

# **MONTANA**

## **REGIONAL HAZE VISIBILITY PROTECTION PLAN REGULATION OF OPEN BURNING SOURCES**



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# GOALS

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- **Goal #1** - Regulate for visibility protection equitably among sources.
- **Goal #2** - Accommodate open burning to greatest extent possible.
- **Goal #3** - Provide cost-effective implementation and tracking.
- **Goal #4** - Keep it simple.

# IMPLEMENTATION

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PERMANENT AND ENFORCEABLE  
VISIBILITY CONTROL STRATEGIES  
WILL BE IMPLEMENTED THROUGH:

- Existing Smoke Management Program.
- Existing Open Burning Rules & Permits.
- RPO Commitments.

# PHASED STRATEGY

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- **Phase #1** - Improve existing calculation & reporting techniques - and - capture existing Emission Reduction Techniques.
- **Phase #2** - Restrict emissions by airshed by season through an emissions budget.
- **Phase #3** - Restrict agriculture / minor open burning activities.

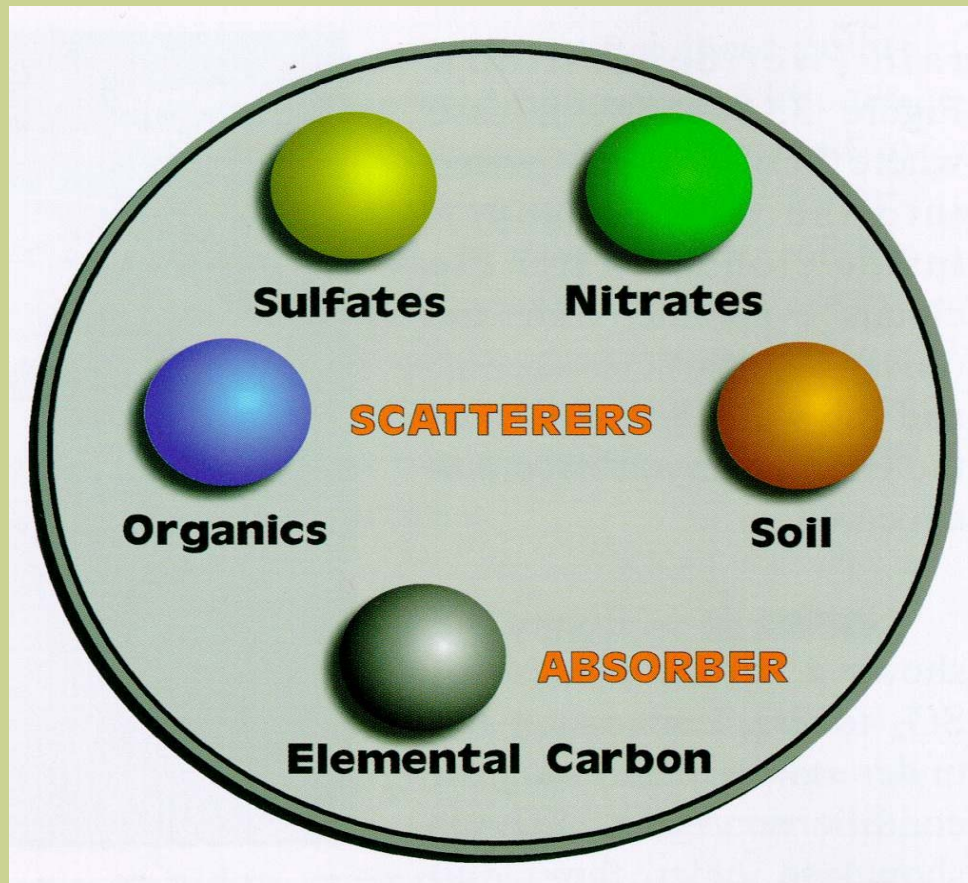
# STEPWISE PROCESS

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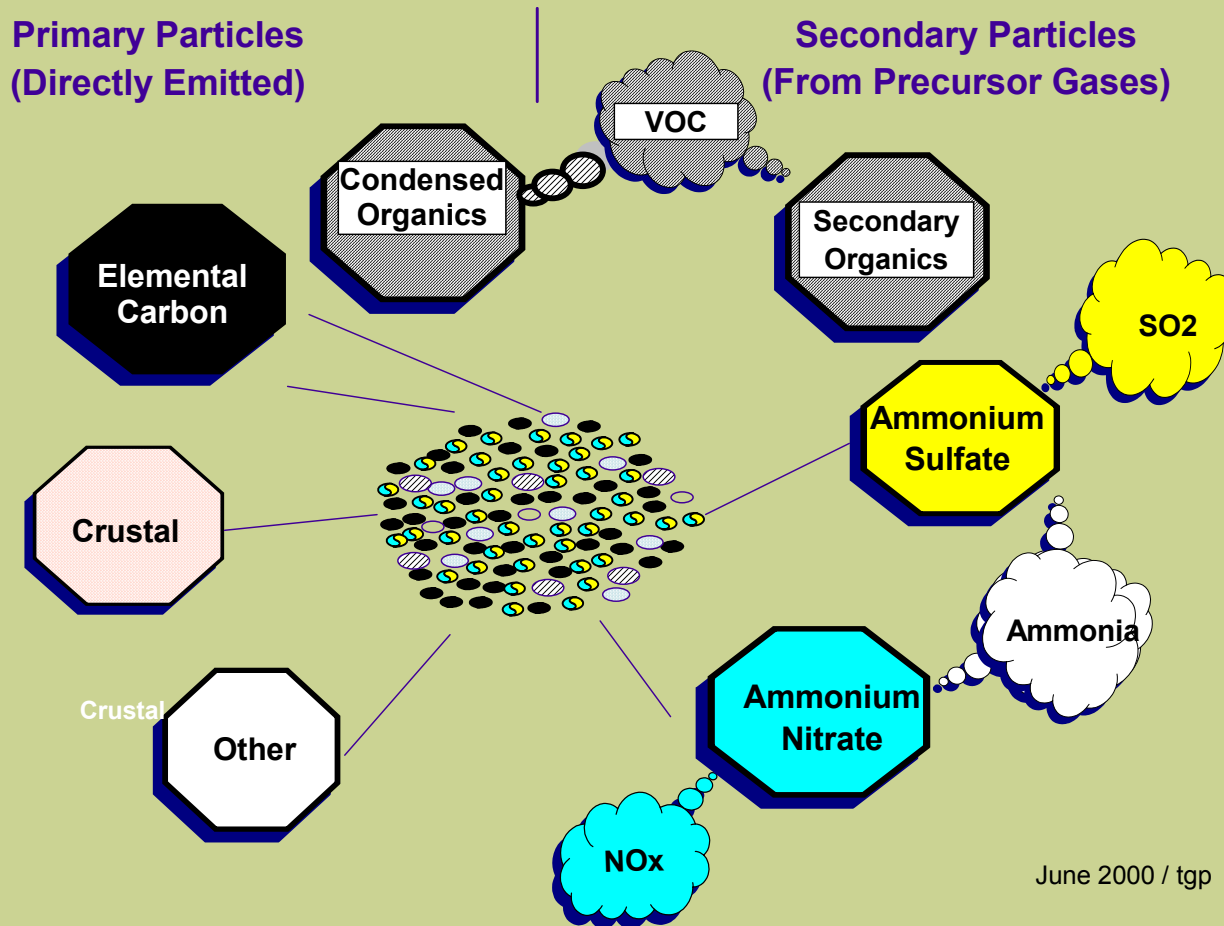
- **Step #1** - 'Attribution of Haze' report to attribute & apportion particles for each Class 1 area.
- **Step #2** - Determine emissions from open burning for each airshed for baseline year.
- **Step #3** – Implement phase strategies.

# The Five Particle Types That Make up Nearly all Particulate Matter found in the Atmosphere.

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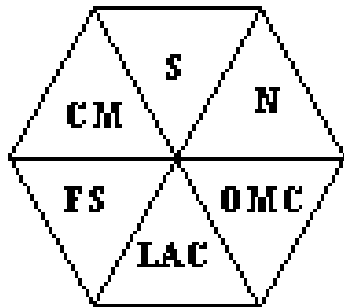
# PM 2.5 In Ambient Air: A Complex Mixture



# Causes of Haze Report

## “Hazagon” Analysis

The hazagon provides a way to visualize speciated extinction for those sites in the 20 percent worst category



Contributions of the major aerosol chemical components to the light extinction in the 20% worst days of the year:

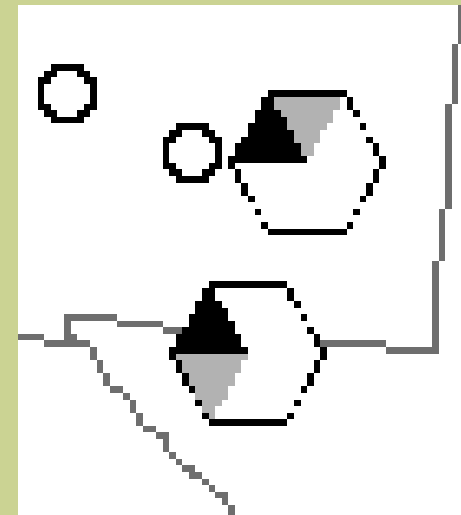
Black: >40% Grey: 10-40% Blank: <10%

S – Sulfate, N – Nitrate, OMC – Organic Mass by Carbon

LAC – Light Absorbing Carbon, CM – Coarse Mass, FS – Fine Soil



Missing data Best 20% 20-50% 50-70% 70-80%



# EXAMPLE COMPLEXITY

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## Bob Complex:

3 Large Class I areas

1,323,169 acres (combined)

Western Montana

Forest Ecosystem

Near Canada

## Selway-Bitterroot:

Large Class 1 area

1,340,460 acres

Western Montana

Forest Ecosystem

Borders Idaho

## Medicine Lake:

Small Class I area

11,366 acres

Eastern Montana

Prairie Ecosystem

Near Canada & North Dakota



# TAILORED STRATEGIES

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## WRAP 1996 Emissions Near Class I Areas Report

Bob Complex: 1,070 tons PM-2.5  
1,534 tons VOC / NOx  
\* 99% from Anthropogenic \*  
Within four airsheds

Selway-Bitterroot: 38,525 tons PM-2.5  
31,772 tons of VOC / NOx  
\* 92% from Natural \*  
Within two airsheds

Medicine Lake: 20 tons PM-2.5  
16 tons of VOC / NOx  
\* 99% from Anthropogenic \*  
Within one airshed

# WHAT'S MY POINT?

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- The 1996 total emissions data are not necessarily equal to the actual 'causes of haze' – but is a strong indicator.
- Fire emissions within Class I areas in MT vary extremely – even those in close proximity to each other.
- Maximizing burners opportunity to burn requires precision regulation by airshed.
- Intestate sources of fire emissions unknown.

# PRODUCTS FROM FEJF

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- **Emission Reduction Technique Credits:** A 'look-up table' method that allows burners to calculate emissions reduction percent by ERT.
- **Fire Regime / Condition Class Maps:** Maps illustrating fire return intervals / existing fuel loading for purposes of categorizing Fire emissions as either 'anthropogenic' or 'natural' .
- **Fire Tracking System:** Geography to include small grids to capture 'airsheds'. MT intends to use FTS on a voluntary basis – no codification into rules.

# COMMENTS TO FEJF

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- **'Permanent and Enforceable'**: FEJF tools must consider this point. Some programs may not be as reliable - less flexible to states.
- **Spatial & Temporal**: Seasonality of 20 percent best and worst days is necessary for precision regulation of specific airsheds.
- **Minor Sources**: Residential / Tribal / Agriculture open burning source control strategies – legally & politically difficult to regulate.

# COMMENTS TO FEJF (continued)

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- **Annual Emissions Goal:** MT has a mechanism to regulate fire emissions – MT may not use ‘goals’ in lieu of ‘caps’. MT will work cooperatively with sources to establish initial caps – raise / lower as necessary for RFP.
- ‘Emissions Caps’ provide more certainty vs ‘Emissions Averted’.

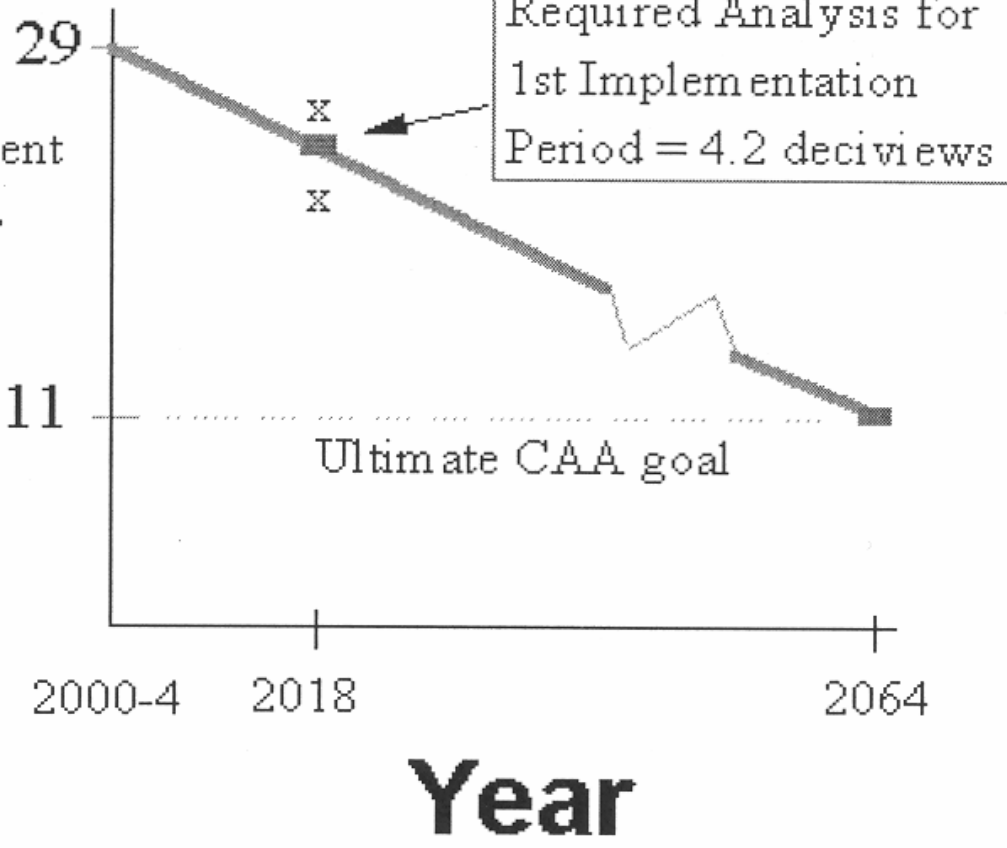
# REGULATOR REQUIREMENT

## Rate To Achieve Natural Conditions in 60 Years

*Example*

Baseline  
(Visibility impairment  
on 20% worst days,  
in deciviews)

Estimated  
Natural



**THE END**