

A Review of EPA's Proposed Revisions to the National Ambient Air Quality Standards for Particulate Matter

FINAL DRAFT

I. Introduction

EPA has proposed revisions to its national ambient air quality standards (NAAQS) for particulate matter (PM). The revisions affect standards PM less than 2.5 microns (PM-2.5) and for coarse-sized particles (PM-10 and PM10-2.5). The revisions would also affect the ambient air monitoring requirements for PM.

II. PM NAAQS & Related Rules Published in the Federal Register (FR)

11/1/05 - PM2.5 Implementation rule proposed in 70 FR 65984
1/17/06 - PM NAAQS Revisions proposed in 71 FR 2620
1/17/06 - PM Monitoring Regulations proposed in 71 FR 2710
2/9/06 - Transition to New or Revised PM NAAQS; advanced notice of proposed rulemaking in 71 FR 6718
3/10/06 – Treatment of Data Influenced by Exceptional Events; proposed in FR 12592

III. Proposed Timeline for PM NAAQS Rulemaking

12/20/05 - Notice of proposed PM NAAQS rulemaking
1/17/06 - Proposed PM NAAQS published in FR (start 90-day comment period)
4/17/06 - End of public comment period on proposed PM NAAQS
9/27/06 - EPA issues final revised PM standards
11/27/06 - EPA promulgates new PM standards

IV. PM-2.5 NAAQS Compliance Designation Timeline

11/27/08 – States' recommendations to EPA (based on 2005-2007 monitoring data)
11/27/09 – EPA makes final designations (based on 2006-2008 monitoring data)
4/27/10 – Effective date for EPA's PM2.5 designations
4/27/13 – Deadline for States to submit PM-2.5 State Implementation Plans (SIP)

V. PM10-2.5 NAAQS Compliance Designation Timeline

7/27/12 – States' recommendations to EPA (based on 2009-2011 monitoring data)
5/27/12 – EPA makes final designations
7/27/13 – Effective date for EPA PM10-2.5 designations
7/27/16 – Deadline for States to submit PM10-2.5 SIPs

VI. Issues with the Proposed PM NAAQS

- EPA limits the PM10-2.5 standard to only defined urban areas (>100k pop.)
- EPA limits the PM10-2.5 standard to a specific source mix (no ag or mining)
- Proposed rulemaking is unclear which activities are considered part of mining and agricultural operations, thus exempted from PM10-2.5 control
- Seasonal variability in meteorology and source activity makes it unclear when the PM10-2.5 standard even applies to an area
- EPA proposes to revoke the PM-10 standards without adequate replacement protection
- In the absence of a state and federal PM-10 standard, current permit conditions must be revised, reducing source hours of operation
- Revoking the PM-10 standards will increase the haze levels for Class I federal areas affected by PM10-2.5 and crustal PM-2.5
- EPA's proposed PM-2.5 standards (numeric values) are outside Clean Air Scientific Advisory Committee's and EPA staff recommendations
- EPA funding support for PM10-2.5 network is nonexistent
- Prevention of Significant Deterioration (PSD) issues associated with transition from PM-10 to PM10-2.5

VII. Montana PM Monitoring Data Review & Compliance Projections

Table 1 reviews the current and proposed PM NAAQS. Table 2 projects potential PM-2.5 non-attainment areas in Montana under different NAAQS scenarios. Tables 3 and 4 summarize ambient PM2.5 data by community.

Table 1. Current & Proposed PM-2.5 & PM-10 NAAQS (units are $\mu\text{g}/\text{m}^3$)

FORM	PM-10 (1987)	PM10-2.5 (2006)	PM-2.5 (1997)	PM-2.5 (2006)
24-Hour	150 ¹	70 ³	65 ³	35 ³
Annual	50 ²	na	15 ⁴	15 ⁴

¹ Expected 24-hr average exceedance from statistical calculations based on 3 years of data

² Annual mean from statistical calculations based on 3 years of data

³ 3-year average of the 98th percentile values

⁴ 3-year average of the spatially averaged means

Table 2. Potential PM-2.5 Non-Attainment Areas
(Projected for various 24-hour & annual standard scenarios)

For 35 µg/m ³ 24-hour avg. 98 th Percent.	For 30 µg/m ³ 24-hour avg. 98 th Percent.	For 25 µg/m ³ 24-hour avg. 98 th Percent.	At 13 µg/m ³ Annual Mean 3-yr avg.	At 12 µg/m ³ Annual Mean 3-yr avg.
Missoula (46)	Missoula (46)	Missoula (46)	Libby (15)	Libby (15)
Libby (44)	Libby (44)	Libby (44)	Missoula (11)	Missoula (11)
Hamilton (39)	Hamilton (39)	Hamilton (39)	Whitefish (11)	Whitefish (11)
Butte (37)	Butte (37)	Butte (37)	Butte (10)	Butte (10)
Helena (34)	Helena (34)	Helena (34)		
Whitefish (34)	Whitefish (34)	Whitefish (34)		
Kalispell (31)	Kalispell (31)	Kalispell (31)		
	Belgrade (30)	Belgrade (30)		
	Lincoln (27)	Lincoln (27)		
	Great Falls (27)	Great Falls (27)		
		T. Falls (22)		

Red = currently demonstrating noncompliance

Orange = potential for noncompliance

(##) = PM2.5 concentrations in µg/m³ from 2003 – 2005 monitoring data

Table 3. Annual PM2.5 24-hour Values & 3-Year Averages
(24-hr values are 98th percentile; units are µg/m³)

Location	1999 ¹	2000 ¹	2001 ¹	Avg ³	2002 ²	2003 ²	2004 ²	2005 ²	Avg ³
Belgrade	nd	51	33	nd	25	30	25	36	30
Billings	17	28	23	23	14	22	19	21	21
Bonner	nd	nd	nd	nd	26	42	43	nd	nd
Butte	35	63	22	40	27	44	30	36	37
G. Falls	nd	28	17	nd	18	51	12	18	27
Hamilton	nd	109	34	nd	24	34	45	37	39
Helena	20	41	38	33	18	32	33	38	34
Kalispell	20	27	26	24	24	51	25	18	31
Libby	52	44	45	47	47	43	38	51	44
Lincoln ⁴	nd	nd	29	nd	45	50	14	18	27
Missoula	29	53	44	42	25	49	47	43	46
See. Lake	nd	nd	nd	nd	nd	nd	23	25	nd
T. Falls	nd	nd	16	nd	18	33	18	15	22
Whitefish	27	29	37	31	28	57	23	22	34
W. Yell.	nd	nd	nd	nd	nd	5	18	8	10

¹ Includes all valid data

² Excludes data flagged as 'exceptional events'

³ Averages based on the preceding 3-yr periods; 1999-2001 and 2003-05

⁴ Different monitoring sites between 2002 & 2003

nd = no data

Table 4. Annual PM-2.5 Means & 3-Year Average of Annual Means
 (Annual means not calculated as required by 40 CFR Part 50 Appendix N; units are $\mu\text{g}/\text{m}^3$)

Location	1999 ¹	2000 ¹	2001 ¹	Avg. ³	2002 ²	2003 ²	2004 ²	2005 ²	Avg. ³
Belgrade	nd	11	9	nd	7	9	7	11	9
Billings	8	9	8	8	7	8	8	7	8
Bonner	nd	nd	nd	nd	10	9	8	nd	nd
Butte	7	14	7	9	7	10	9	10	10
Gr. Falls	nd	8	5	nd	5	7	5	6	6
Hamilton	nd	16	9	nd	7	8	9	8	8
Helena	6	11	9	9	7	8	8	9	8
Kalispell	7	9	8	9	8	10	9	8	9
Libby	16	17	16	16	16	16	14	16	15
Lincoln ⁴	nd	nd	9	nd	11	7	5	4	5
Missoula	10	15	10	12	8	11	11	11	11
See.Lake	nd	nd	nd	nd	nd	nd	12	11	nd
T. Falls	nd	nd	6	nd	6	7	6	6	6
Whitefish	11	12	15	13	9	13	10	10	11
W. Yell.	nd	nd	nd	nd	nd	2	5	4	4

¹ Includes all valid data

² Excludes data flagged as 'exceptional events'

³ Average of annual means based on the preceding 3-yr periods; 1999-2001 and 2003-05

⁴ Different monitoring sites between 2002 & 2003

nd = no data