and tribes Providing ongoing consultation and coordination among WRAP member agencies Coordinating regional consultation efforts Maintaining the Haze Key Contacts List. Provides links to meeting notes from May 2018 to the present.

Page 2 of 11 Ramboll

Date	Author	Document Type	Document Title	Brief Description
5/2018	WRAP	Data (2018 Glide Path Work Group Survey Responses) (Excel)	May 2018 Glide Path Work Group Survey Results	 Summary of responses received from WESTAR member states for survey related to monitoring data and the Glide Slope. Lists all survey questions and responses from CO, MT, WA, NM, ND, CA, HI, and AZ. Most states indicated they have performed little analysis on evaluating monitoring data and tracking metrics. All but 2 states indicated they would like tools or training for monitoring data evaluation. Most states indicated that they haven't determined their threshold for classifying extreme episodic events (E3).
4/4/2018	WRAP	Workplan	2018-2019 WRAP Workplan https://www.wrapair2 .org/pdf/2018- 2019%20WRAP%20W orkplan%20- %20Board%20approv ed%20April_4_2018. pdf	 Report providing summary of WRAP's goals through 2019 across all work groups, including those of the RH work group. Overall goal regarding RH is to support technical and planning analyses for RH state and tribal implementation plans. The RH work group will focus on identifying and prioritizing SIP preparation requirements and provide a schedule/framework to support regional planning. A schedule of planned check-ins and critical milestones is included for 8 Tasks for RH Planning A budget of \$125,000 per year is set for the RH work group for 2018 and 2019, specifically to staff the development of TSS v.2 at CIRA.

Page 3 of 11 Ramboll

Date	Author	Document Type	Document Title	Brief Description
1/17/2018	USEPA	Announcement	EPA's Decision to Revisit Aspects of the 2017 Regional Haze Rule Revisions https://www.epa.gov/ visibility/epas- decision-revisit- aspects-2017- regional-haze-rule- revisions	 Announcement that USEPA has decided to revisit certain aspects of the 2017 revisions to the RH Rule. A response to petitions for reconsideration of the Rule from: Southwestern Public Service Company, Entergy Services, Inc., and Cleco Power LLC Utility Air Regulatory Group State of Alaska EPA will conduct notice-and-comment rulemaking to address portions of the Rule which may include: RAVI provisions FLM consultation provisions Any other elements which USEPA believes should be considered. EPA plans to release a guidance document(s) specific to the SIPs/SIP revisions due in 2021. Prior to finalizing any new revisions to the RH Rule, USEPA will prepare a notice of proposed rulemaking and provide the opportunity for public comment.
2018	WRAP	Workplan	Key Tasks for WRAP 2018-2019 Workplan	 Plan that lists critical milestones for RH technical support and their due dates, including: Evaluation of RH Rule revisions Monitoring data evaluation Base, planning, and future year emissions data Base year model platform and MPE Future year scenarios Source apportionment and sensitivity analysis Upload of data products to TSS v.2 RPGs obtained from final modeling Milestone "due dates" are planned so that states can complete their initial efforts by early 2020, in time to conduct a review process before the SIP due date in 2021. Each main milestone contains subtasks and the report provides detailed instructions for how to complete them.

Page 4 of 11 Ramboll

Date	Author	Document Type	Document Title	Brief Description
12/2017	WESTAR	Report	Regional Haze 2021 SIP Plan Update https://www.wrapair2 .org/pdf/WESTAR%20 2021%20Regional%2 0Haze%20SIP%20Pla nning%20Update%20 (RHPWG%20v2)%20 draft%20ofDec2017.p df	 Report prepared by WRAP to provide guidance to member states in preparing their RH SIPs for the 2nd IP (due July 2021). Report identifies required elements of the SIPs and the estimated time to complete them. Advises that states first review the USEPA RH Rule and Guidance and then prepare a Regional Workplan before drafting the RH SIP and going through a public review process. Key items to be included in the SIPs are: IMPROVE Monitoring Data Analysis Emissions Inventories Visibility Improvement Strategies Reasonable Progress Goals Met/Emissions Modeling Includes breakdown of USEPA Regional Haze Rule with simple text summary of each subpart.
7/2017	USEPA	Guidance	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	 Guidance issued by the USEPA on how to develop emission inventories to meet the requirements of the ozone and PM_{2.5} NAAQS and the RH regulations. The guidance reviews the existing requirements related to emission inventories for the 1st RH IP, as well as subsequent RH IPs. Table 6 in the guidance (page 17) outlines the main components of RH SIP emission inventories, the statutory basis for those components, and the relevant sections in the guidance document. Table 8 in the guidance (page 35) discusses the proper timing for emission inventory components. May 2018 training by USEPA¹

https://www.epa.gov/sites/production/files/2018-07/emissions inventory guidance training final.pptx

Page 5 of 11 Ramboll

¹ Presentation slideshow from this training is available online at:

Date	Author	Document Type	Document Title	Brief Description
1/10/2017	USEPA	Federal Register	Protection of Visibility: Amendments to Requirements for State Plans https://www.gpo.gov /fdsys/pkg/FR-2017- 01-10/pdf/2017- 00268.pdf	 Federal Register for USEPA Final Rule for revisions to CAA requirements for visibility protection in Class 1 areas. Revisions include updates to: The relationship between LTS and RPGs in state plans and the LTS obligations of all states. Requirements for periodic comprehensive revisions of SIPs. The set of days used to track progress towards natural visibility conditions. Flexibility in addressing visibility impacts from prescribed fires and anthropogenic sources from outside the U.S. Administrative requirements for progress reports. Provisions for RAVI (including the revoking of most existing RAVI FIPs). The due date for SIP revisions changed from July 31, 2018 to July 31, 2021.
2017	WRAP	Data (2017 Regional Haze Survey Responses)	Responses to Survey Questions for Regional Haze https://www.wrapair2 .org/pdf/WRAP%20Re gional%20Haze%20S urvey%20Reponses.p df	 Summary of responses received from WESTAR member states for the 2017 Regional Haze Survey. The purpose was to identify concerns/needs for each state ahead of writing their new RH SIPs. In the document, questions are recreated from the survey and the responses are provided on a state by state basis for open ended questions (e.g., "Please briefly describe") and as percentages or number of responses for multiple choice questions. All WESTAR states responded except OR. Each state provided names of their FLMs and contacts at their local agencies who are familiar with the RH process. The items almost every state (≥ 80%) identified as needing assistance with were Setting RPGs, Projecting Future IMPROVE Data (2028), Photochemical Grid Monitoring, Determining International Contributions, and Assessing In-Country but Out-of-State Contributions. All state but South Dakota have SMPs. 80% of states indicated Training, External Funding, and Facilitated Meetings with Interest Groups or Stakeholders as actions that should be taken to facilitate RH SIP preparation.

Page 6 of 11 Ramboll

Date	Author	Document Type	Document Title	Brief Description
8/22/2016	WESTAR	Comment Letter	WESTAR Comments on Regional Haze Guidance http://www.westar.or g/RHSIP/WESTAR%2 ORH%20guidance%2 Ocomment%20letter0 82016.pdf http://www.westar.or g/RHSIP/WESTAR%2 ORH%20guidance%2 Ocomments%20Attac hment.pdf (attachment)	 Letter developed by WESTAR staff, reviewed by Committees, approved by WESTAR Council, and signed by Terry O'Clair, former WESTAR President. Letter contains the following key comments by WESTAR regarding the USEPA's Draft Guidance on Progress Tracking Metrics, Long-term Strategies, Reasonable Progress Goals and Other Requirements for Regional Haze State Implementation Plans for the Second Implementation Period: RH in Class 1 areas in the West is mostly caused by non-anthropogenic sources. For anthropogenic sources, WESTAR maintains that that RH programs must focus on those sources within state control. The approach proposed by USEPA for separating natural vs. anthropogenic impacts on RH should be investigated to confirm it is robust and accurate. (The attachment provides detailed comments on the USEPA data analysis guidance). States should have the authority to determine the appropriate metrics for tracking progress for their state. The process for demonstrating effects of control strategies on visibility improvements should be less burdensome. Additional federal funding should be provided for the modeling efforts that will be required in the 2nd RH SIP planning period.
8/10/2016	WRAP	Comment Letter	Proposed Rule for Protection of Visibility: Amendments to Requirements for State Plans – western air quality planning needs for regional haze and other air quality indicators https://www.wrapair2.org/pdf/WRAP_letter_RHR_westernAQplanning_needsAugust10_2016final.pdf	 Letter prepared by WRAP staff and signed by Co-Chairs Gordon E. Pierce and Randy Ashley. Letter contains comments on the USEPA proposed rule for Protection of Visibility: Amendments to Requirements for State Plans, with the following key points: EPA should actively engage with WRAP and provide funding for developing visibility improvement strategies specific to the West. EPA should fully support WRAP's regional planning efforts while addressing western air agencies' comments, as WRAP has the expertise necessary for making progress towards national visibility goals. Funding should be provided to WRAP specifically for western regional multi-pollutant analysis and planning as the causes of visibility impairment are increasing attributable to uncontrollable or international air pollution sources.

Page 7 of 11 Ramboll

Date	Author	Document Type	Document Title	Brief Description
8/10/2016	WESTAR	Comment Letter	WESTAR Comments on Regional Haze NPRM http://www.westar.org/RHSIP/WESTAR%2 ORHR%20cover%20letter081016.pdf http://www.westar.org/RHSIP/WESTAR%2 ORHR%20comments%20attachment.pdf(attachment)	 Letter developed by WESTAR staff, reviewed by Committees, approved by WESTAR Council, and signed by Terry O'Clair, former WESTAR President. Letter contains the following key comments by WESTAR regarding the USEPA's Protection of Visibility: Amendments to Requirements for State Plans: The RAVI provisions can be eliminated because the program is largely unworkable and has been supplanted by the remaining provisions of the RH program. Terms such as haze, impairment, and visibility need to be clear as to whether they refer to both natural and anthropogenic sources. The types of landscape fires and the smoke emitted should be addressed consistently through Sections 300-309. There needs to be support for allowing technical and practical adjustments to visibility calculations and an acknowledgement that the URP can change. Recalculating the Glide Path/URP using the Baseline Period creates an unnecessary burden with no benefit to past or future planning. Demonstrating continued reductions in haze precursor emissions from anthropogenic sources, as a rate of progress, should be an available option. The 2025 progress report is unnecessary. In addition to the points above, this letter raises many of the same ideals presented in the written testimony of Mary Uhl, dated 6/1/2016.

Page 8 of 11 Ramboll

Date	Author	Document Type	Document Title	Brief Description
7/2016	USEPA	Guidance	Draft Guidance on Process Tracking Metrics, Long-term Strategies, Reasonable Progress Goals and Other Requirements for Regional Haze SIPs for the Second Implementation Period https://www.epa.gov/sites/production/files/2016-07/documents/draft_regional_haze_guidance_july_2016.pdf	 Draft guidance issued by the USEPA advising states on how to develop and submit RH SIPs for the second implementation period (2018-2021). In addition to providing useful background information and guidance, the document addresses the following key issues: Whether and how a state can consider visibility impacts and benefits along with the four statutory factors when developing its LTS. Explains the relationship between a state's RPGs and LTS. Includes a definition of the URP line and how comparison to the RPG affects a state's planning obligations. Describes how a state should evaluate small stationary sources and area sources. Describes how states need to consider measures necessary for making reasonable progress at areas in other states. Includes clarifications regarding consultation requirements. Describes how a state can address highly variable natural sources and sources outside the U.S. Describes how a state can address the expected increase in frequency of wildfires. Appendix A outlines the key steps involved in developing an RH SIP, the statutory basis for those steps, and the relevant sections in the guidance document. Appendix B presents USEPA's actions on RH SIPs for the 1st IP. Appendix C presents court decisions on RH SIPs and FIPs for the 2st IP. Appendix D identifies the provisions of the BART Guidelines (40 CFR Part 51 Appendix Y) that are applicable as USEPA recommendations for the 2nd IP. Appendix E identifies the provisions of the previous guidance documents on Natural Conditions and Progress Tracking that are applicable as USEPA recommendations for the 2nd IP. Appendix F identifies the answers from the 9/27/06 Q&A document that are applicable as USEPA recommendations for the 2nd IP.<!--</td-->

Page 9 of 11 Ramboll

Date	Author	Document Type	Document Title	Brief Description
7/2016	USEPA	Guidance	Technical Support Document (TSD) - Revised Recommendations for Visibility Progress Tracking Metrics for the Regional Haze Program https://www.epa.gov/ sites/production/files/ 2016- 07/documents/techni cal support documen t_for_draft_guidance on_regional_haze.pdf	 This document is intended to support Section 5 of the <i>Draft Guidance on Process Tracking Metrics, Long-term Strategies, Reasonable Progress Goals and Other Requirements for Regional Haze SIPs for the Second Implementation Period,</i> which discusses how to evaluate ambient data. In response to concerns from western states that the 20% haziest days can be heavily influenced by uncontrollable wildfires or wind-blown dust events, this document presents a revised tracking metric, along with the data, analyses, and rationale used to support it. The new metric is designed to focus on days with the highest anthropogenic impairment.
6/1/2016	WESTAR	Written Testimony	WESTAR Public Hearing Testimony - Proposed Amendments to the Regional Haze Rule http://www.westar.or g/RHSIP/WESTAR%2 OPublic%20Hearing% 20Testimony_final.pdf	 Written testimony by Mary Uhl, WESTAR Executive Director. Testimony expresses the following key ideals: Federal financial support will be essential for the upcoming SIP revisions. Due to international pollution and natural sources of haze, the 1999 RH Rule goal of attaining "natural conditions" is not achievable unless some revisions are made. Reducing anthropogenic visibility impairment should be the focus of the RH rule. WESTAR supports extending the deadline for the next round of SIPs and for reducing the administrative burden for future progress reports.

Page 10 of 11 Ramboll

Date	Author	Document Type	Document Title	Brief Description
11/16/2015	WESTAR	Comment Letter	WESTAR Comments on Regional Haze Rule Revision Recommendations http://www.westar.org/RHSIP/WESTAR%2ORH%20cover%20letter%2011-15-signed.pdf http://www.westar.org/RHSIP/WESTAR%2ORH%20attach%2011-15.pdf (attachment)	 Letter developed by WESTAR staff, reviewed by Committees, approved by WESTAR Council, and signed by Bryce Bird, former WESTAR President. Letter contains the following recommendations expressed by WESTAR: Visibility tracking metric guidance must allow states flexibility in adjusting and ranking monitored visibility data using site-specific and species-specific data. Revisions to what constitutes natural conditions are needed to account for extreme, episodic natural events and contributions from international emission sources and should be site-specific. States cannot control all anthropogenic sources, but need to focus on controllable sources under their jurisdiction that have demonstrated contributions to visibility impairment. RPGs must be achievable and based on realistic natural conditions or some appropriate alternative measure of visibility improvement. Western RH planning requires modeling support, including adequate funding.
3/26/2015	WESTAR	Comment Letter	WESTAR Letter to EPA with Regional Haze Rule Recommendations http://www.westar.or g/RHSIP/WESTAR_RH _RTPfollowup- signed.pdf	 Letter developed by WESTAR staff, reviewed by Committees, approved by WESTAR Council, and signed by Dan Johnson, former WESTAR Executive Director, as a follow-up to participating in the USEPA-hosted March 2015 Regional Haze meeting at Research Triangle Park. Letter contains the following opinions/concerns expressed by western states: Support changing the deadline for the next round of RH SIPs from 2018 to 2021. Support no longer requiring progress reports to be in the form of SIP revisions. Propose possibly removing the progress report requirement altogether. Propose creating an RH compliance path specific to western states. Natural conditions goal is flawed Perhaps need a new goal/metric There are unique questions/challenges that arise as states approach their visibility goals.

Page 11 of 11 Ramboll

Table 1. Summary of Recent Regional Haze Guidance and Planning Documents

Western Regional Air Partnership

Date	Author	Document Type	Document Title	Brief Description
12/3/2014	USEPA	Memorandum	Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze https://www3.epa.go v/scram001/guidance /guide/Draft O3-PM- RH Modeling Guidan ce-2014.pdf	 Memorandum presents draft USEPA guidance for conducting air quality modeling and related technical analyses for ozone and PM_{2.5} attainment demonstrations and for RH reasonable progress analyses. The first part of the guidance describes how to setup and apply a photochemical modeling platform. The second part of the guidance describes how to use the results of the modeling. Section 4.8, specifically, describes the modeling analysis required to assess future visibility improvement relative to the uniform rate of progress or "glidepath" as part of a reasonable progress analysis.
Abbreviations: BART – best available retrofit technology CAA – Clean Air Act CFR – Code of Federal Regulations CIRA – Cooperative Institute for Research in the Atmosphere FIP – federal implementation plan FLM – Federal Land Manager IMPROVE – Interagency Monitoring of Protected Visual			·	PM _{2.5} – particulate matter less than 2.5 microns in diameter RAVI – reasonably attributable visibility impairment RHPWG – Regional Haze Planning Work Group RPG – reasonable progress goal SMP – smoke management plan RH – regional haze

LTS – long-term strategy MPE – model performance evaluation

IP – implementation period

Environments

NAAQS - National Ambient Air Quality Standard

NPRM – notice of proposed rulemaking

OAR - Office of Air and Radiation

SIP – state implementation plan

TSD – technical support document

TSS – Technical Support System

USEPA – United States Environmental Protection Agency

URP – uniform rate of progress

WESTAR – Western States Air Resources Council

WRAP - Western Regional Air Partnership

Page 12 of 11 Ramboll