

Fire Emissions Joint Forum
Technical & Policy Products
Overview

June 16, 2004

Portland, OR

FEJF Mission (7/2/98)

- The Fire Emissions Joint Forum (FEJF) is to make recommendations to the WRAP and related WRAP forums on policies and methodologies for:
 - ❖ estimating air pollution emissions and their effects on air quality and visibility due to smoke from various natural and human-caused fires
 - ❖ developing a data set and associated tracking system for those emissions in the geographical area at least encompassed by the GCVTC states and tribes
 - ❖ recommending strategies and methods to manage emissions from these sources.

- FEJF Workplan (February 25, 1999)

FEJF Deliverables

- Policies
- Guidance (incl. Public Education & Outreach)
- Technical (emission inventories)

FEJF Deliverables

Policies	Guidance/Ref	Technical
P1 Enhanced Smoke Mgt	G1 Non burning alts to Rx	T1 July 1996 EI (WF)
P2 Fire Categorization	G2 Non burning alts to Ag	T2 1996 EI (WF/RX)
P3 Annual Emission Goals	G3 Assessment of Smoke Effects in Planning Documents	T3 2018 EI (WF/RX/Ag)
P4 Fire Tracking System	G4 Emission Reduction Tech	T4 2002 EI Phase I
	G5 Elements of a BSMP	T5 EDMS
	G6 FEJF Flyer	
	G7 FEJF Storyline	
	G8 Smoke Management Program Survey (Rx & Ag & Tribal) EC/R	

Policies

P1	ESMP	Smoke management efforts that specifically address visibility. WRAP ESMP Policy states that there are 9 necessary elements of an ESMP to meet the requirements of the Rule. ESMPs are to be included in implementation plans based on the criteria of efficiency, economics, law, emissions reduction opportunities, land management objectives, and reduction of visibility impacts.
P2	Fire Category	Method to categorize fire emissions as “natural” or “anthropogenic.” Provides the basis for fire’s inclusion in natural background condition values and ultimately, the tracking of reasonable progress. The Classification Criteria section determines the “natural” and “anthropogenic” sources of fire that contribute to regional haze. The Program Management section expresses the prerequisites that enable classification to be effective and equitable.
P3	AEG	Annual Emission Goal - a quantifiable value used to measure progress each year in achieving the minimum emission increase from fire. The WRAP outlines a process for states/tribes to establish AEGs by using currently available Emission Reduction Techniques (ERTs in their regional haze implementation plans.
P4	FTS	Identifies 7 essential components of a Fire Tracking System that represent the minimum fire activity data necessary to consistently calculate emissions and to meet the requirements of the Rule.

WRAP ESMP Policy

- A. Enhanced smoke management programs under this Policy are defined as those smoke management efforts that specifically address visibility effects, and therefore, may need to be augmented to protect public health and welfare.
- B. Will apply to all fire sources
- C. Are required for 309 states
- D. Are a viable tool for 308/309 states/tribes to develop SIPs

1. WRAP ESMP Policy (cont')

Enhanced smoke management programs:

E. Include nine (9) elements:

1. Actions to minimize emissions
2. Evaluation of smoke dispersion
3. Alternatives to fire
4. Public notification
5. Air quality monitoring
6. Surveillance and enforcement
7. Program evaluation
8. Burn authorization
9. Regional coordination

1. WRAP ESMP Policy (cont')

Enhanced smoke management programs:

F. Will be based on the criteria of

- efficiency, economics, law, emissions reduction opportunities, land management objectives, reduction of visibility impacts

G. May be applied uniformly or tailored to meet a need

H. Will be developed and applied collaboratively

Fire Tracking Policy

- Tracking fire activity information is necessary in the WRAP region for all fire types using a fire tracking system, which will also provide the information essential to create a fire emissions inventory. States and tribes will provide the WRAP with updated fire activity information on an annual basis.

Fire Tracking Policy

- A fire tracking system includes the following seven essential components that are necessary in order to consistently calculate emissions and uniformly assess impacts to regional haze:
 1. Date of Burn
 2. Burn Location
 3. Area of Burn
 4. Fuel Type
 5. Pre-Burn Fuel Loading
 6. Type of Burn
 7. “Anthropogenic” or “Natural” Classification

Fire Tracking Policy

- The development of fire tracking systems by states and tribes will be done collaboratively with state, tribal, local and federal land management agencies, and private parties.

Guidance/References

G1	NBA to Rx	A comprehensive reference document that describes alternatives to Rx burning. Provides decision-makers with the tools necessary to develop cogent non-burning strategies for vegetation and fuel load management. Assist air quality regulators, environmental organizations, and the general public in understanding the practical advantages of non-burning alternatives.
G2	NBA to Ag	Identification of the “universe” of potential non-burning management alternatives. Identification of existing and potential accountability mechanisms for tracking if, and which, non-burning alternatives are used by federal, state, local, and tribal entities, and potential barriers to their implementation. Development of a plan for implementing alternatives in the 15 Western states.
G3	Assessment of Smoke Effects in Planning Docs	Investigates the existing level of consideration given to smoke impacts in fire planning documents. The project involved gathering and reviewing different types of fire-related documents from many agencies and tribal entities that perform/authorize controlled or natural burns, to assess the emphasis placed on smoke impacts.
G4	ERT	A bibliography and summary table on ERTs for agricultural burning and wildland fire in support of the WRAP/FEJF’s guidance development process.

Guidance/References

G5	BSMP Elements	Developed by the FEJF to assist regulatory authorities, such as state/local/tribal agencies, in developing basic smoke management programs for wildland fire. The 7 elements of a basic SMP are identified and organized according to the basic components of a certifiable SMP as described in EPA's Interim Air Quality Policy on Wildland and Prescribed Fires.
G6	Flyer	A condensed version of the Storyline.
G7	Storyline	The Storyline outlines the mission of the FEJF, its membership, activities, and timelines, and in general terms, the role of fire and its effects on air quality in the West.
G8	SMP Surveys – Rx & Ag (EC/R) and Tribes (ITEP)	Identifies the ways in which States, Tribes and local areas address smoke management (on forestry and ag lands) through regulations and programs. Each surveyed program is unique and reflects climate, geography, vegetation type, burn objectives, and other constraints (air quality and funding). These reports will assist the FEJF with establishment of a SMP clearinghouse and elements of basic SMPs for wildland fire as envisioned by the GCVTC.

Technical

T1	July 1996 (WF)	Emission inventory of historic wildfire in July 1996. Used for developing the FEJF's EI methodology and as a fire placeholder for initial regional dispersion model runs.
T2	1996 EI (WF,Rx)	Emission inventory of historic wildfire & prescribed fire in 1996. Built from refined EI methodologies including plume characteristics. Used by the WRAP/Regional Modeling Center (RMC) for air quality model (CMAQ) performance evaluation runs.
T3	2018 (WF,Rx,Ag)	Projections of wildfire (typical year), prescribed fire (based on 1995 Fire Emissions Project (FEP)), and agricultural burning (from ERG ag burning activity data) for 2018. Representative projections of fire activity for 2018 were used to create a year's worth of simulated, realistic fire events. Used by the WRAP/RMC for initial visibility impact apportionment and Regional Haze SIP demonstrations of reasonable progress.
T4	2002 EI Phase I	Emission inventory of historic wildfire and prescribed fire in 2002. Built from refined EI methodologies including plume characteristics. Used by WRAP/RMC for CMAQ model performance evaluation and to test source apportionment. (2018 Agricultural Burning – Base Smoke Management inventory will be used as a surrogate for 2002 agricultural burning.)
T5	Emissions Data Management System (EDMS)	

309 States/Tribes

Regional Haze SIP Requirement

Prescribed fire programs must address:

- Visibility
- Minimizing emissions
- Evaluation of dispersion
- Alternatives to burning
- Public notification
- Monitoring
- Surveillance and enforcement
- Program evaluation

Maintain an emission inventory and fire tracking system.

Remove administrative barriers to decreasing emissions from fire.

Implement Enhanced Smoke Management Plans.

Adopt Annual Emission Goals – minimize increases in emissions to the maximum extent practicable.

309 States/Tribes

State Regional Haze SIP Requirement	FEJF Product
Prescribed fire programs must address – visibility; minimizing emissions; evaluation of dispersion; alts to burning; public notification; monitoring; surveillance and enforcement.; program evaluation.	ALL
Maintain an emission inventory and fire tracking system.	T1 – T5; P4
Remove administrative barriers to decreasing emissions from fire.	G1; G2; G4
Implement Enhanced Smoke Management Plans.	P1; G5; G8
Adopt Annual Emission Goals – minimize increases in emissions to the maximum extent practicable.	P3; G1; G2; G4

P1	ESMP
P2	Fire Category
P3	AEG
P4	FTS
G1	NBA to Rx
G2	NBA to Ag
G3	Assessment
G4	ERT
G5	BSMP Elements
G6	Flyer
G7	Storyline
G8	SMP Surveys
T1	July 1996 (WF)
T2	1996 EI (WF,Rx)
T3	2018 (WF,Rx,Ag)
T4	2002 EI Phase I
T5	EDMS

308 States/Tribes

Regional Haze SIP Requirement

Establish BASELINE visibility conditions for each Class I area.

Estimate NATURAL conditions for Most and Least impaired days.

Quantify required improvement (Baseline – Natural) required to achieve goal by 2064.

Establish Reasonable Progress Goals (glide slope) through modeling, monitoring, and emissions information.

State must consider smoke management techniques for ag and forestry management purposes including plans as currently exist within the state in developing long term strategy.

Establish Long Term Strategy and demonstrate its sufficiency to meet Reasonable Progress Goals.

308 States/Tribes

State Regional Haze SIP Requirement	FEJF Product
Establish BASELINE visibility conditions for each Class I area.	IMPROVE (Emissions)
Estimate NATURAL conditions for Most and Least impaired days.	IMPROVE
Quantify required improvement (Baseline – Natural) required to achieve goal by 2064.	IMPROVE (Emissions)
Establish Reasonable Progress Goals (glide slope) through modeling, monitoring, and emissions information.	T1-T5; P2; P4
State must consider smoke management techniques for ag and forestry management purposes including plans as currently exist within the state in developing long term strategy.	P1; G5; G8
Establish Long Term Strategy and demonstrate its sufficiency to meet Reasonable Progress Goals.	G1-G5; P1; P3

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