



New Mexico Environment Department

Regional Haze - 2021 State Implementation Plan Revision

Mark Jones, Michael Baca, Neal Butt, New Mexico Environment Department Air Quality Bureau

Ed Merta, City of Albuquerque Environmental Health Department

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Agenda

- What is “Regional Haze?”
- How are New Mexico’s protected areas faring?
- What are the federal rule’s requirements?
- What is involved in this multi-year planning effort?
- Where is NMED in the planning process?
- What are the next steps?
- How does the public stay informed and participate in the process?
- Who is involved in NMED’s planning effort?

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What is “Regional Haze?”

a.k.a. “Visibility Protection”



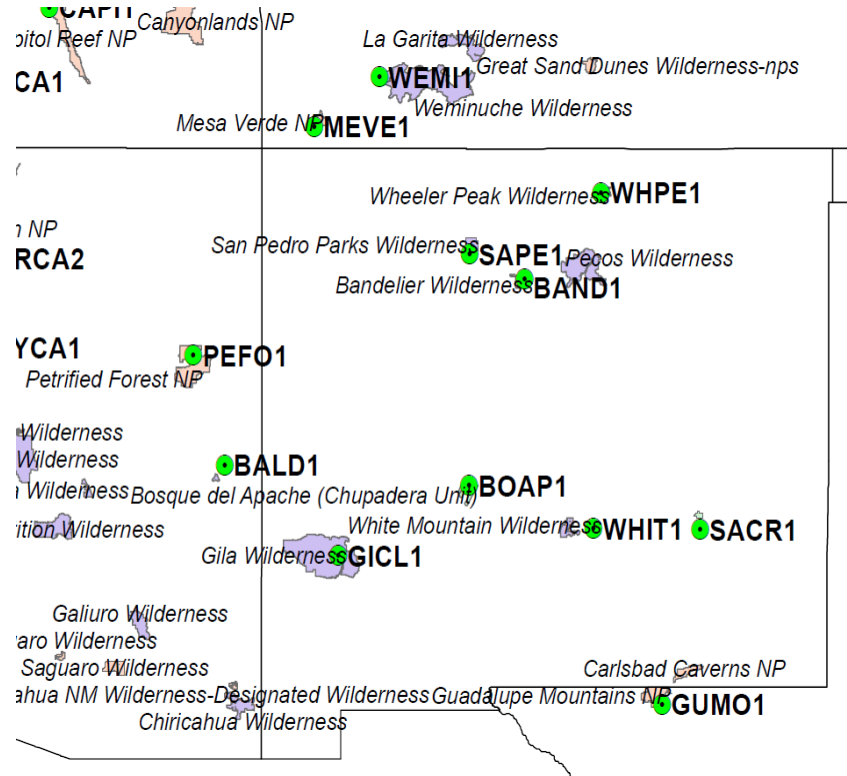
Regional Haze v. regional haze

“regional haze” = visibility impairment from numerous, widespread human pollutant sources.

“Regional Haze” = Visibility protection at federal Class I Areas (CIAs)

Class I Areas (CIAs) in New Mexico:

- Bandelier Wilderness Area**
- Bosque del Apache Wilderness Area**
- Carlsbad Caverns National Park**
- Gila Wilderness Area**
- Pecos Wilderness Area**
- Salt Creek Wilderness Area**
- San Pedro Parks Wilderness Area**
- Wheeler Peak Wilderness Area**
- White Mountain Wilderness Area**



We also have to evaluate impact of NM sources on nearby C1As located outside NM; tribes/EPA and other states must evaluate their sources' impacts on our CIAs



Haze at Bandelier National Monument





Measuring Haze

- The federal IMPROVE network measures particle mass and converts to light extinction (based on absorption). Light extinction is caused by the following pollutants:
 - ▣ Ammonium nitrate
 - ▣ Ammonium sulfate
 - ▣ Coarse mass
 - ▣ Soil
 - ▣ Organic carbon
 - ▣ Elemental carbon
 - ▣ Sea salt
- Deciview (dv) - The unit of measurement of haze, as in the haze index defined below.
- Light extinction = A measure of how much light is absorbed or scattered as it passes through a medium, such as the atmosphere.
- The “haze index” A measure of visibility derived from calculated light extinction measurements that is designed so that uniform changes in the haze index correspond to uniform incremental changes in visual perception, across the entire range of conditions from pristine to highly impaired. The haze index [in units of deciviews (dv)] is calculated directly from the total light extinction [expressed in inverse megameters (Mm^{-1})]



Sources of Visibility Interference

- Natural
 - ▣ Wildfires
 - ▣ Dust storms
 - ▣ Biogenics
 - ▣ Sea salt

- Anthropogenic
 - ▣ Prescribed fires
 - ▣ Major and minor/area sources
 - ▣ Mobile sources

- Uncontrollable Sources
 - ▣ Natural sources (e.g., Wildfire)
 - ▣ International transport
 - ▣ Not practically controllable (e.g. no feasible control technology)

- Controllable Sources
 - ▣ Prescribed fires –Smoke Management Program
 - ▣ In-state source pollution – Major and minor sources

Protected Areas in New Mexico

Trends at New Mexico's Class I Areas 2000 - 2017



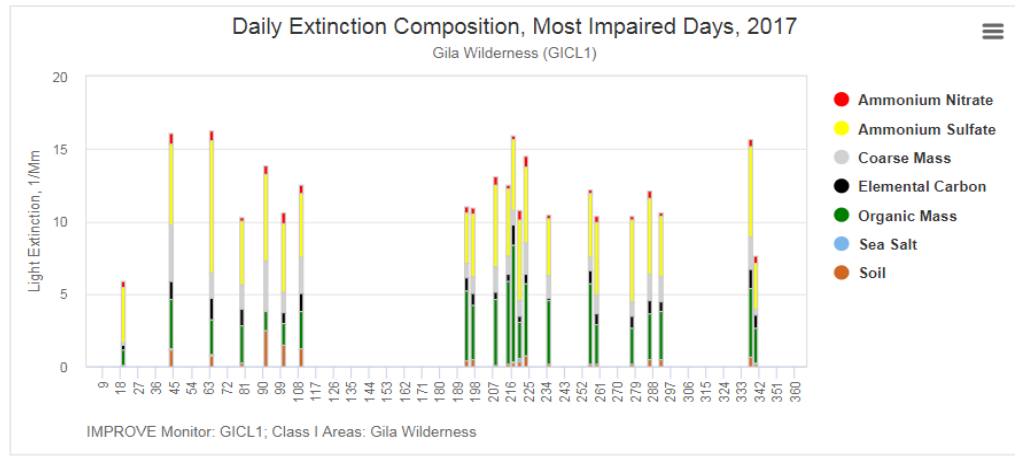
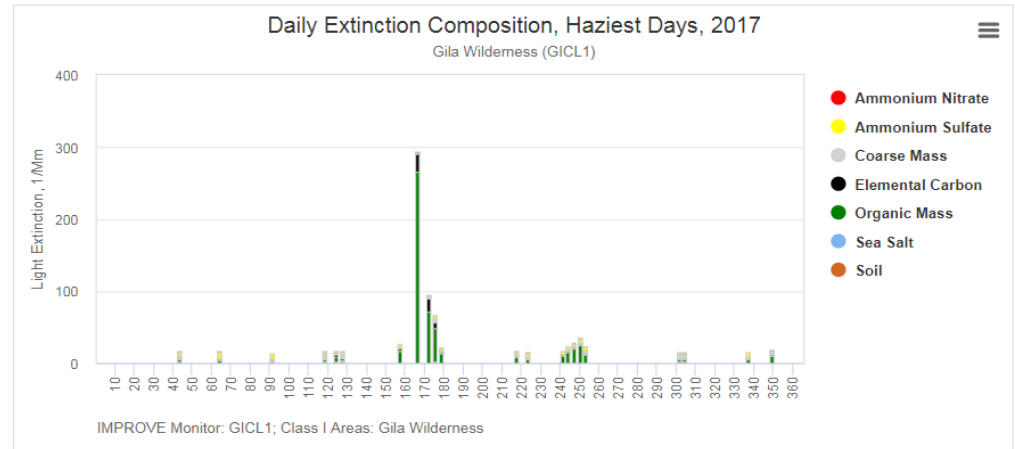
Metrics - Old and New

Trends at CIAs - Two Metrics:

Improvement for “Most impaired days” (MID). This metric focuses on the 20% of monitored days at each CIA for each year that has the most impact from anthropogenic sources.

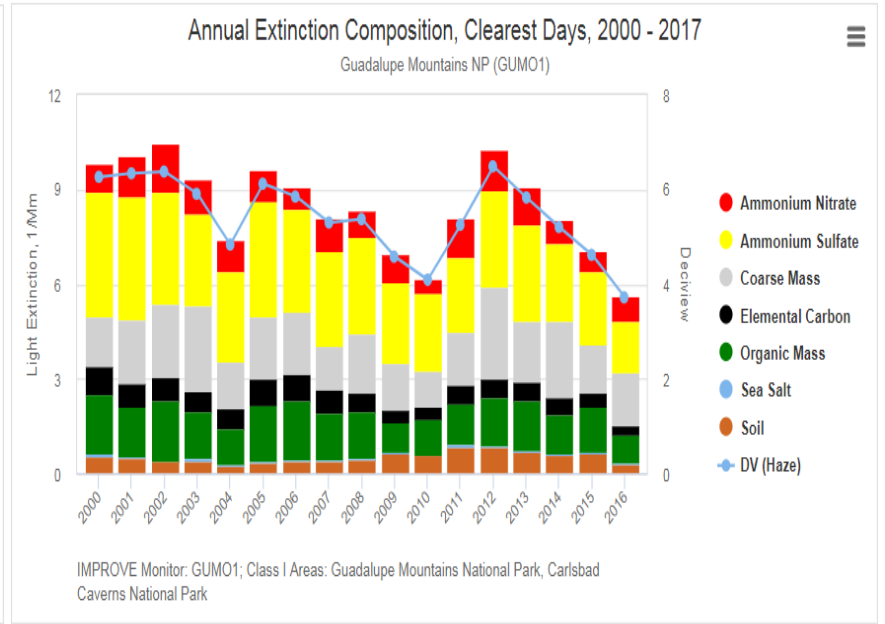
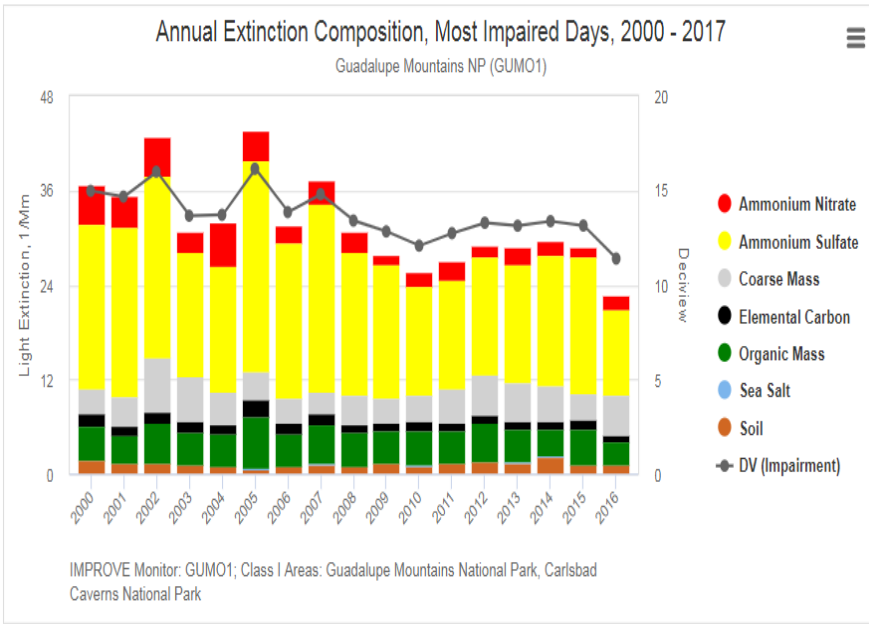
No degradation on “Clearest days.”
The focus is on the 20% of monitored days at each CIA for each year that has the least haze overall (natural and anthropogenic).

Haziest days are not typically the most impaired days!



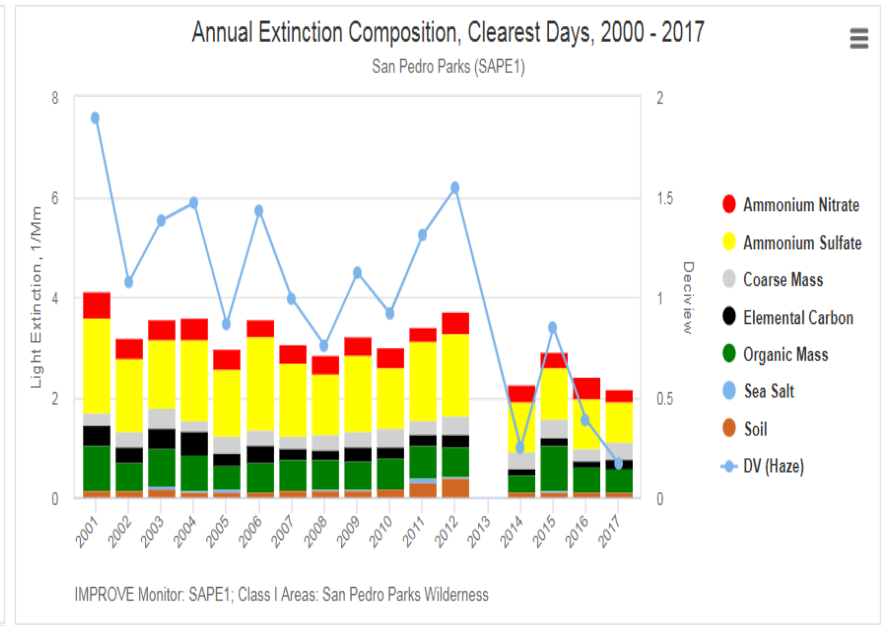
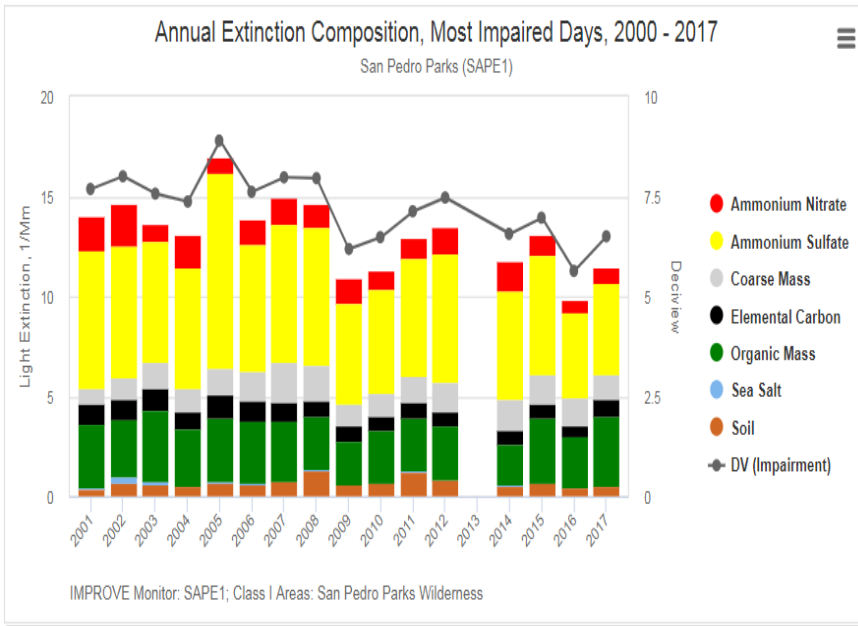


Carlsbad Caverns National Park





San Pedro Parks Wilderness Area



Federal Regional Haze Rule - Requirements

40 CFR §51.300 - 309



Comprehensive SIP Revision due 7/31/2021

Evaluate existing programs:

20.2.74 NMAC – *Prevention of Significant Deterioration*

20.2.65 NMAC – *Smoke Management*

“BART Sources” – evaluate current status and potential needs for any further controls

Monitoring strategy – IMPROVE network is sufficient

20.2.81 NMAC – *Western Backstop SO₂ Trading Program*

Revised SIP must include:

- ❑ **Long term strategy** – “reasonable” controls;
- ❑ **Reasonable Progress Goals (RPGs)** - quantitative modeling of strategies’ impact on visibility
- ❑ **Monitoring trends at CIAs** - baseline, current, and natural conditions; and
- ❑ **Uniform rate of progress** - achieve “natural conditions” by 2064.



Consultation and discussion with other parties

- ❑ Regional Haze Rule requires states to consult other states
- ❑ Consultation, notification and information sharing is required with FLMs
- ❑ Continuing consultation through the SIP development process
- ❑ Discussions with the EPA Regional office about the state's plans and progress in developing its regional haze SIP are likewise encouraged to begin early and continue throughout the SIP development process.
- ❑ Discussions and dialogue with potentially affected Tribes.

What is involved in this multi-year planning effort?

NMED's plan for developing an approvable State Implementation Plan revision



WESTAR/WRAP –Regional Context

- The Western Regional Air Partnership (WRAP) is a voluntary partnership of states, tribes, federal land managers, local air agencies and the US EPA.

Focus on regional air issues such as:

- ▣ Regional Haze;
 - ▣ Criteria pollutants, Hazardous Air Pollutants and Toxic Air Pollutants;
 - ▣ Emissions inventories;
 - ▣ Transport; and
 - ▣ Climate change.
- <https://www.wrapair2.org/default.aspx>



WRAP serves these 13 western states plus Alaska and Hawaii.



WRAP's Regional Haze Focus

Technical Steering Committee

- Develop and implement the WRAP work plan
- Oversee workgroup processes and deliverables
- Lead and participate in modeling and analysis efforts with:
 - ▣ States,
 - ▣ Contractors,
 - ▣ EPA, and
 - ▣ FLMs
- Collaborate and Build Agency Capacity
 - ▣ Cooperative Institute for Research in the Atmosphere, Colorado State University
 - Database and applications - Technical Support System or TSS

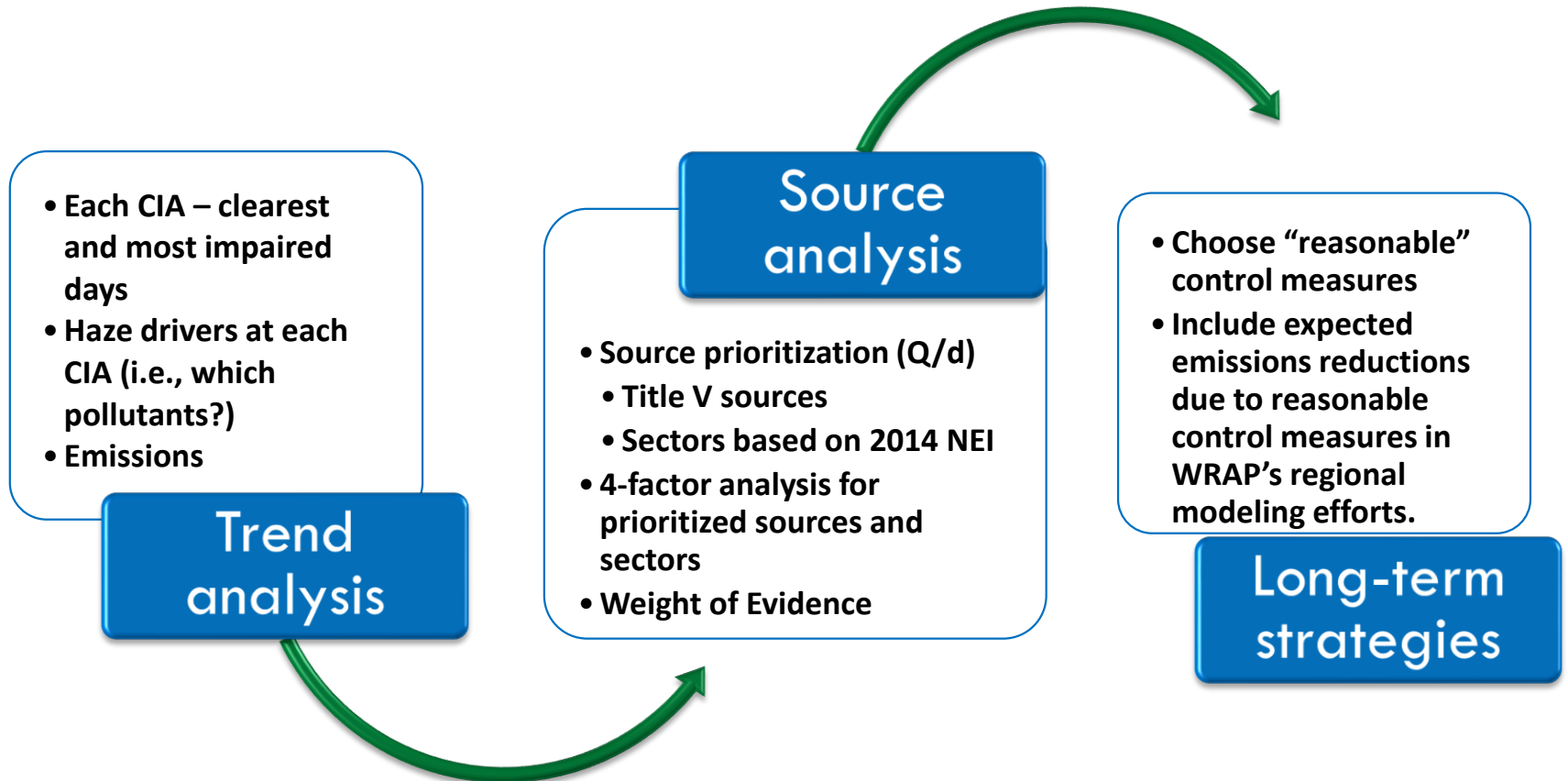
<http://views.cira.colostate.edu/tssv2/>

Regional Haze Planning Work Group

- Subcommittees
 - ▣ Focus on different aspect of RH planning
 - Emissions Inventory / Modeling
 - Control Measures
 - Coordination & Glide Path
- Other WRAP work groups that complement subcommittees
 - ▣ Oil & Gas
 - ▣ Tribal Data
 - ▣ Regional Technical Operations

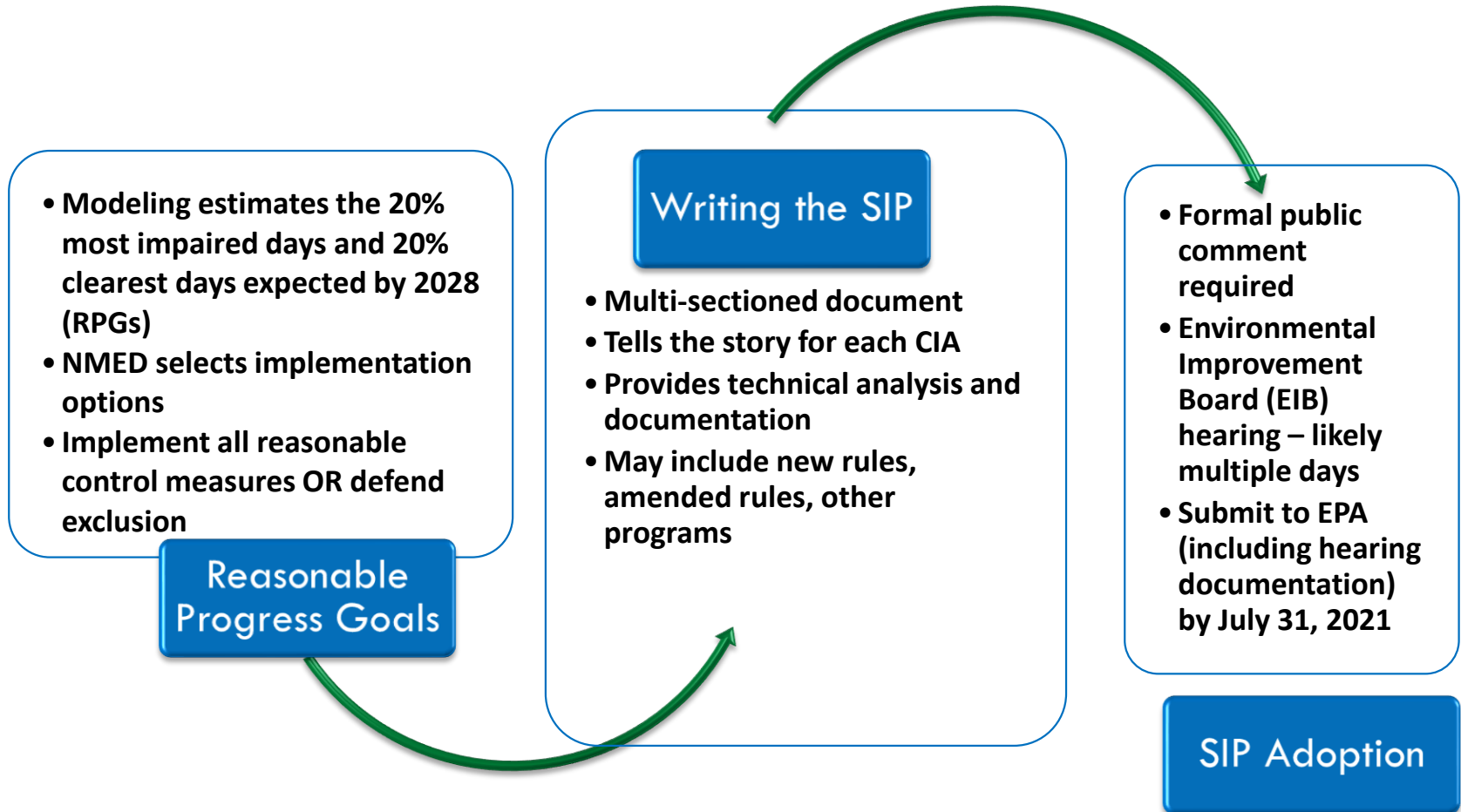


WRAP and SIP Planning





SIP Development – NMED





Role of Albuquerque – Bernalillo County

- Separate air quality jurisdiction from rest of state
 - Local board adopts regulations, not state Environmental Improvement Board
 - City of Albuquerque Environmental Health Department (EHD) enforces regulations and permits, not NMED
- But: Regional Haze rule requires one plan for one state
- Solution: EHD and NMED cooperate on Regional Haze
 - Common, statewide data and analysis
 - Two Regional Haze SIPs that work as one

Regional Haze
contact for
City of
Albuquerque,
Environmental
Health Department:

Ed Merta
emerta@cabq.gov



Outreach – A Critical Component

Initial

- Inform the public – education
- Contact priority sources: 4-factor analysis request
- Consult with FLMs, other states, tribes and EPA

SIP Development

- Share modeling results
- Gather input from all stakeholders
- Consult with FLMs, other states, tribes and EPA

Pre-hearing

- Final consultations
- Formal public comment
- Respond to comment and revise draft SIP, as necessary
- Public hearing testimony

Where is NMED in the planning process?

Past and present work



SIP Development and Outreach – Parallel Processes




New Mexico is here





NMED – Current and Completed Work

- Web page development
- Webinar development
- Analysis for each CIA beyond the basic requirements (i.e., telling the story)
- Source prioritization and consultations with FLMs and EPA – joint work with ABQ
- Consultations with other states
- Outreach to prioritized sources for data to inform our 4-factor analysis of controls
- Contact list update (goal is to reach broad audience of stakeholders)
- Ongoing work with WRAP work groups and subcommittees



New Mexico Environment Department
PROTECTING OUR ENVIRONMENT, PRESERVING THE ENCHANTMENT

Air Quality Bureau

Guiding Principles for Developing the New Mexico Regional Haze State Implementation Plan (RH SIP)

Science

- Use sound scientific analysis and principles to understand visibility issues.
- Perform visibility studies using the most recent, complete, and accurate datasets available.
- Rely upon and lead with science to inform our understanding of the causes of haze, evaluate strategies and set future goals to improve visibility at Class I Areas.

Innovation

- Consider new ideas that potentially offer better solutions to problems of haze at Class I Areas.
- Allow for flexibility in the planning and development of the RH SIP revision to include new information as it becomes available.
- Include and evaluate the newest engineering methods and technology advances in potential control measures to help solve haze problems.

Collaboration

- Assist the Western Regional Air Partnership (WRAP) and its contractors performing regional technical analyses, and collaborate with all western states, Federal Land Managers (FLMs), the U.S. Environmental Protection Agency (EPA) and tribes.
- Work proactively with all stakeholders to minimize negative impacts for sources and maximize visibility improvements at Class I Areas.
- Acknowledge and consider a wide range of perspectives and ideas, regardless of the source, while respecting each person working toward the shared goal of improved visibility at Class I Areas.
- Keep stakeholders informed of all steps required for RH SIP planning and development; help them access technical information that informs the Department's decisions.
- Consult with EPA, FLMs, other states and, where appropriate, tribes at multiple stages in the development of the RH SIP revision.

Compliance

- Maintain a level playing field with the development of fair and equitable reasonable control measures.
- Develop a long-term strategy that ensures continued progress toward visibility goals.
- Assure approvability of the RH SIP revision by complying with federal rule requirements, adhering to EPA guidance and frequently consulting with EPA and FLMs.

NMED Air Quality Bureau, 525 Camino de los Marquez, Ste. 1, Santa Fe, NM 87505
(505) 476-4300 www.env.nm.gov/air-quality

Stay Informed and Participate!

Outreach efforts – current and future



Our Commitment to Transparency

- Web page provides current information
 - ▣ What we know (and possibly what we don't know)
 - ▣ Overall planning and outreach processes
 - ▣ What we are analyzing and evaluating
 - ▣ Subscribe for Regional Haze email alerts (recommended)
 - ▣ Links to other resources
 - ▣ Ways to submit comments
 - ▣ Guiding Principles – our commitment to Science, Innovation, Collaboration and Compliance
- Webinar – initial outreach
 - ▣ Live events (similar to this training)
 - ▣ Recorded and linked to web page
- Provide further educational outreach upon request



NMED/Albuquerque Regional Haze Team

Specialty	Name	Email
Oil & Gas, WRAP modeling	Mark Jones	mark.jones@state.nm.us
Control Measures	Kerwin Singleton	kerwin.singleton@state.nm.us
Emissions Inventory	Roslyn Higgin	roslyn.higgin@state.nm.us
SIP Requirements, Outreach	Neal Butt	neal.butt@state.nm.us
Communication & coordination	Mike Baca	michael.baca1@state.nm.us
Legal (OGC)	Owen Johnson	owen.johnson@state.nm.us
City of Albuquerque contact	Ed Merta	emerta@cabq.gov

NMED Regional Haze website: <https://www.env.nm.gov/air-quality/reg-haze/>