

**State** Wyoming

**State Agency** Department of Environmental Quality

**Affected Area** EPA-approved nonregulatory provisions

**Regulation** .

**Rule Number** (16) XVI.

**Rule Title** City of Sheridan - PM10 Air Quality Control and Maintenance Plan.

**State Effective Date** 02/01/1989

**State Adoption Date** 07/17/1989

**EPA Effective Date** 07/25/1994

**Notice of Final Rule Date** 06/23/1994

**Notice of Final Rule Citation** 59 FR 32360

**Comments**

Rule:



[\(e\)\(16\) XVI. Sheridan PM10 Control and Maint Plan \(07-17-1989\).pdf](#)

Implementation Plan for  
PM-10 Control Strategies  
Sheridan, Wyoming

July 17, 1989

Under the PM-10 Regulations promulgated by the Environmental Protection Agency on July 20, 1987, Sheridan was designated a Group I area. The Air Quality Division was required to develop a State Implementation Plan outlining control strategies with a demonstration of attainment and maintenance of the standards. In a cooperative effort with the Sheridan City government a plan, which is included as part of this implementation plan, was developed which addressed four PM-10 control measures. Each control measure is addressed separately below:

1. Sanding Plan - On February 21, 1989 the Sheridan City Council adopted an Air Quality Maintenance Plan (AQMP) developed by the Sheridan Air Quality Committee with support from the City Engineer, Public Works Director, and Wyoming Air Quality Division. The AQMP outlined, in detail, a street sanding and maintenance plan aimed at reducing PM-10 emissions. The plan designates specific limitations/guidelines for the following parameters: sanding routes, sanding medium, application rates, and street cleaning. Compliance with the plan will be verified by visual inspections and quantitative means by both the Director of Public Works and Air Quality Division personnel. The City will provide an annual written report summarizing the year's activities. A copy of the approved plan is included in Appendix I of this document.

TASKS/RESPONSIBILITY

City - Implement sanding plan

- A. Sanding Routes
- B. Sanding Medium
- C. Application Rates
- D. Street Cleaning
- E. Compliance Evaluation
- F. Annual Written Report

Division -

- A. Compliance Evaluation

RESOURCES

City - Commitment provided by City Council approval on February 21, 1989 of the sanding plan as outlined in Sheridan Air Quality Maintenance Plan. As this sanding plan is reduction in sanding over past years, additional funding was not required. The City has already budgeted for street sanding, cleaning, and maintenance.

Division - As summarized in the Sheridan Air Quality Maintenance Plan several parameters with the sanding plan will be monitored by the Division as a measure of compliance. Below each parameter is discussed with a schedule of review by the Air Quality Division.

a. Sanding Routes - Random windshield surveys will be made by Division personnel on a weekly basis during the sanding season. This will be easily accomplished as the Division has a district office in Sheridan. Discrepancies cited during the surveys will be discussed with the Director of Public Works in a timely manner.

b. Sanding Material - The Director of Public Works will have a sieve analysis performed with each batch of material purchased. These results will be presented and reviewed by the Division with the annual report.

c. Application Rate - The City has committed to quantitatively measuring the application rate on a bimonthly basis. The Division will observe at least one of these tests each sanding season. The other test results will be reviewed by the Division with the annual report.

d. Street Cleaning - As with the sanding routes, street cleaning activity will be monitored randomly by windshield surveys during the season. These surveys will be performed on a weekly basis. In addition total street cleaning activity will be tracked and reviewed by the Division with the annual report.

e. Yearly Report - The annual report submitted by the City will be reviewed by the Division. As mentioned above several parameters will be tracked to compare with specifications in the plan.

~~2. Voluntary Curtailment of Solid Fuels Combustion - As part of the AQMP voluntary "no burn days" will be designated when PM-10 concentrations exceed or are predicted to exceed established criteria levels. The Division has committed to obtain a nephelometer to gather "real time" particulate data and provide correlations with monitored PM-10 concentrations. This information used in conjunction with weather predictions from the National Weather Service will be utilized to trigger the request for burning curtailment. The criteria for calling curtailments will be developed cooperatively by the City and Air Quality Division. During the 1989 - 1990 heating season "real time" data will be collected to establish curtailment criteria. In addition the Division will initiate public education programs aimed at solid fuel users. A description of the proposal approved by the City Council is included in the AQMP document in Appendix I.~~

~~TASKS/RESPONSIBILITY~~

~~City -~~

- ~~A. Assist in establishment of curtailment criteria.~~
- ~~B. Assist in public education program~~

Division -

- A. Obtain realtime monitor
- B. Develop data correlations
- C. Establish curtailment criteria
- D. Implement "no burn" days
- E. Initiate public education program

RESOURCES

City - The primary role will be that of providing positive public support of the curtailment program. The Mayor has solidly supported the voluntary curtailment plan. City personnel will also provide input in the development of curtailment criteria and assist in the public education program.

Division - The Division has obtained budgetary approval through the E.P.A. to purchase, install, and operate a nephelometer. This is temporarily on hold pending evaluation of other real time monitoring methods, specifically Beta Attenuated Monitors. Division personnel will correlate the real-time data with actual PM-10 monitoring data to established criteria levels for calling curtailments. In the interim the Division will work with the City to establish criteria for use until real time monitoring can be implemented. The Division has assumed the lead role in the public education program. The details of this program have not been settled but will include a multimedia public awareness presentation. The Division will develop a schedule for developing the Voluntary Curtailment Program using the EPA "Guidance Document for Residential Wood Combustion Emission Control Measures" and provide such schedule to EPA by September 1, 1989.

3. In the Air Quality Division's analysis of Sheridan's air quality, industrial areas associated with the Veteran's Administration Hospital, Burlington Northern Railroad, and Wyoming Sawmill were identified as significant sources of fugitive dust. The Division requested the facilities address fugitive dust concerns in the following manners:

A. Wyoming Sawmill - In a letter dated October 27, 1988 the Division required that a dust control plan be submitted specifying, as a minimum, application of asphalt, oil, or suitable chemical dust control agents on unpaved roads within their operation. Wyoming Sawmill submitted a dust control plan on January 13, 1989 proposing application of Dust Control Oil during the Spring and again if needed on work areas and unpaved roads up to the property line. The Division required that the plan be extended to cover the entire road to pavement on Sheridan Avenue. A subsequent plan has been submitted extending the plan to cover the entire road up to pavement on Sheridan Avenue. The dust control agent was changed from dust oil to calcium chloride. Correspondence concerning these issues is in Appendix II.

TASKS/RESPONSIBILITY

Wyoming Sawmill -

- a. Apply Dust Control Oil as designated in letter and as required by the Division.
- b. Re-apply control chemical and maintain road as necessary.

Division -

- a. Compliance Evaluation

B. Burlington Northern Railroad - In a letter dated October 27, 1988 the Division required that a dust control plan be submitted specifying, as a minimum, application of asphalt, oil, or suitable chemical dust control agents on unpaved roads within their operation. No response was received so a second letter was sent on March 2, 1989. In a letter dated March 23, 1989 but received on May 8, 1989, the BN specified that they plan to reduce fugitive dust by closing a main unpaved road to through traffic by installing gates. In addition, the Division will require application of asphalt, oil or suitable dust control agents on designated unpaved access roads if it is determined that company use of the access roads warrants additional control. Correspondence concerning these issues and a dust control plan are included in Appendix III.

TASKS/RESPONSIBILITY

Burlington Northern -

- a. Implement dust control program.

Division -

- a. Compliance Evaluation

C. Veteran's Administration Hospital - In a letter dated December 18, 1987, the Division requested that they dispense with scoria usage for skid control on roads at their facility and use a more durable washed sand. Although a plan has not been submitted, recent inspections have verified that sand is being used at the facility. Correspondence concerning this issue is contained in Appendix IV.

~~TASKS/RESPONSIBILITY -~~

~~VA Hospital -~~

- ~~a. Use sand for skid control on facility roads~~

~~Division -~~

- ~~a. Compliance Evaluation~~

Copies of the correspondence concerning these issues are included in the Appendix.

4. As some of the streets in Sheridan are maintained and sanded by the County and Wyoming Highway Department, the Division contacted these agencies to petition their cooperation in the local effort by employing similar sanding practices as the City. In letters dated December 30, 1988, the Division requested that the County and WHD submit sanding plans specifying application rates, sanding routes, a durable/washed sanding medium, and effective street cleaning. On January 17, 1989, the WHD submitted a sanding plan specifying a sanding medium and sanding routes. On February 6, 1989, Sheridan County provided a sanding plan outlining sanding routes, sanding medium, and application rates. Copies of the correspondence are included in the Appendix V and VI.

TASKS/RESPONSIBILITY

Wyoming Highway Department and County -

- A. Used washed sand on roads within the Sheridan area.
- B. Reduce where possible application rates.
- C. Clean roads in a timely manner.

Division -

- A. Determine compliance with specified plan.

The final Appendix of this document contains the Sheridan PM-10 SIP Development Plan. This document serves as the demonstration of compliance with the PM-10 standards by the implementation of the control measures in this Implementation Plan.

CITY OF SHERIDAN - AIR QUALITY MAINTENANCE PLAN

February 1, 1989

I. Fugitive Dust Control Plan:

In accordance with the Sheridan PM-10 S.I.P. Development Plan dated January 20, 1989 (see attached), the City of Sheridan has designed a Street Winter Maintenance Program (S.W.M.P.) with the goal of providing a safe driving environment and controlling fugitive road dust. The details of the S.W.M.P. are as follows:

- A. Street Sanding - The following streets will be sanded at an application rate not to exceed 2000 lbs. per lane mile;
1. Fort Road - Veterans Administration.
  2. Franklin Ave. from Fort Road to Goose Creek - Wyoming Highway Department (W.H.D.).
  3. Intersections approaching Main St. from First St. to Fort Road - City of Sheridan.
  4. Fifth St. from I-90 to Midland Road - W.H.D. and City of Sheridan.
  5. Eleventh St. from Main to Dana - City of Sheridan.
  6. Dana from Eleventh St. to Park Drive - City of Sheridan.
  7. Tenth St. from Dana to Highland Drive - City of Sheridan.
  8. Eighth St. from Main to Dana - City of Sheridan.
  9. Dana from 13th St. to 15th St. - City of Sheridan.
  10. Midland Road from the 1400 block to the 1800 block - County (from top to bottom of descent into Sheridan Heights Draw).
  11. North Heights Drive from 1600 block of North Heights Ave. to Highland Drive - City of Sheridan.
  12. North Heights Ave. from North Heights Drive to Hillpond Drive - City of Sheridan.
  13. Hillpond Drive - City of Sheridan.
  14. Long Drive from Hillpond Drive to 5th St. - City of Sheridan.
  15. Intersection of Midland and 5th St. - W.H.D. and County.
  16. Vale Boulevard - City of Sheridan.
  17. Intersection approaching 5th St. - City of Sheridan.
  18. Dunnuck from Greystone to Adair - City of Sheridan.
  19. Adair from 5th St. to Arlington Blvd. - City of Sheridan.
  20. Burton St. from Jackson to Highland Drive - City of Sheridan.
  21. Avon from Jackson to Highland Dr. - City of Sheridan.
  22. Lewis St. from Highland to Alger - City of Sheridan.
  23. Intersections approaching Lewis St. from Jackson to Adair - City of Sheridan.
  24. Corner of Long Drive and Victoria St. - City of Sheridan.
  25. Intersection of Victoria St. and Kentucky Ave. - City of Sheridan.
  26. Corner of North and East Mountain View Dr., North and West Mountain View Drive, South and East and South and West Mountain View Drive - City of Sheridan.
  27. Woodworth St. from Idaho to Highland Dr. - City of Sheridan.
  28. Wyoming 331 from Vale St. to Centennial Lane - W.H.D.

29. Sparrowhawk Road from Meadowlark Lane to Wyoming 331 - City of Sheridan.
30. Intersections approaching Loucks St. from Vale to Brooks City of Sheridan.
31. Burkitt from Griffith to Sherman - City of Sheridan.
32. Thurmond from College to Loucks - City of Sheridan.
33. Intersections approaching Thurmond from College to Burkitt City of Sheridan.
34. College from Thurmond to Main - City of Sheridan.
35. Big Horn Ave. from West Brundage Lane to College - W.H.D. and City of Sheridan.
36. Sioux from DeSmet to Big Horn - City of Sheridan.
37. DeSmet from Absaraka to Souix - City of Sheridan.
38. Intersection of Absaraka and Big Horn - City of Sheridan.
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41. Gould from Burkitt to Dow - City of Sheridan.
42. Scott and Broadway from Burkitt to Dow - City of Sheridan.
43. Conner from Burkitt to Works - City of Sheridan.
44. Custer from Works to Brundage - City of Sheridan.
45. Sheridan Ave. from Burkitt to KROE Lane - City of Sheridan.
46. Intersection of Burkitt and Sheridan Ave. - City of Sheridan.
47. Coffeen from Burkitt to Little Goose Creek - City of Sheridan.
48. Coffeen from Little Goose Creek to Sheridan College - W.H.D.
49. Sheridan Ave. from Avoca to Wyoming - City of Sheridan.
50. Intersections of Whittier, Bryant, Lowell Streets and Wyoming Ave. - City of Sheridan.
51. Intersections of Wyoming and College Avenues and Sheridan Ave. - City of Sheridan.
52. Burkitt St. from Brooks to Conner - City of Sheridan.
53. Works St. from Brooks to Conner - City of Sheridan.
54. Loucks from Brooks to Scott - City of Sheridan.
55. Brundage from Brooks to Scott - City of Sheridan.
56. Grinnell from Main to Scott - City of Sheridan.
57. Alger from Brooks to Broadway - City of Sheridan.
58. Dow from Alger to Broadway - City of Sheridan.
59. 1st Street from Broadway to Crook - City of Sheridan.
60. Intersection of 4th and Sheridan Ave. - City of Sheridan.
61. Intersections of Main St., Sheridan Ave. and Colorado St. City of Sheridan.
62. Intersections approaching Colorado St. from Gladstone to Illinois St. - City of Sheridan.
63. Emerson from Brock Ave. to Montana St. - City of Sheridan.
64. Montana St. from Emerson to Sheridan Ave. - City of Sheridan.
65. Intersection of Avoca and Sheridan Ave. - City of Sheridan and County.
66. Avoca from Little Goose Creek bridge to Coffeen Ave. - City of Sheridan and County.
67. Intersection of Sugarland Drive and Coffeen Ave. - City of Sheridan.
68. Intersection of Riverside St. and Coffeen Ave. - City of Sheridan.
69. Wyoming 334 from Coffeen to Big Horn - W.H.D.
70. Intersection of Big Horn Ave. and Wyoming 334 - W.H.D.
71. Intersection of Wyoming 334 and Sheridan Ave. - W.H.D.
72. Airport Road from Zuni Drive to Martin - W.H.D.
73. Airport Road from Warren to Big Horn - W.H.D.

- 74. Davis Tee - City of Sheridan.
- 75. U.S. 14 from Coffeen to Industrial Park Drive - W.H.D.
- 76. I-90 at interchanges, 3 each - W.H.D.
- 77. West Brundage Lane from Big Horn to Airport - County.

The material used for sanding the streets will consist of clean durable material conforming to the following gradations as per the 1980 edition of the W.H.D. Specifications for Road and Bridge Construction:

1. Section 703.10 "Aggregate for Plant Mix Wearing Course". The aggregate for plant mix wearing course shall be crushed stone or gravel composed of hard, durable pebbles or fragments and a filler of finely crushed stone or gravel, where required, to provide a composition of aggregates meeting the following requirements for the type specified.

Sieve Designation	Percentage Passing	
	Type A	Type B
½"(12.5 mm)	100	100
3/8"(9.5 mm)	97-100	97-100
#4 (4.75 mm)	25-45	20-40
#8 (2.36 mm)	10-25	10-20
#200 (0.075 mm)	2-7	2-7

When either Type A or Type B wearing course is specified, the aggregate material, prior to crushing, shall be of such size that not less than 95% shall be retained on a sieve with square openings of 3/8 inch (9.5 mm).

The Aggregate shall be free from vegetable matter, lumps or balls of clay, adherent films of clay, or other matter that would prevent thorough coating with bituminous material. The aggregate shall have a percentage of wear of not more than 35.

2. Section 703.13 "Cover Coat Aggregate". Only one type of aggregate shall be used on the project unless alternate types are approved.

Cover aggregate for seal coats shall be crushed stone, crushed ledge rock, crushed or natural gravel, or sand. This material shall consist of clean, tough, durable fragments free from an excess of flat, elongated, soft or disintegrated pieces and free from stone coated with dirt or other objectionable matter.

Material used for the production of Type A, B, or C cover aggregate shall be stone, ledge rock, or boulders of such size that prior to crushing not more than five percent will pass a 3/4" (19.0 mm) screen for Type A or a ½" (12.5 mm) screen for Type B and Type C.

Type D cover aggregate shall be crushed stone, crushed gravel, or clean pea gravel.

Type A, B, C, or D shall have a percentage of wear of not more than 35, unless a different percentage of wear is shown on the plans.

Type E cover aggregate shall be crushed sand-gravel. Type S cover aggregate shall be screened or pit-run sand. The plasticity

index of either Type E or Type S shall not exceed three.

The material produced shall be well graded from coarse to fine within the following gradation requirements for the specified type:

Sieve Designation	Percentage Passing					
	Type A	Type B	Type C	Type D	Type E	Type S
1"(25.0 mm)	100	--	--	--	--	--
3/4"(19.0 mm)	95-100	100	--	100	100	--
1/2" (12.5 mm)	30-60	95-100	100	95-100	95-100	100
3/8"(9.5 mm)	--	--	95-100	--	--	95-100
#4 (4.75 mm)	0-15	0-15	0-20	0-15	35-70	85-100
#8 (2.36 mm)	0-7	0-7	0-12	0-7	--	--
#200 (0.075 mm)	0-2	0-2	0-2	0-2	0-10	0-5

In conjunction with the sanding program, a street cleaning program consisting of street flushing and sweeping will be instituted. The program will consist of sweeping and water flushing at every opportunity. A minimum of one (1) hour of street cleaning should be occurring for every three and one half (3½) hours of street sanding, weather permitting. This ratio of one (1) hour sweeping or flushing per three and one half (3½) hours of sanding applies to street cleaning operations on designated sanding routes. Other city streets will be cleaned under the city's normal maintenance operations.

In order for the program to be effective it will need to be carefully monitored for compliance with the before mentioned parameters. The specific parameters, monitoring methods and personnel are as follows:

<u>Parameter</u>	<u>Methods</u>	<u>Frequency &amp; Responsibility</u>
1. sanding routes	visual	during operation - Dept. of Public Works (D.P.W.) periodically - Dept. of Environmental Quality (D.E.Q.)
2. sanding material	quantitative lab gradation to be obtained	as required - D.P.W.
3. application rate	quantitative - tare & loaded weight of truck per lane mile	bi-monthly - D.P.W. periodically - D.E.Q.
*4. street cleaning	quantitative - from hour meter on equipment per total hours sanding per month	monthly - D.P.W. periodically - D.E.Q.
5. yearly report	written	annually - D.P.W. annually-review - Mayor annually-review - D.E.Q.
* during winter months sweeping will only occur on sanded streets.		

The City's normal street cleaning operations will be maintained to provide control of fugitive dust from streets other than those on the designated sanding routes. In general this will require the City to flush and/or sweep all paved roadways under their control at least once per year. Other agencies controlling roadways in the Urban Area (i.e. Sheridan County and the Wyoming Highway Dept.) are to be contacted and provided with this document. It will be requested that they tailor their sanding and cleaning operations to match the City's so as to provide a more comprehensive effort to control fugitive dust air pollution from roadways.

Should the before described S.W.M.P. fail to reduce PM-10 concentrations to below acceptable levels, an alternative winter street maintenance procedure has been developed and modeled to determine its effectiveness. The alternative plan calls for the use of deicing chemicals on downtown streets. Streets included in this program are as follows:

1. Main St. from Burkitt to Dow.
2. Gould from Burkitt to Dow.
3. Scott and Broadway from Burkitt to Dow.
4. Conner from Burkitt to Works.
5. Custer from Works to Brundage.
6. Sheridan Ave. from Burkitt to KROE Lane.
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11. Grinnell from Main to Broadway.
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13. Dow from Brooks to Broadway.

With the elimination of sanding and the use of chemical deicers on the above mentioned streets, combined with street cleaning the alternative program could be expected to produce a 2mg/m to 3 mg/m reduction in PM-10 readings. The annual cost of this alternate program is estimated to be \$35,000.00 in 1988.

It should again be emphasized that the use of chemical deicers is an alternate program should the primary S.W.M.P. of sanding control fail to bring PM-10 readings into acceptable ranges.

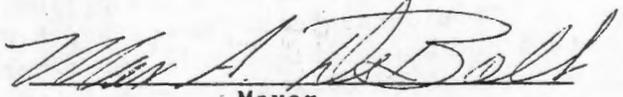
## II. Voluntary Curtailment of Solid Fuels Combustion:

As per the Sheridan PM-10 S.I.P. Development Plan, this phase of the plan is not necessary to achieve compliance with the ambient standards, although it will reduce ambient concentrations of PM-10 particulates from solid fuel combustion. Due to their chemical composition and small size they potentially present a greater hazard to human health, and visibility. In addition this category of emissions are most often mentioned when responding to citizen complaints concerning air quality. They are by far the most noticeable category of pollutant due to their impact on visibility and odor. To implement this portion of the plan, a city ordinance would be needed requesting that homeowners and businesses voluntarily curtail the burning of solid fuels when air quality parameters reach a certain level of degradation. Real time particulate concentrations would be provided by a nephelometer located at one of present PM-10 monitoring sites. Additional information concerning weather predictions would be obtained through the National Weather Service Office at the airport. Burning alerts would be made public by announcements in the newspaper, public radio, and weather radio.

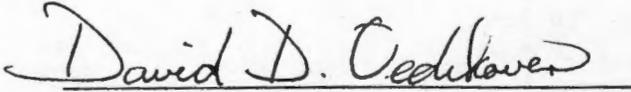
In order to provide reference background material and to facilitate future air quality maintenance planning the Sheridan PM-10 S.I.P. Develop-

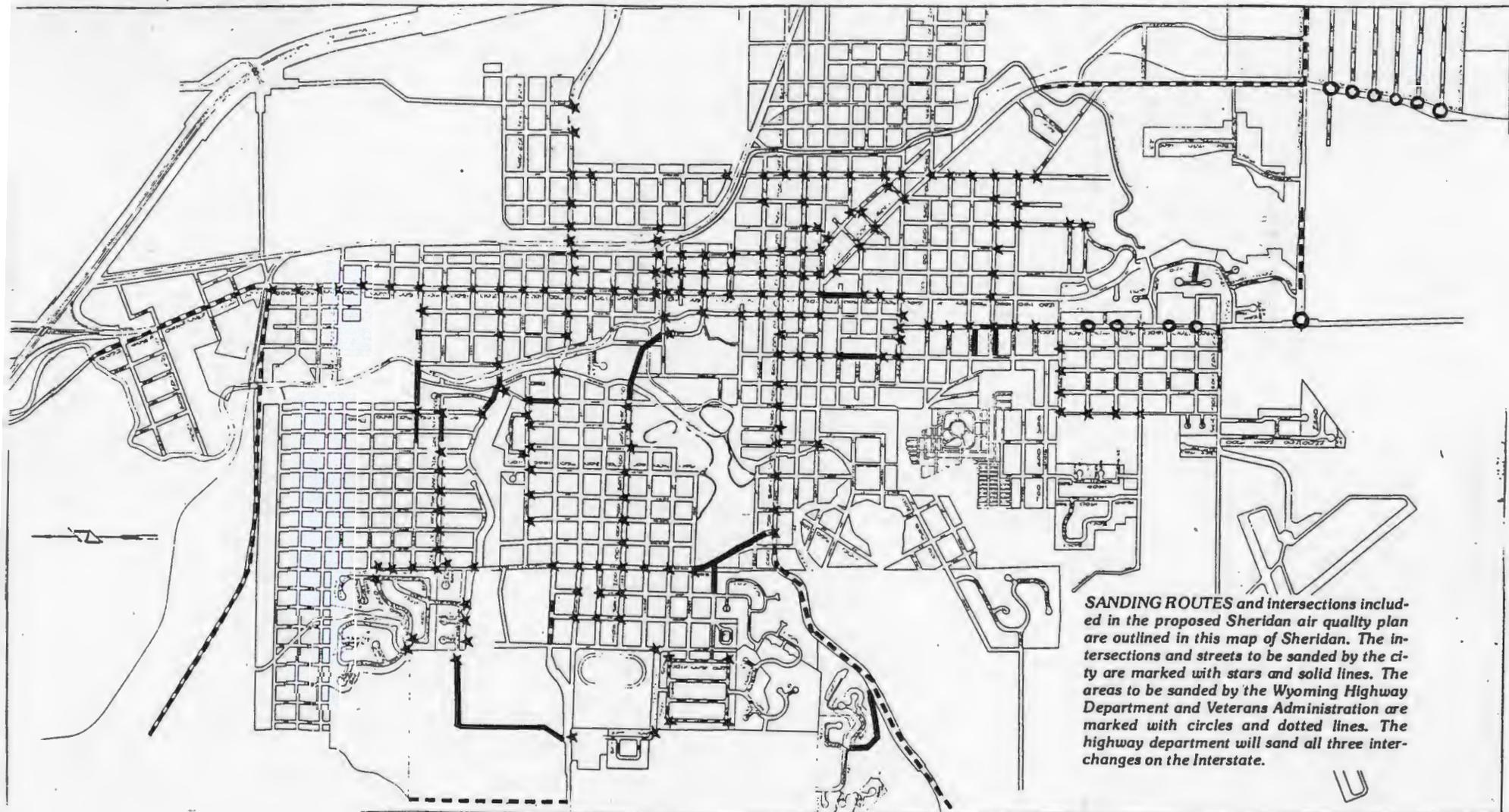
ment Plan dated January 20, 1989, with attachments, is adopted as part of the City of Sheridan's Air Quality Maintenance Plan.

PASSED, APPROVED AND ADOPTED this 21<sup>st</sup> day of February, 1989.

  
Mayor

ATTEST:

  
City Clerk



*SANDING ROUTES and intersections included in the proposed Sheridan air quality plan are outlined in this map of Sheridan. The intersections and streets to be sanded by the city are marked with stars and solid lines. The areas to be sanded by the Wyoming Highway Department and Veterans Administration are marked with circles and dotted lines. The highway department will sand all three interchanges on the Interstate.*

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February 1, 1989

(i) A

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71. Intersection of Wyoming 334 and Sheridan Ave. - W.H.D.
72. Airport Road from Zuni Drive to Martin - W.H.D.
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- 76. I-90 at interchanges, 3 each - W.H.D.
- 77. West Brundage Lane from Big Horn to Airport - County.

The material used for sanding the streets will consist of clean durable material conforming to the following gradations as per the 1980 edition of the W.H.D. Specifications for Road and Bridge Construction:

1. Section 703.10 "Aggregate for Plant Mix Wearing Course". The aggregate for plant mix wearing course shall be crushed stone or gravel composed of hard, durable pebbles or fragments and a filler of finely crushed stone or gravel, where required, to provide a composition of aggregates meeting the following requirements for the type specified.

Sieve Designation	Percentage Passing	
	Type A	Type B
½" (12.5 mm)	100	100
3/8" (9.5 mm)	97-100	97-100
#4 (4.75 mm)	25-45	20-40
#8 (2.36 mm)	10-25	10-20
#200 (0.075 mm)	2-7	2-7

When either Type A or Type B wearing course is specified, the aggregate material, prior to crushing, shall be of such size that not less than 95% shall be retained on a sieve with square openings of 3/8 inch (9.5 mm).

The Aggregate shall be free from vegetable matter, lumps or balls of clay, adherent films of clay, or other matter that would prevent thorough coating with bituminous material. The aggregate shall have a percentage of wear of not more than 35.

2. Section 703.13 "Cover Coat Aggregate". Only one type of aggregate shall be used on the project unless alternate types are approved.

Cover aggregate for seal coats shall be crushed stone, crushed ledge rock, crushed or natural gravel, or sand. This material shall consist of clean, tough, durable fragments free from an excess of flat, elongated, soft or disintegrated pieces and free from stone coated with dirt or other objectionable matter.

Material used for the production of Type A, B, or C cover aggregate shall be stone, ledge rock, or boulders of such size that prior to crushing not more than five percent will pass a 3/4" (19.0 mm) screen for Type A or a ½" (12.5 mm) screen for Type B and Type C.

Type D cover aggregate shall be crushed stone, crushed gravel, or clean pea gravel.

Type A, B, C, or D shall have a percentage of wear of not more than 35, unless a different percentage of wear is shown on the plans.

Type E cover aggregate shall be crushed sand-gravel. Type S cover aggregate shall be screened or pit-run sand. The plasticity

index of either Type E or Type S shall not exceed three.

The material produced shall be well graded from coarse to fine within the following gradation requirements for the specified type:

Sieve Designation	Percentage Passing					
	Type A	Type B	Type C	Type D	Type E	Type S
1" (25.0 mm)	100	--	--	--	--	--
3/4" (19.0 mm)	95-100	100	--	100	100	--
1/2" (12.5 mm)	30-60	95-100	100	95-100	95-100	100
3/8" (9.5 mm)	--	--	95-100	--	--	95-100
#4 (4.75 mm)	0-15	0-15	0-20	0-15	35-70	85-100
#8 (2.36 mm)	0-7	0-7	0-12	0-7	--	--
#200 (0.075 mm)	0-2	0-2	0-2	0-2	0-10	0-5

In conjunction with the sanding program, a street cleaning program consisting of street flushing and sweeping will be instituted. The program will consist of sweeping and water flushing at every opportunity. A minimum of one (1) hour of street cleaning should be occurring for every three and one half (3½) hours of street sanding, weather permitting. This ratio of one (1) hour sweeping or flushing per three and one half (3½) hours of sanding applies to street cleaning operations on designated sanding routes.

Other city streets will be cleaned under the city's normal maintenance operations.

In order for the program to be effective it will need to be carefully monitored for compliance with the before mentioned parameters. The specific parameters, monitoring methods and personnel are as follows:

<u>Parameter</u>	<u>Methods</u>	<u>Frequency &amp; Responsibility</u>
1. sanding routes	visual	during operation - Dept. of Public Works (D.P.W.) periodically - Dept. of Environmental Quality (D.E.Q.)
2. sanding material	quantitative lab gradation to be obtained	as required - D.P.W.
3. application rate	quantitative - tare & loaded weight of truck per lane mile	bi-monthly - D.P.W. periodically - D.E.Q.
*4. street cleaning	quantitative - from hour meter on equipment per total hours sanding per month	monthly - D.P.W. periodically - D.E.Q.
5. yearly report	written	annually - D.P.W. annually-review - Mayor annually-review - D.E.Q.
* during winter months sweeping will only occur on sanded streets.		

The City's normal street cleaning operations will be maintained to provide control of fugitive dust from streets other than those on the designated sanding routes. In general this will require the City to flush and/or sweep all paved roadways under their control at least once per year. Other agencies controlling roadways in the Urban Area (i.e. Sheridan County and the Wyoming Highway Dept.) are to be contacted and provided with this document. It will be requested that they tailor their sanding and cleaning operations to match the City's so as to provide a more comprehensive effort to control fugitive dust air pollution from roadways.

Should the before described S.W.M.P. fail to reduce PM-10 concentrations to below acceptable levels, an alternative winter street maintenance procedure has been developed and modeled to determine its effectiveness. The alternative plan calls for the use of deicing chemicals on downtown streets. Streets included in this program are as follows:

1. Main St. from Burkitt to Dow.
2. Gould from Burkitt to Dow.
3. Scott and Broadway from Burkitt to Dow.
4. Conner from Burkitt to Works.
5. Custer from Works to Brundage.
6. Sheridan Ave. from Burkitt to KROE Lane.
7. Burkitt from Brooks to Sheridan Ave.
8. Works from Brooks to Sheridan Ave.
9. Loucks from Brooks to Scott.
10. Brundage from Brooks to Scott.
11. Grinnell from Main to Broadway.
12. Alger from Brooks to Broadway.
13. Dow from Brooks to Broadway.

*Contingency  
Plan*

With the elimination of sanding and the use of chemical deicers on the above mentioned streets, combined with street cleaning the alternative program could be expected to produce a 2mg/m to 3 mg/m reduction in PM-10 readings. The annual cost of this alternate program is estimated to be \$35,000.00 in 1988.

It should again be emphasized that the use of chemical deicers is an alternate program should the primary S.W.M.P. of sanding control fail to bring PM-10 readings into acceptable ranges.

## II. Voluntary Curtailment of Solid Fuels Combustion:

As per the Sheridan PM-10 S.I.P. Development Plan, this phase of the plan is not necessary to achieve compliance with the ambient standards, although it will reduce ambient concentrations of PM-10 particulates from solid fuel combustion. Due to their chemical composition and small size they potentially present a greater hazard to human health, and visibility. In addition this category of emissions are most often mentioned when responding to citizen complaints concerning air quality. They are by far the most noticeable category of pollutant due to their impact on visibility and odor. To implement this portion of the plan, a city ordinance would be needed requesting that homeowners and businesses voluntarily curtail the burning of solid fuels when air quality parameters reach a certain level of degradation. Real time particulate concentrations would be provided by a nephelometer located at one of present PM-10 monitoring sites. Additional information concerning weather predictions would be obtained through the National Weather Service Office at the airport. Burning alerts would be made public by announcements in the newspaper, public radio, and weather radio.

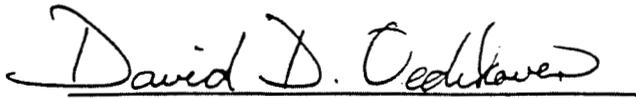
In order to provide reference background material and to facilitate future air quality maintenance planning the Sheridan PM-10 S.I.P. Develop-

ment Plan dated January 20, 1989, with attachments, is adopted as part of the City of Sheridan's Air Quality Maintenance Plan.

PASSED, APPROVED AND ADOPTED this 21<sup>st</sup> day of February, 1989.

  
Mayor

ATTEST:

  
City Clerk