

Clean Air Act Advisory Committee

February 7, 2019



Welcome!

Air Quality Bureau Updates

Board of Environmental Review Actions

Regional Haze Update

Discussion

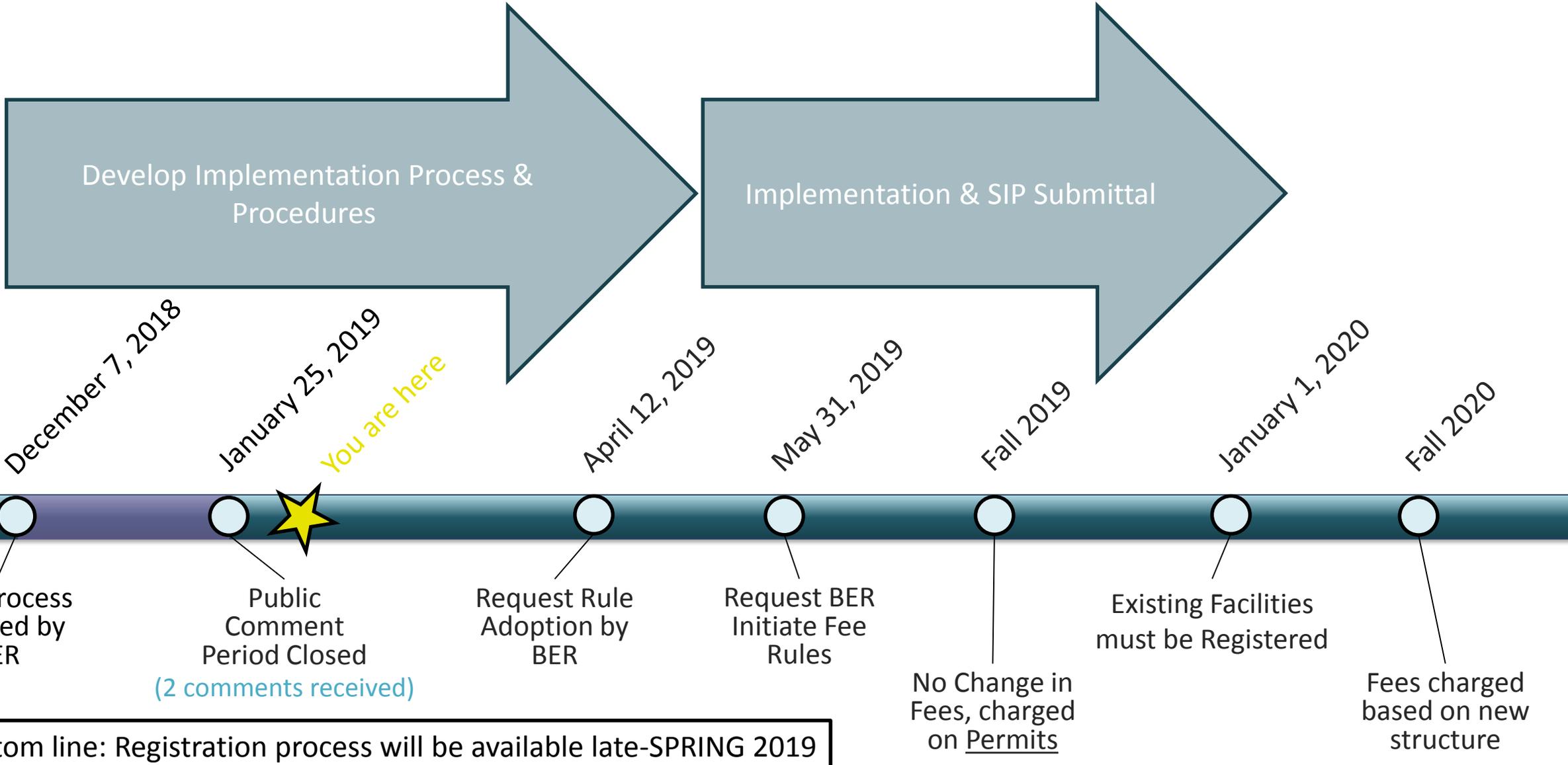


Air Quality Bureau Updates



Board of Environmental Review (BER) Actions

Portable Registration Program - Update



Bottom line: Registration process will be available late-SPRING 2019



Regional Haze Update

Clean Air Act Advisory
Committee

February 7, 2019

Outline

Status Update

Regional Analysis Timeline

Visibility Progress in Montana

Source Screening

ICYMI (in case you missed it)

What is the Regional Haze Program?

“Congress hereby declares as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from man-made air pollution.”

[Clean Air Act, 42 U.S.C. § 7491]

Mandatory Federal class I areas (CIAs) include national parks and wilderness areas

12 in Montana

Visibility is monitored through a network of federally-operated monitors

8 associated with Montana’s CIAs

Monitors measure the concentration of different species of particulate matter, which absorb and scatter light, causing us to see haze

Coarse mass, **fine sea salt**, **fine soil**, elemental carbon, **organic carbon**, **ammonium nitrate**, **ammonium sulfate**

ICYMI (in case you missed it)

What is the Regional Haze Program?

- 1999 Regional Haze Rule directed states to submit plans to control emissions of pollutants that contribute to haze
- Regional Haze Program requires incremental improvement in visibility from 2000-2004 “baseline” through 2064 “goal”
- Progress is assessed through 10-year implementation periods (eg. 2008-2018, 2018-2028, etc.)
- EPA published a Federal Implementation Plan for Montana in 2012 for the first implementation period. The FIP included control requirements for several Montana facilities.
- Montana is working toward developing a State Implementation Plan, due to EPA by 7/31/2021, for the second implementation period
- Regional Haze is a regional effort and Montana is coordinating with the Western Regional Air Partnership (WRAP) on many analysis tasks

Montana Status Update

COMPLETE:

- Progress report on first planning period submitted 11/2017
- Reviewed 2014 baseline emission inventory

IN PROGRESS:

- Transitioning regulations from first planning period to state control
- Analyzing visibility data to understand trends and potential areas of concern
- Beginning to screen permitted stationary sources for further analysis

UP NEXT:

- Kick-off conversations with sources about 4-factor analysis
- Analyze projected 2028 emission inventory and modeling results

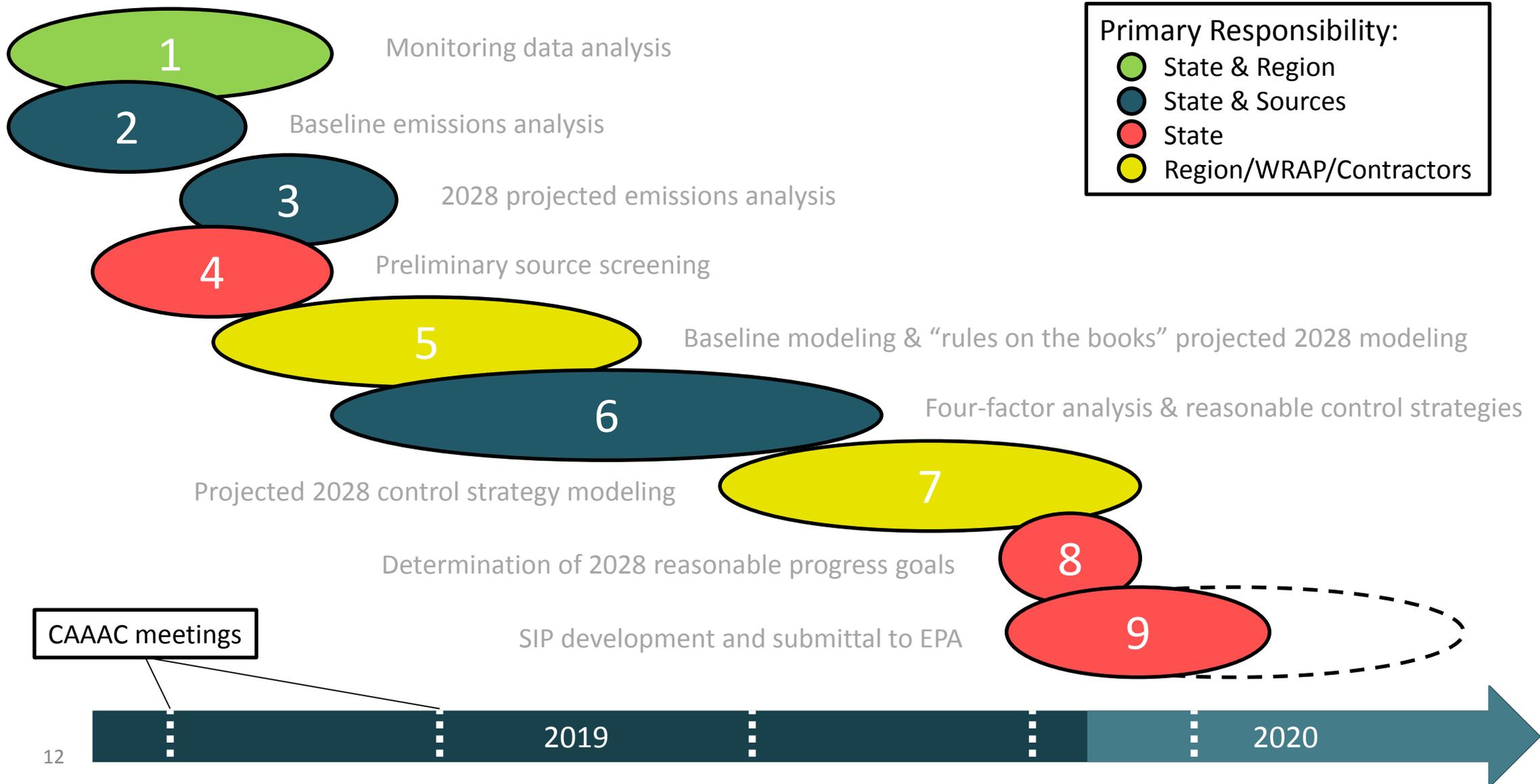
Analysis & Planning Tasks

- 1 Monitoring data analysis
- 2 Baseline emissions analysis
- 3 2028 projected emissions analysis
- 4 Preliminary source screening
- 5 Baseline modeling & “rules on the books” projected 2028 modeling
- 6 Four-factor analysis & selection of reasonable control strategies
- 7 Projected 2028 control strategy modeling
- 8 Determination of 2028 reasonable progress goals
- 9 SIP development and submittal to EPA

Primary Responsibility:

- State & Region
- State & Sources
- State
- Region/WRAP/Contractors

Analysis & Planning Tasks Timeline



Regional Haze Project Team

- Rebecca Harbage Project Manager
 - Craig Henrikson
 - Rhonda Payne
 - Kristen Martin
 - Brandon McGuire
 - Eileen Steilman
- Emissions, Source Screening,
& Control Analysis
- Monitoring & Modeling Analysis
- Consulting Member on Oil & Gas

Outline

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Regional Analysis Timeline

Visibility Progress in Montana

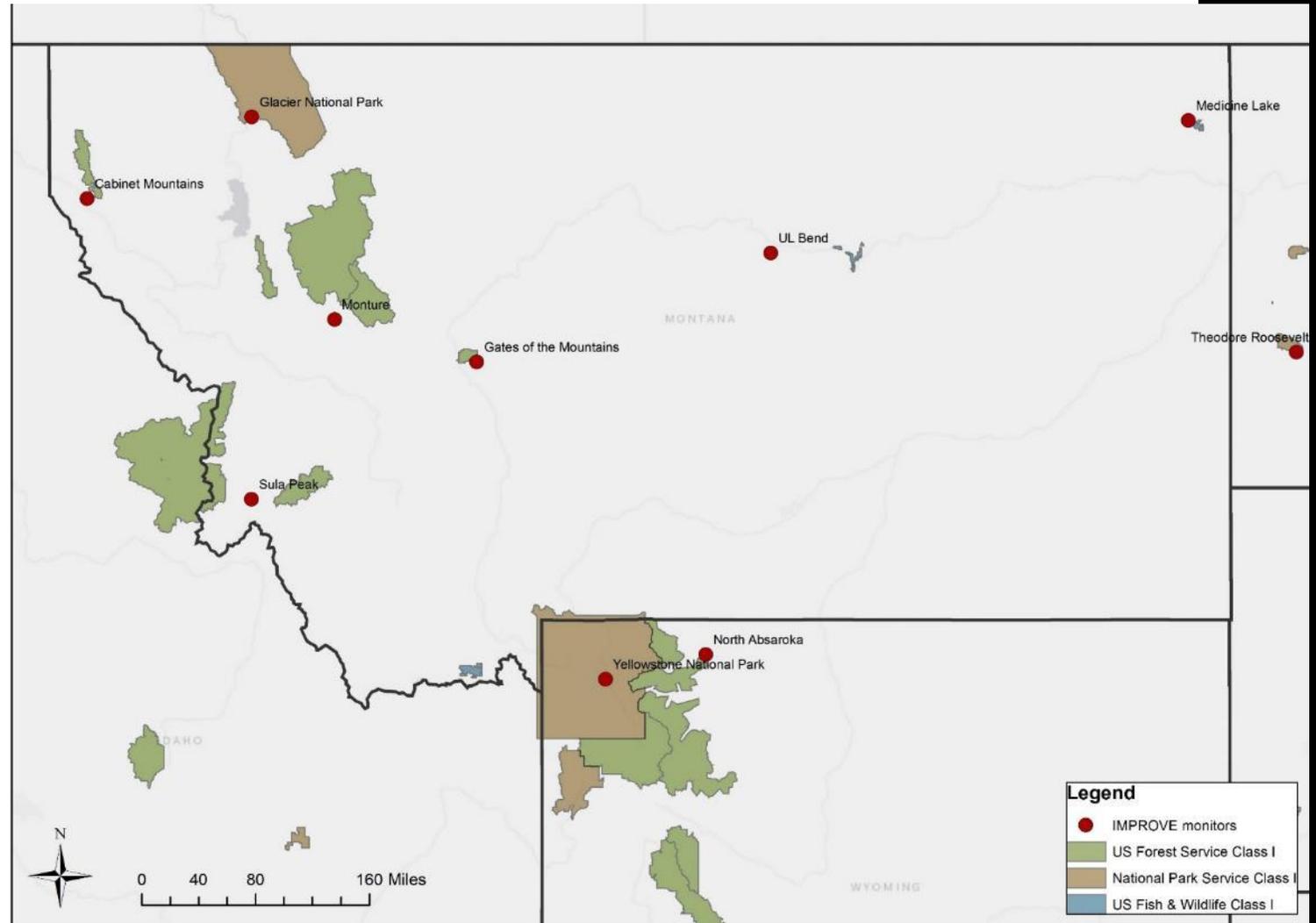
Source Screening

Analyzing Monitoring Trends to Identify Potential Areas for Improvement

VISIBILITY PROGRESS IN MONTANA

Measuring Visibility

Montana follows monitoring
results at 10 IMPROVE monitors
representing 14 Class I Areas



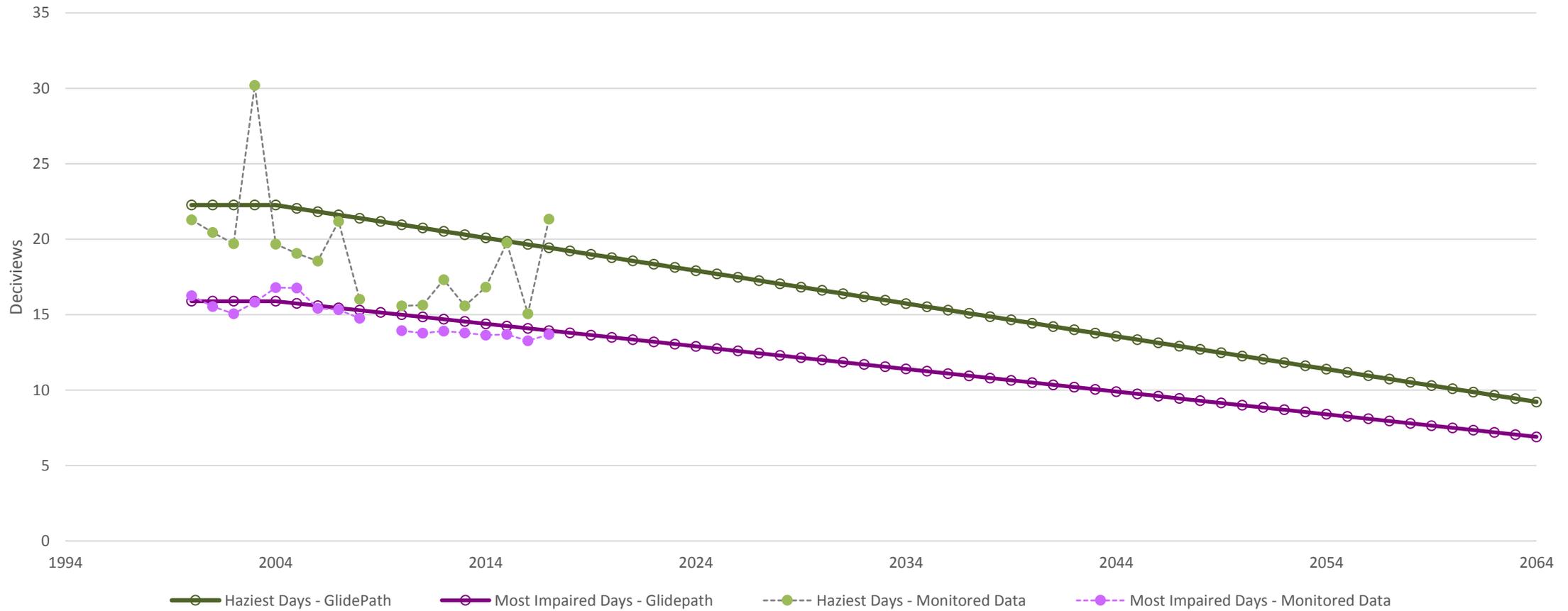
Change in how we assess visibility

- Clean Air Act requires improvement in visibility impairment resulting from “man-made air pollution”
- Original Regional Haze Rule (1999)
 - Focused on improvement on the 20% “Hazziest Days”
 - In western U.S., many of the haziest days are due to wildfire smoke
- Revised Regional Haze Rule (2017)
 - Focuses on improvement on the 20% “Most-Impaired Days”
 - Impaired days reduce the influence of “Extreme Episodic Events”
 - Wildfire smoke major source of Extreme Events in Montana

Old vs. New – Progress Comparison

Glacier Nat'l Park

Glidepath
Old vs. New Method

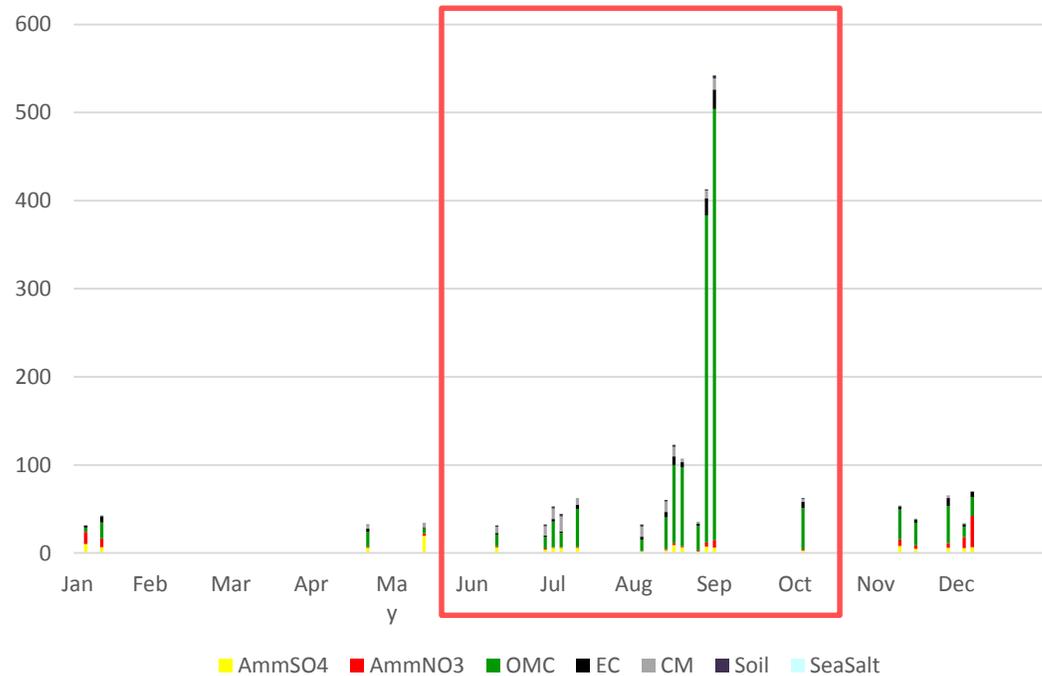


Old vs. New – Select Different Days

Glacier Nat'l Park

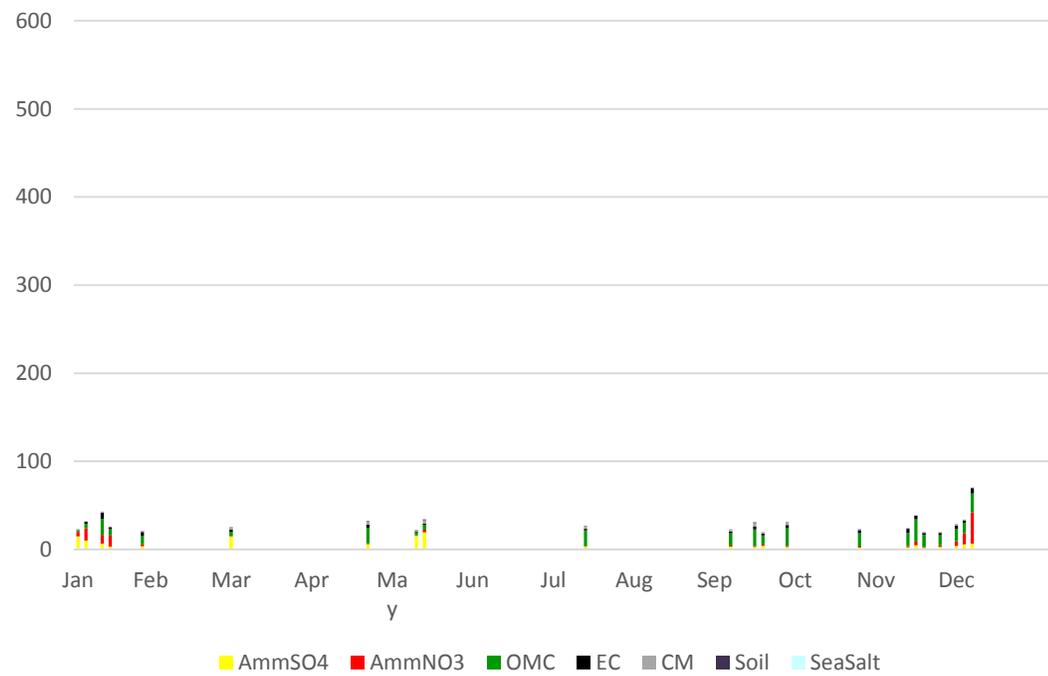
Old Method

Glacier National Park 20% Haziest Days
2015



New Method

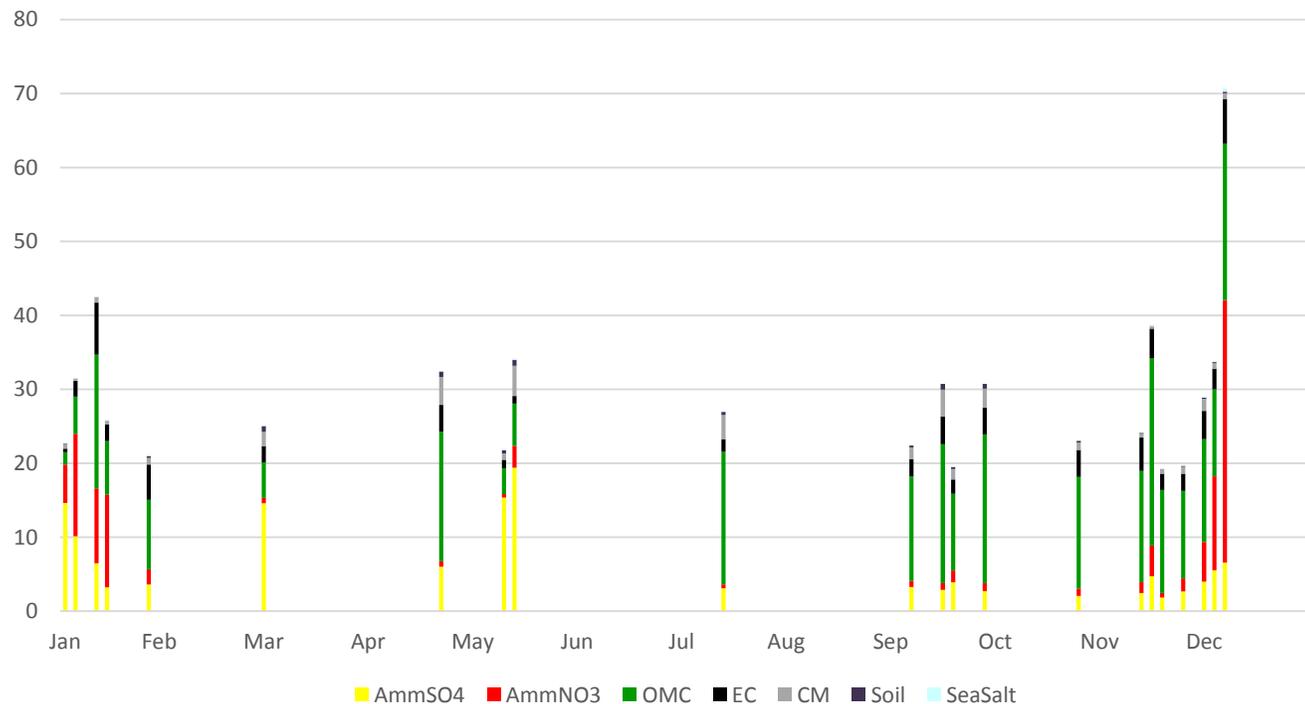
Glacier National Park 20% Most Impaired Days
2015



New Method

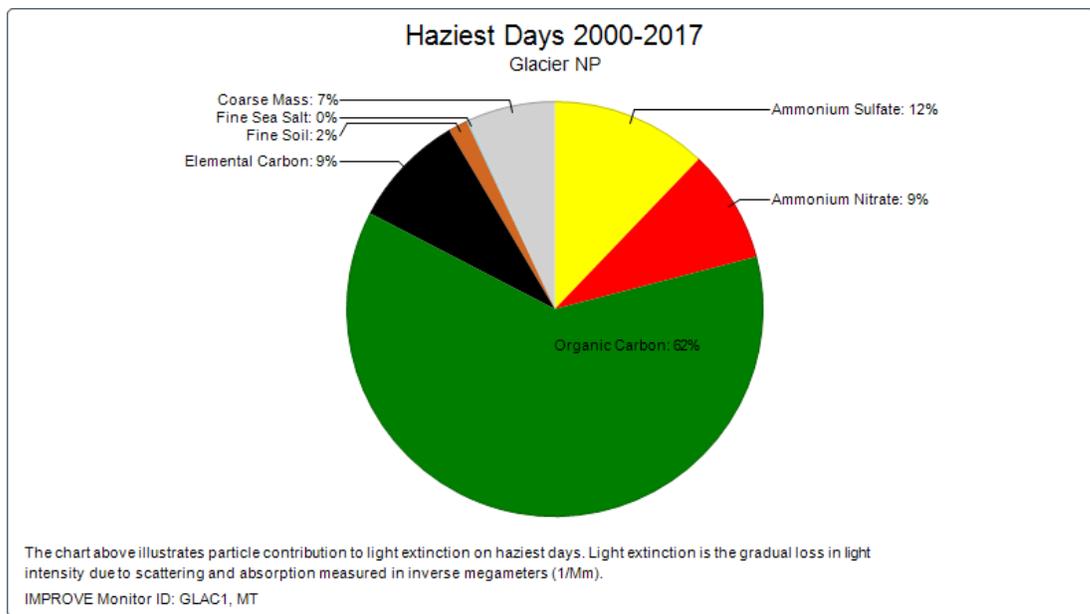
- Shifts selected days away from summer wildfire season
- Greater emphasis on 'man-made' pollutants
- Allows trends to be governed by emissions instead of fire weather

Glacier National Park 20% Most Impaired Days
2015

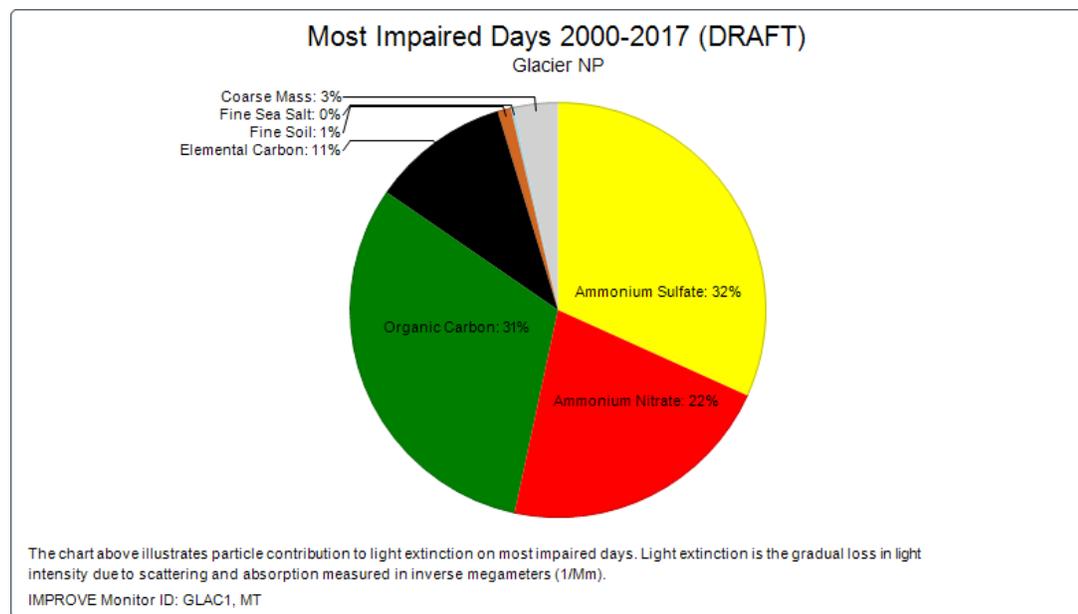


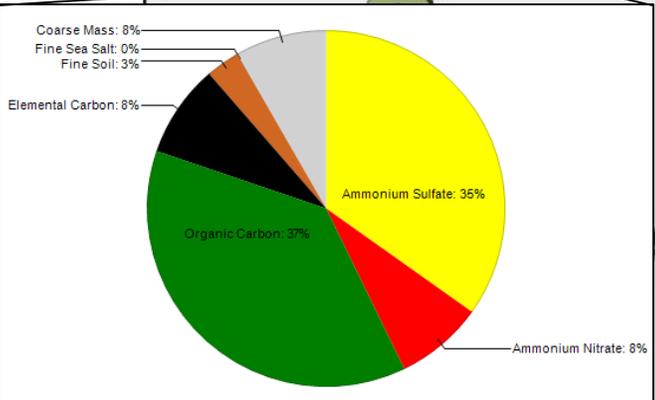
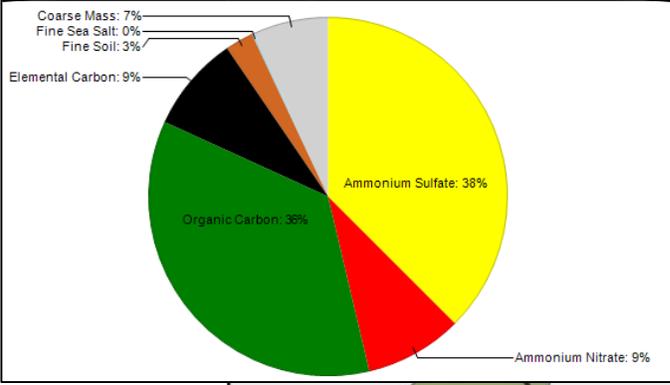
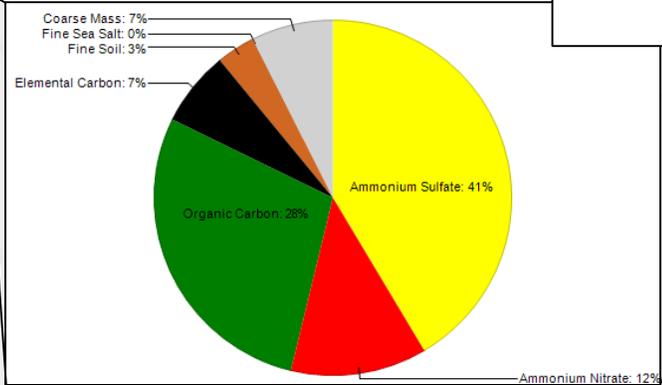
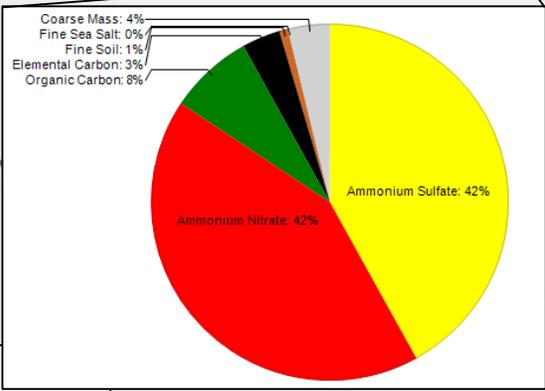
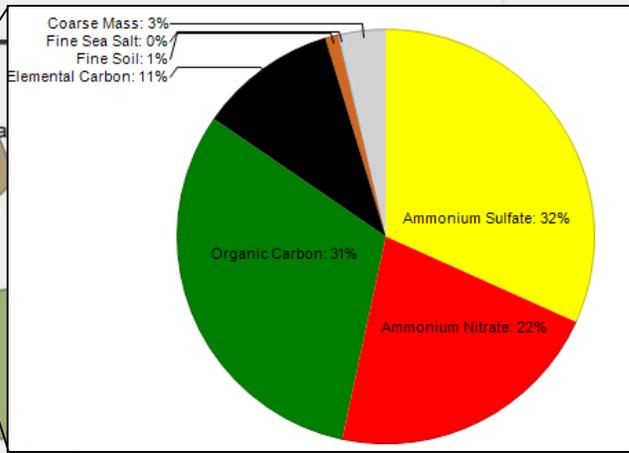
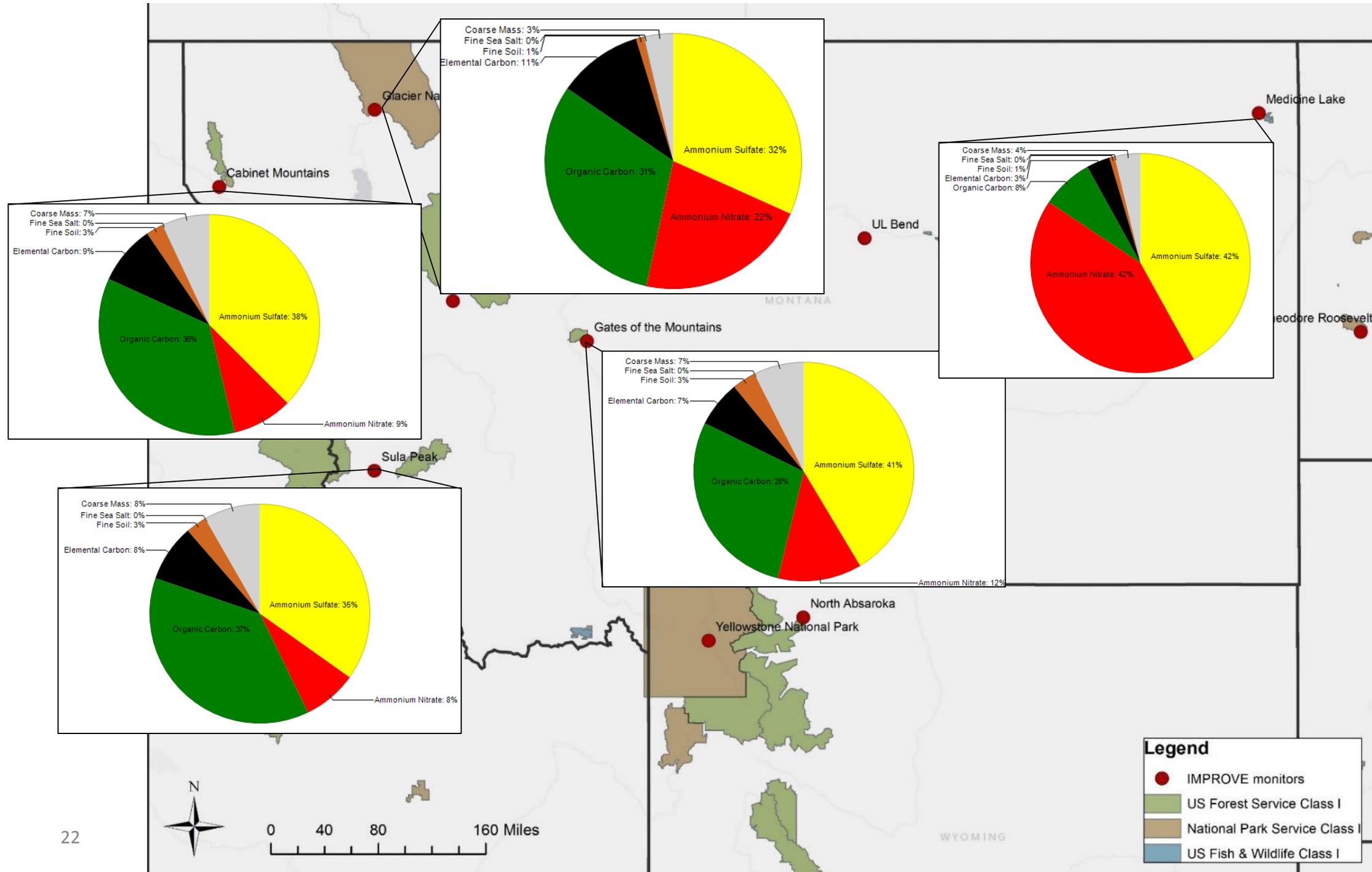
Species Contribution

Old Method



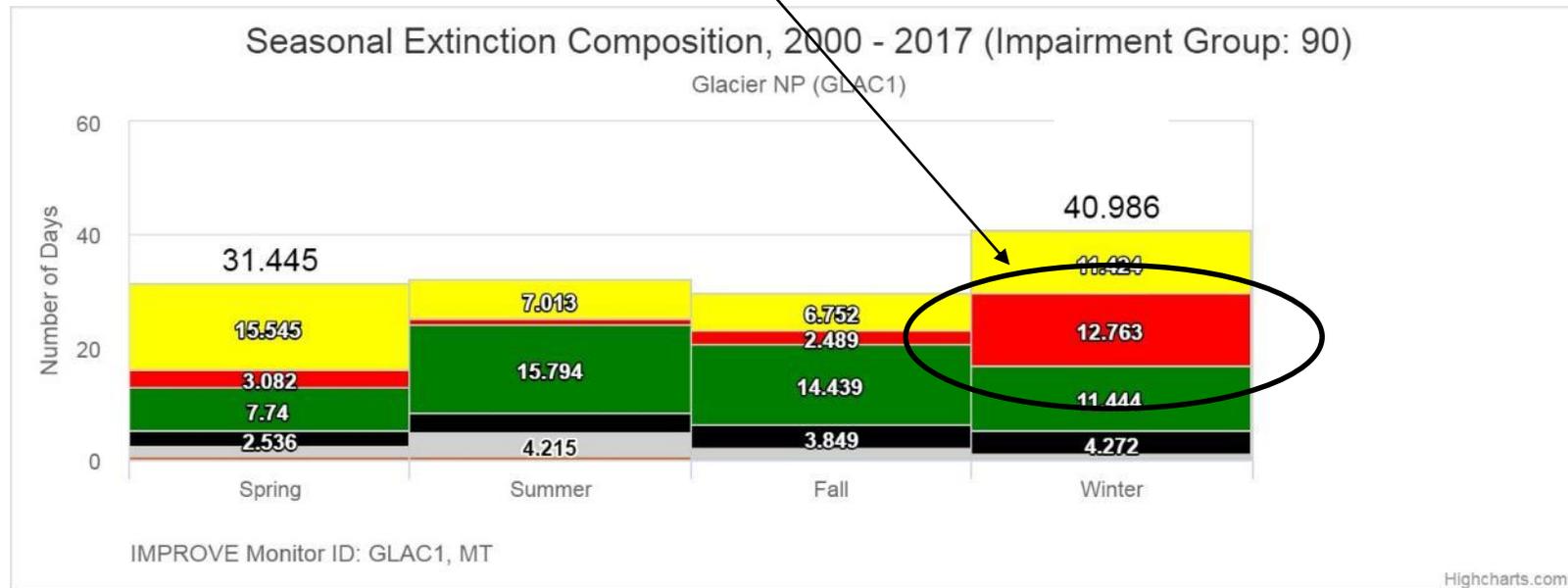
New Method





Pollutants of Concern

- Under the new method, visibility impacts from SO₂ and NO_x emissions are more apparent
- Sulfates are a concern at every Montana site
- Some questions still remain
 - Nitrates at Glacier spike in the winter – why?



Outline

Status Update

Regional Analysis Timeline

Visibility Progress in Montana

Source Screening

Identifying Facilities for this Round of Regional Haze Planning

SOURCE SCREENING

Differences from First Implementation Period

- First implementation period process relied on both Best Available Retrofit Technologies (BART) and Reasonable Progress analysis.
- BART-eligible sources were well-defined in the Regional Haze Rule as sources that:
 - 1) Had the potential to emit 250 tons a year or more of a visibility-impairing pollutant;
 - 2) Were not operating before August 7, 1962, but were in existence by August 7, 1977; and
 - 3) Fell into one of 26 different source categories such as EGUs, refineries, etc.
- Montana had 9 facilities that were determined to be BART-eligible. Following EPA's analysis, only 4 ended up being subject to BART requirements. A fifth was brought forward under Reasonable Progress.

IMPORTANT:

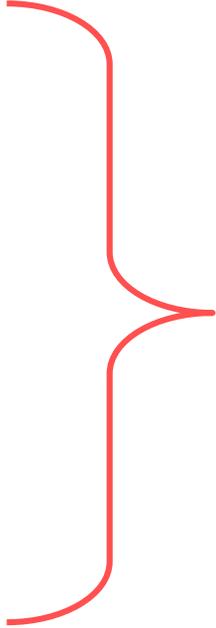
BART is not re-evaluated in the second implementation period, but "reasonable progress" is and BART sources may be!

BART-Like Carry-Overs

- Rather than BART, the emphasis in the second implementation period is on the Reasonable Progress analysis. There are similarities between the two.
- First Round analysis included five factors.
- This Round, four of the five factors remain the same for Reasonable Progress analysis and states may choose how to consider the fifth factor:
VISIBILITY
- Why is EPA dropping visibility as a required factor in the analysis?
 - BART analysis (and RP in Round 1) included consideration of source-specific contribution to visibility impairment by modeling individual source impacts. Without a defined subset of sources, the second implementation period does not provide a source specific impairment value.

Reasonable Progress Analysis Steps

- 1) Conduct Preliminary Source Screening
- 2) Populate List of Emission Reduction Strategies
- 3) Perform Four-Factor Analysis
- 4) Select Required “Reasonable” Control Strategies



We'll discuss these first three today

STEP 1: Screening Analysis

- States need a manageable way to identify those sources most likely to “cause” or “contribute to” haze in Class I areas.
- Montana has a large universe of sources including:
 - 279 permitted stationary sources
 - 1227 registered oil and gas sources
 - 357 permitted portable sources
- Today’s discussion is limited to the 279 permitted stationary sources.
- Registered sources, when densely located, can also have an impact on specific Class I areas. A similar process for assessing these types of sources is currently being discussed with WRAP.

STEP 1: Screening Analysis

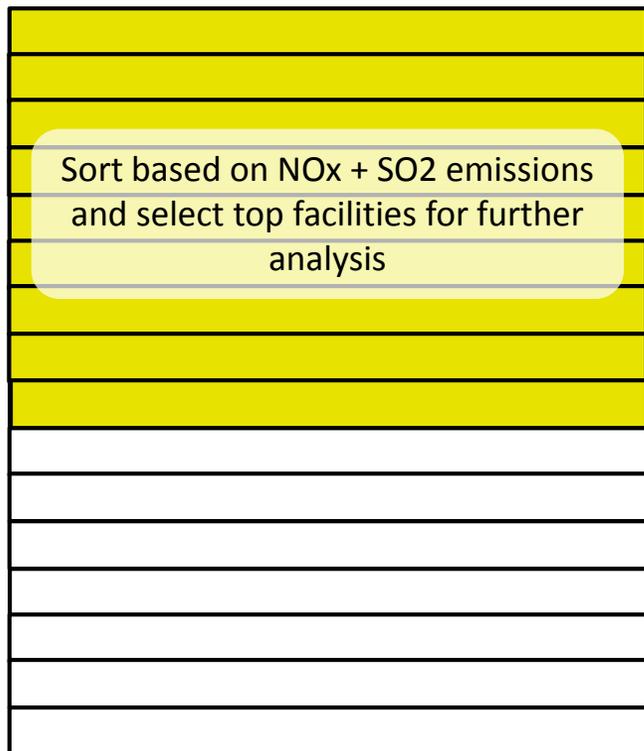
Permitted Stationary Sources

- Screening Process:
 - 1) Identify permitted stationary sources with total emissions of NO_x and SO_2 exceeding 100 tons/year.
 - Sum of emissions (tons) = “Q”
 - 2) For each facility, identify the distance to the nearest Class I area.
 - Distance (km) = “d”
 - 3) Sort all facilities by Q/d from largest to smallest
 - 4) Select Q/d threshold to determine which facilities require further analysis
 - Must account for enough emissions to satisfy EPA’s guidance on screening and analysis
 - 5) When available, confirm likelihood of visibility impact from selected facilities using Weighted Emissions Potential (WEP) results, which models where emissions are most likely to originate.

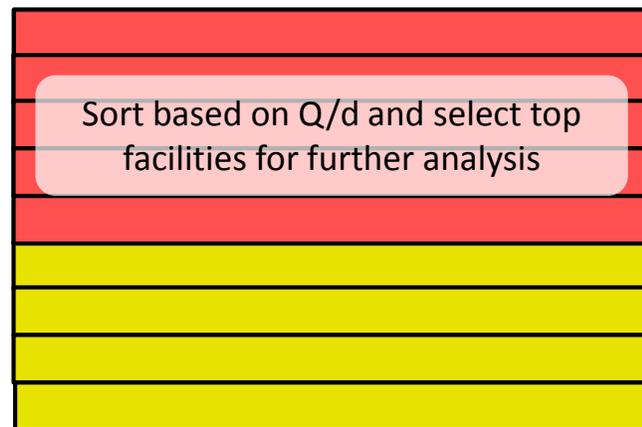
STEP 1: Screening Analysis

Permitted Stationary Sources

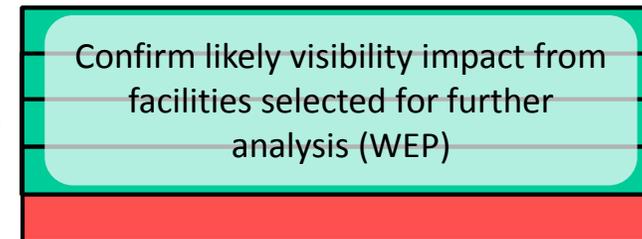
All Permitted Stationary Sources



Top NOx+SO2 Emitters



Top Q/d Sources



STEP 1: Current Status of Screening Analysis

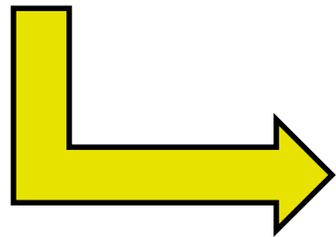
- Montana has developed Q/d data for all permitted stationary sources
 - Analyzed 2014-2017 emissions from Annual Emission Reporting, some states may only use 2014 or a different single year
- Next Steps:
 - Consider various Q/d thresholds and analyze whether facilities selected represent a large enough pool of emissions potentially impacting each Class I area
 - Finalize decision on Q/d threshold and begin facility consultations
 - Use WEP results to confirm visibility impacts from selected facilities

IMPORTANT:

Those facilities “screened out” will not require further analysis. Facilities that require further analysis still may not end up requiring additional emission reductions

STEP 2: Emission Reduction Strategies

- For each facility selected through the screening process:
 - Identify existing level of control and date of most recent controls
 - Identify additional available retrofit technologies - SO₂ and NO_x
 - Eliminate technically infeasible options
 - Evaluate control effectiveness of remaining technologies
 - Evaluate impacts and document results



Four-Factor Analysis

STEP 3: Four-Factor Analysis

- Emission reduction strategies will be analyzed base on the following factors:
 - 1) Cost of compliance
 - 2) Time necessary for compliance
 - 3) Energy and non-air quality environmental impacts of compliance
 - 4) Remaining useful life of any potentially affected major or minor stationary source or group of sources
- The four-factor analysis is a case-by-case technical analysis that will be completed by working closely with identified facilities

DEQ-Facility Consultation

- We need your help (soon!)
- DEQ will be contacting the facilities identified through the screening process to kick-off conversations about emission reduction strategies
 - Timing: late-February/early-March
- Goal of this process:
 - DEQ and facilities consult to compile the information necessary for a four-factor analysis. The final outcome of the analysis will be control requirements and compliance dates that are incorporated into a federally-enforceable regional haze SIP
- DEQ will continue to bring regular updates to CAAAC

Questions?

Contact:

Rebecca Harbage, Air Quality Planner
Regional Haze Project Manager
(406) 444-1472
RHarbage@mt.gov