MISSOULA COUNTY

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Responses to Public Comment from the November 18, 2004 Hearing on the Missoula Carbon Monoxide Redesignation Request and Maintenance Plan

January 10, 2005

Air Quality Advisory Council - Vice Chair Alex Gorman

1. Based on the Council's discussion and understanding of the CO Redesignation Request and Maintenance Plan, the Council believes the request meets the requirements for redesignation. Therefore the Council recommends the Board approve the request to be forwarded to the Environmental Protection Agency.

No changes were incorporated into the document as a result of this comment.

Note: the following comments came from individual Council members and do not represent a consensus of the Air Quality Advisory Council.

2. Suggested using actual industrial emissions in the inventory instead of potential emissions in the emission inventory and maintenance demonstration, especially if it sets a precedent for the PM_{10} redesignation effort that might establish budgets for other sources in addition to transportation (Leif Griffin)

See response under the **Smurfit-Stone** *comments.*

3. Questions about the Brooks/South/Russell intersection project (Leif Griffin)

See response under **Leif Griffin, Missoula resident** *comments.*

4. Not sure whether Gross Domestic Product is the best way to look at projected emission increases from the two industrial sources in the non-attainment area (Leif Griffin)

See response under the **Smurfit-Stone** *comments*

5. Wants to make sure that we always look at improving air quality, instead of being satisfied with simply meeting the national standard (Jan Hoem)

It is the goal of the Missoula City-County Air Program to create and implement programs to maintain and improve healthy air quality in the county. The Missoula Air Programs declared policy and purpose is as follows:

> The public policy of the City and County of Missoula (hereafter "City and County"), and the purpose of this Program, is to preserve, protect, improve, achieve and maintain such levels of air quality, as will protect human health and safety, and to the greatest degree practicable, prevent injury to plant and animal life and property, foster the comfort and convenience of the inhabitants, and facilitate the enjoyment of the natural attractions of the City and County, and to promote the economic and social development of the City and County. To this end, it is the purpose of this Program to require the use of all available practicable methods to reduce, prevent and control air pollution in the City and County. The regulations contained herein are hereby established and approved by the

Missoula City-County Air Pollution Control Board, the Missoula City Council and the Missoula Board of County Commissioners to prevent, abate or control air pollution.

6. Needing to acknowledge in the document that traffic patterns and congested intersections have changed since 1992 when the saturation study was completed (Alex Gorman)

This comment has been incorporated into the revised document.

7. Concerns that the assumptions built into the model seem optimistic, but that will probably be counterbalanced by the buffers built into the plan (Alex Gorman, Jan Hoem).

No changes were incorporated into the document as a result of this comment.

Jon Bouma, University of Montana student

Looks like the plan will work, although he doesn't know about data that has been collected.

See the technical documents for more information about the data used to support the request. These are available on the internet at www.co.missoula.mt.us/EnvHealth/AirQ/CO%20Redesignation/redesignationindex.html

No changes were incorporated into the document as a result of this comment.

Kristin Bowman, University of Montana student

The plan for reconstruction at malfunction junction is a good idea.

The Department agrees with Ms. Bowman that the project is a good idea and that it will have air quality benefits. The redesignation request discusses the realignment project at the intersection and the modeling assumes that it will be completed between 2005 and 2010. However, the redesignation request does not place the project into the State Implementation Plan. No changes were incorporated into the document as a result of this comment.

Loreen Folsom, Missoula resident

1. Concerned that redesignation will allow more industries to locate in the Missoula area and make it easier for existing industries to pollute more.

Once Missoula is redesignated, major industrial sources within the non-attainment areas will no longer have to follow the requirements listed in Title 17, Chapter 8, subchapter 9, " Permit Requirements for Major Stationary Sources or Major Modifications Locating Within Nonattainment Areas." These rules require:

- *any permits issued for a new source or modification of an existing source in a non-attainment area contain an emission limit which constitutes the lowest achievable emission rate for that pollutant;*
- *sources to obtain reductions in actual emissions from existing sources in the non-attainment are;, and*
- *sources to submit an analysis of alternative sites, sizes and production processes and environmental control techniques demonstrating that the benefit of the proposed new source or modification outweighs its environmental and social costs.*

These rules make it more difficult for new sources to locate within a non-attainment area or for existing sources to expand. However, other permitting regulations will still apply to any new or existing stationary source once the area is redesignated. These include Title 17, Chapter 8:

- *Subchapter 7, "Permit, Construction and Operation of Air Contaminant Sources"*
- *Subchapter 8, "Prevention of Significant Deterioration of Air Quality"*
- *Subchapter 10, "Preconstruction Permit Requirements for Major Stationary Sources or Major Modifications Locating Within Attainment or Unclassified Areas"*
- *Subchapter 12, "Operating Permit Program"*

The application of these rules provides adequate protection to prevent violations of CO standards by industrial sources. No changes were incorporated into the document as a result of this comment.

2. Concerned that the redesignation request sends a message to the public that Missoula's air is safe to breathe, but it is not. The CO standards are not stringent enough to protect public health.

The redesignation request only addresses carbon monoxide because that is the approach of the federal Clean Air Act. It does not address any other pollutants in the ambient air. As far as CO is concerned, the request celebrates the progress Missoula has made in reducing ambient CO levels. Missoula has not recorded a violation of the CO standard since 1991, and CO levels have continued to decrease over the years. In the last five years, the highest measured 8-hour average at the Malfunction Junction monitor was 5.5 ppm, which occurred in 2001. The second highest 8-hour average in that year was 3.9 ppm. Those averages are well below the standard of 9 ppm.

The federal standard is very protective of public health because it requires compliance at the worst ambient location even though most people in the community are exposed to much lower levels. The federal Clean Air Act requires the Environmental Protection Agency to review the science used to set the standards every five years. They last reviewed the CO standard in 1999/2000 and no modifications of the standard were recommended. However, if in the future the EPA makes a determination that the standard should be lowered, Missoula will be required to meet the lower standard. The Missoula Air Board does not have the ability to establish ambient air quality standards.

No changes were incorporated into the document as a result of this comment.

3. The Missoula Health Department has an obligation to make sure that additional pollutants are not allowed into the airshed on the basis of having met certain CO standards.

The Missoula Air Programs declared policy and purpose is as follows:

> The public policy of the City and County of Missoula (hereafter "City and County"), and the purpose of this Program, is to preserve, protect, improve, achieve and maintain such levels of air quality, as will protect human health and safety, and to the greatest degree practicable, prevent injury to plant and animal life and property, foster the comfort and convenience of the inhabitants, and facilitate the enjoyment of the natural attractions of the City and County, and to promote the economic and social development of the City and County. To this end, it is the purpose of this Program to require the use of all available practicable methods to reduce, prevent and control air pollution in the City and County. The regulations contained herein are hereby established and approved by the Missoula City-County Air Pollution Control Board, the Missoula City Council and the Missoula Board of County Commissioners to prevent, abate or control air pollution.

CO Redesignation will not change or negate the Board and Department's responsibility to continue to work for clean air. No changes were incorporated into the document as a result of this comment.

4. The Missoula Health Department has not adequately disclosed the known effects of chronic low-level exposure to CO and other air toxics.

The health effects information in the redesignation request was taken from the EPA's 2000 criteria document, when they last reviewed the CO standard. The federal Clean Air Act requires the EPA to reevaluate ambient air standards every 5 years, based on the best scientific information available at the time. Undoubtedly, research on the health effects of CO has continued in the intervening years and more information is available in the literature now than in 2000. However, this section is included for informational purposes only and does not represent an exhaustive search of the literature. In addition, it is not being incorporated into the State Implementation Plan and is not part of the requirements for redesignation. No changes were incorporated into the document as a result of this comment.

5. Redesignation represents a piecemeal approach, focusing on just one air pollutant, yielding a false impression of well-being.

Based on federal law, this redesignation request only addresses one pollutant: carbon monoxide. Yet, many of the controls that have reduced CO over the years have also reduced other pollutants, including particulate and air toxics. In addition, the Health Department continues to remind Missoula citizens that redesignation does not mean Missoula no longer has to worry about air pollution. Because Missoula is located in a deep mountain valley, which has frequent temperature inversions and stagnant air, Missoula will always have to take actions to reduce the amount of pollutants emitted into the air in order to keep the air clean and to prevent exceedances of the federal air quality standards. No changes were incorporated into the document as a result of this comment.

Leif Griffin, Missoula resident

The most recent modeling results show compliance with the CO standard without the Brooks/South/Russell realignment project. Since the project will occur anyway, it should be viewed as one that provides air quality improvements and an additional safety margin to ensure future compliance with the standard.

MDT awarded the construction contract for the Brooks/South/Russell realignment project in December 2004. The project became a committed project in 1999, and as a result, DEQ based the modeling on the assumption that is would be completed between 2005 and 2010. The project will reduce traffic congestion and improve air quality. However, this redesignation request does not place the project in the State Implementation Plan and does not state the project is required in order for EPA to redesignate the Missoula area. No changes were incorporated into the document as a result of this comment.

Terri Johns, Missoula resident

In favor of forwarding the maintenance plan to the EPA.

No changes were incorporated into the document as a result of this comment.

Max Koch, University of Montana student

1. Not sure of what the benefits are of being redesignated.

*The biggest benefit for Missoula is that it will no longer be on the list of areas not meeting the federal air quality standards, getting rid of any stigmas that go along with that listing. It represents and celebrates Missoula's success in reducing ambient CO concentrations. In addition, there is a benefit to industrial sources wanting to locate or expand in the non-attainment area, in that they would not have to comply with ARM Title 17, Chapter 8, subchapter 9, "Permit Requirements for Major Stationary Sources or Major Modifications Locating Within Nonattainment Areas." They will, however, have to meet the same permitting requirements as in other portions of the county and state, where CO standards are also being met. (See Comment #1 for **Loreen Folsom** for more information.) No changes were incorporated into the document as a result of this comment.*

2. Unclear why CO emissions from on-road vehicles is projected to decline so sharply over next 15 years.

Emissions from on-road vehicles decline so sharply because of the anticipated fleet turnover. Missoula currently has a significant number of older, more polluting cars and trucks (older than 1976 model year) that were built before modern federal emission standards took effect. As these vehicles are removed from the fleet, overall emissions decrease. In addition, while the CO emissions limitations for light-duty cars have not changed recently, EPA required car manufacturers to meet the emissions limitations even in cold temperatures (when emissions are at their highest) in 1992 and adopted new limitations in 1994 for light-duty trucks. As a result, as older cars and trucks are replaced with newer vehicles, less CO is emitted from the vehicle fleet as a whole. The emission reductions have such a large effect that, at this point, they offset the projected

increases in vehicle miles traveled. DEQ used the projected VMT increases from the 2004 transportation plan, which represented the latest planning assumptions. When Missoula has to update the maintenance plan 8 years after redesignation, these numbers will be revisited. The Department has modified the text in section 2.5.2.2 to make this more clear.

3. Why is utility industry not included?

   This type of industry does not exist in the non-attainment area. No changes were incorporated into the document as a result of this comment.

4. Concerned that CO emissions will increase in the future.

   CO emissions should continue to decrease in the future, as older cars are removed from the vehicle fleet and more woodstoves are removed from existing homes. However, CO monitoring will continue, and if CO levels do begin to climb, several mechanisms are in place to ensure Missoula does not return to a non-attainment status. First, the growth of transportation-related emissions, which is by far the largest contributor to CO in the Missoula area, is confined by the conformity regulations and the emissions budget that is established in the maintenance plan. Secondly, it is the policy of the Air Program to strive for clean air, not just meet the national ambient air quality standards. If CO levels begin to rise, the Air Board and the Department would most certainly take action to reduce the levels. Finally, if all else fails, the maintenance plan includes a contingency plan requiring *the Air Board to take action to reduce CO levels in a timely fashion. The Department revised Section 2.5.5.3 to clarify that the Board may take action to reduce CO levels before a single 8-hour exceedance of 9 ppm occurs.*

Jay Palmatier, Missoula resident

Missoula should be removed from the non-attainment list and oxygenated fuels should no longer be used in the winter. The minor reduction in CO pollution was more than compensated for by an increase in other pollutants and the additives cause water pollution. (Thankfully, only ethanol has been used after the first winter.)

This redesignation request does not remove the requirement for Missoula to use oxygenated fuel in the winter months of November, December, January and February, but that might be possible in the future. For the time being, the continued use of oxygenated fuels is needed to provide an adequate safety margin at the Brooks/South/Russell intersection and to ensure the transportation sector can meet the CO budget established in this plan. At the present time, federal tax programs offset the additional cost of oxygenated fuel at the pump.

As older cars are removed from the fleet, oxygenated fuels will provide less CO reduction. DEQ modeled the effects of oxygenated fuels on CO levels at the Brooks/South/Russell intersection. In 2000, oxygenated fuels were predicted to reduce CO concentrations by about 14%. In 2005, the average reduction was predicted to be about 11%. By 2015, however, the predicted reduction in CO concentrations from oxygenated fuels was only about 6%. The maintenance plan must be updated and resubmitted to the EPA within 8 years of redesignation, at

which time the efficacy of the oxygenated fuels program will be reexamined. Since maintenance plans can be amended, the Air Board can also initiate such a discussion before that time..

Mr. Palmatier may have been referring to MTBE when he stated that oxygenated fuels increase other pollutants and contaminate water. Since 1993, Missoula fuel distributors have agreed to use only ethanol as the oxygenate. Blending ethanol into the gasoline actually decreases *the amount of air toxics emitted from burning a gallon of gasoline. And ethanol does not contaminate water as MTBE has been shown to do.*

No changes were incorporated into the document as a result of this comment.

Reed Smith, Missoula resident

The Health Department has not completed a National Environmental Policy Act environmental analysis for this project.

Both the Montana Environmental Policy Act (MEPA) and the National Environmental Policy Act (NEPA) are the responsibility of other agencies. The local health department has no authority to implement or enforce those rules (it would be like the Health Department issuing speeding tickets.) A Guide to the Montana Environmental Policy Act *published by the Legislative Environmental Policy Office in 1998 states, "MEPA applies specifically to agencies of the State of Montana. It does not establish a requirement for agencies of local governments. However, local government agencies often receive funding support from state agencies. Actions by state agencies to support local government are subject to the provisions of MEPA."*[1] *As a result, <u>if</u> an Environmental Assessment (EA) or Environmental Impact Statement (EIS) is required, it would be the responsibility of DEQ. The same is true on the federal level. <u>If</u> an EA or EIS is required, EPA is required to perform it. Mr. Smith should direct any further concerns to these two agencies. No changes were incorporated into the document as a result of this comment.*

Smurfit-Stone Container, Missoula Mill - Leif Griffin

1. The Executive Summary should state that transportation and residential wood burning are responsible for over 98% of CO emissions, while industrial sources contribute only about 0.5%

This comment has been incorporated into the revised document, with the modification that transportation and wood burning are responsible for about 95% of the emissions on a typical winter weekday, and industrial sources combined with off-road vehicles, natural gas combustion and railroads contribute less that 5% of the CO emissions.

[1] Larry Mitchell, 2004, *A Guide to the Montana Environmental Policy Act (Revised)*, Legislative Environmental Policy Office of the Environmental Quality Council, Helena, Montana 59620-1704, page 10.

2. The modeled impact of industrial emissions should be stated in the report or the report should state that the impact of industrial emissions is insignificant.

The only modeling completed for the redesignation request was the hot-spot modeling at the Brooks/South/Russell intersection. Only on-road vehicle emissions emitted in the vicinity of the intersection were used in the model. All other sources (including on-road vehicle emissions produced in other areas of town, wood burning, industry and non-road sources are accounted for as part of the "background," but were not specifically modeled. For more information, refer to the technical report, CAL3QHCR Modeling Analysis for Missoula, Montana, Redesignation to Carbon Monoxide NAAQS Attainment. *This information was added to Section 2.5.2.1 for clarification.*

3. The Emission Inventory should be revised using permitted emissions rather than actual emissions for industry because industrial sources can operate at those limits.

In October 2003, Cyra Cain of DEQ asked Tim Russ, U.S. EPA, whether to use actual or permitted industrial emissions when preparing the emission inventory. He responded that the Calcagni memo, which serves as the guidance document for redesignation, specifies that the attainment inventory be based on actual "typical CO season day" emissions for that attainment year.[2] *EPA's 1991 guidance document, "Emission Inventory Requirements for Carbon Monoxide State Implementation Plans" states the same thing: CO emissions should be representative of a typical operating day during the peak CO season.*[3] *However, the emission inventory, which is just an accounting of CO emissions on a typical winter weekday in a particular year, does not limit sources' ability to operate at their permitted levels. No changes were incorporated into the document as a result of this comment.*

4. The Mill is concerned that the use of actual, instead of permitted emissions establishes a precedent that could be carried forward into the PM_{10} redesignation plan, potentially affecting budgets established for sources other than just transportation.

The Department does not believe that the CO plan sets a precedent for the PM_{10} plan, but appreciates Smurfit-Stone highlighting the need to base PM_{10} projections on industrial <u>permitted</u> levels if budgets are established for categories other than just transportation.

For CO projections, DEQ could have used either actual or permitted emissions. DEQ chose to use actual emissions for the projections because of the following email from Tim Russ, EPA, dated October 30, 2003:

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[2] John Calcagni, 1992, *Procedures for Processing Requests to Redesignate Areas to Attainment*, Memorandum to Regional Air Directors, U.S. Environmental Protection Agency, page 9.

[3] United States Environmental Protection Agency, 1991, *Emission Inventory Requirements for Carbon Monoxide State Implementation Plans*, (EPA 450/4-91-011), Office of Air Quality Planning and Standards, Office of Air and Radiation, EPA, Research Triangle Park, NC 27711, page 22.

For the issue regarding the use of actual or allowable emissions in the future-year projected inventories, the State should refer to our November 30, 1993 document "Use of Actual Emissions in Maintenance Demonstrations for Ozone and Carbon Monoxide (CO) Areas" – signed by D. Kent Berry. Early on, some areas that were looking to redesignate to attainment were having difficulty when they were required to only rely on allowable emissions for future-year projections. Based on this Nov 30, 1993 guidance memorandum, areas were provided with a means to use a source's actual emissions for the attainment year and then grow them by a documented factor for the projected future years. The State may use either method of project future year emissions in the maintenance plan; actual emissions with a documented growth factor(s) or permit allowable emissions. We suggest consideration be given to the possible results if permit allowable emissions are used in view of the possibility that these may be rather large CO emissions. The use of the actual emissions with a reasonable growth factor may provide a more realistic projection.

Using permitted emissions for the future projections could make it more difficult for transportation to meet its future year transportation conformity budgets, but that difficulty would be based on unrealistic emissions from industry. For example, Roseburg Forest Products emitted 17% of its permitted CO emissions in 2000. In its permit, Roseburg is allowed to emit 497 tons of CO per year, but, in 2000, only emitted 86 tons.[4] *Even if Roseburg were to double its production, it is unlikely to come anywhere close to its permitted levels. Nevertheless, using actual instead of permitted emissions does not limit Roseburg in any way. The plant still has the ability to emit as much CO as is allowed by its permit. If Roseburg (or Conoco) were to dramatically increase its CO emissions to more closely match its permitted levels, this would have to be addressed in the update of the maintenance plan eight years after Missoula is redesignated.*

No changes were incorporated into the document as a result of this comment.

5. Estimates of future emissions for Roseburg and Conoco are based on projected growth in domestic product, which is probably not an accurate indicator. Therefore, the plan should state that industrial growth will not be limited by the growth estimate used.

DEQ followed EPA protocol for projecting future industrial CO emissions in the non-attainment area, and while it might not be completely accurate, it was the best information DEQ had available. The projections do not establish a budget for sources other than transportation. This is noted in the revised text.

6. Section 1.4 Provide additional information on the commitments made, including dates and parties involved, regarding the sentence, "As a result, the Missoula community committed to fixing the traffic congestion problem at that intersection…"

This section is an overview of Missoula's carbon monoxide problem and the requested level of detail would not be appropriate. However, if Smurfit-Stone is interested in that information, much of it is a matter of public record. If requested, the Health Department will provide the mill with as much information as is in Health Department files, but some information may need to be obtained

[4] Cyra Cain, 2004, *2000 Missoula, Montana Carbon Monoxide Emission Inventory*, Department of Environmental Quality, Helena, MT 59620, page 17.

from different agencies, such as the Missoula City Council, the Missoula Public Works Department, the Montana Department of Transportation and the Missoula Office of Planning and Grants. No changes were incorporated into the document as a result of this comment.

7. Section 1.4 Note that Mullan and Reserve is a congested intersection.
This comment has been incorporated into the revised document.

8. Section 1.5 Correct the typographical error in the first sentence that left out "Part D requirements.
This comment has been incorporated into the revised document.

9. Section 2.0 Please show the monitoring station in Figure 2-1.
Rather than showing the monitoring site on the Air Stagnation Zone map, which would be inappropriate due to scale, an aerial photo has been included in the revised document illustrating the monitoring station's location.

10. Section 2.1.1 Add reference for EPA Quick Looks Report
This comment has been incorporated into the revised document.

11. Table 2-1 Formatting needed.
After talking to Leif Griffin, the formatting problem apparently occurred in the electronic version he received, but not in the Department's copy. No changes were incorporated into the document as a result of this comment.

12. Section 2.1.1 Add units to design values.
This comment has been incorporated into the revised document.

13. Section 2.1.1 Change the definition of design values to read that it is "the two highest values from a monitoring site within two consecutive calendar years."
"Design values" is confusing to define, but it is the highest second maximum 8-hour average, using two consecutive calendar years. The Department added an example to the document to better explain it. In addition, the Department corrected a mistake, which had listed the design value as 9.6 ppm instead of 9.7 ppm.

14. Table 2-2 Revise to show that aircraft exhaust has decreased (not increased) 18% between 1990 and 2000.
This comment has been incorporated into the revised document.

15. Section 2.3.1 Correct inconsistencies between numbers in Table 2-2 and numbers in the text.
This comment has been incorporated into the revised document.

16. Section 2.3.1 Add a statement that industry is only about 0.5% of the total CO emissions.

The Department revised and reorganized the text in this section to address the two largest sources first and then included a summary statement to point out that all other sources combined contributed less than 5% of the total daily wintertime emissions in 2000. In addition, the text now specifically states that industrial emissions accounted for approximately 0.41% of the daily wintertime CO emissions in 2000.

17. Section 2.3.2.1 Replace "because of a public outcry against the use of this chemical" with "because of the potential for groundwater contamination from this chemical."

Public concerns about the health effects of MTBE exposure spurred the Air Board to look more closely at the ramifications of using MTBE. The Board convened an expert panel, which recommended that the Board "make strong attempts to cause ethanol to preponderate over MTBE." As a result, the Department reached a voluntary agreement with the gasoline distributors to use only ethanol as the oxygenate for the required oxygenated fuels program. The panel did not report on MTBE's potential for groundwater contamination, however. That concern with MTBE became an issue in more recent years. The Department changed the language in the revised document to more clearly reflect what the concerns were at the time with using MTBE.

18. Section 2.3.2.2 Replace "tighter and tighter emission standards" with "lower and lower emission standards."

This comment has been incorporated into the revised document.

19. Section 2.3.2.2 Insert "becomes commercially available" at the end of the sentence in the second paragraph that begins, "In 1975, the automobile industry introduced…."

This comment has been incorporated into the revised document.

20. Table 2-3 Update the table; it's missing 8 years of data.

The table includes all the woodstove surveys that were done in Missoula. The last survey was completed in 1996. No other data is available. The text has been revised to make this clear.

21. Section 2.3.2.4 Change the third sentence in the fifth paragraph to read, "Another project replaced traffic signals at 50 locations in order to assist in the synchronization of traffic signals to reduce delays and congestion."

This comment has been incorporated into the revised document

22. Section 2.3.2.4 Describe how the transportation projects which used CMAQ funding reduced CO emission.

This comment has been incorporated into the revised document. If additional information is desired, Smurfit-Stone should contact the Office of Planning and Grants and the Montana Department of Transportation to ask about specific projects.

23. Section 2.5.1 CO emissions from industrial sources should be based on permitted or potential emissions and not actual emissions, because industry can operate at permitted levels.

See answers for comment 3 and 4 in this section.

24. Section 2.5.2.1 Place a footnote in the text, not in the header.

This comment has been incorporated into the revised document.

25. Section 2.5.2.1 Specify whether the modeled results include the Brooks/South/Russell realignment.

This comment has been incorporated into the revised document.

26. Section 2.5.2.1 What is the impact from industrial sources in this modeling?

The modeling just assessed transportation-related emissions generated near the intersection. All other emissions, including industry, wood burning, natural gas combustion, non-road sources and transportation-related emissions from other roads, were accounted for as part of the "background," but were not specifically modeled. For more information, refer to the technical report, CAL3QHCR Modeling Analysis for Missoula, Montana, Redesignation to Carbon Monoxide NAAQS Attainment. *This information was added to Section 2.5.2.1 for clarification.*

27. Section 2.5.2.2 Provide additional information/data/study findings about how on-road emissions will decrease by 50 percent when VMT is expected to increase.

The text in this section has been revised. More detailed information can be found in the technical report, Redesignation Demonstration for the Missoula, Montana, Carbon Monoxide Nonattainment Area.

28. Section 2.5.2.2 The plan should clearly state that the growth of industrial sources is not limited by the growth estimate listed in the emission projections.

This comment has been incorporated into the revised document, both as a footnote in Section 2.5.2.2 and in the text of Section 2.6.

29. Section 2.5.6 Additional information is needed on budget development and safety margins. Are the 2010 and 2020 vehicle emissions and total emissions realistic?

The document describes how the Department arrived at the budgets and safety margins. More detailed information regarding the projections can be found in the technical report, Redesignation Demonstration for the Missoula, Montana, Carbon Monoxide Nonattainment Area. *No changes were incorporated into the document as a result of this comment.*

Will Snodgrass, Missoula resident

1. Redesignation should be delayed because the model used by the Health Department was terribly flawed. He presented a chart that showed the catalytic converter drop-off rates for a single vehicle.

The Department of Environmental Quality used the EPA-approved model to calculate fleet emission factors for both the Emission Inventory and the modeling demonstration of attainment at the Brooks/South/Russell intersection. The modeling incorporates the latest planning assumptions and best information available at this time. Inevitably, newer, more accurate models will be developed in the future. Missoula will be required to use the latest models and the latest planning assumptions when it updates its maintenance plan eight years after EPA redesignates Missoula. No changes were incorporated into the document as a result of this comment.

2. The technical documents have not been made available, so it is illegal to proceed with redesignation.

The technical documents were made available at the same time as the public comment document, and that fact was advertised in the legal ad published twice in the Missoulian *and in the notice to interested parties. They are available on the website: www.co.missoula.mt.us/EnvHealth/AirQ/CO%20Redesignation/redesignationindex.html and at the Health Department upon request. No changes were incorporated into the document as a result of this comment.*

3. The transportation plan was illegally drawn up.

This comment does not refer to the redesignation request. The public can contact the Office of Planning and Grants, the Montana Department of Transportation or the Federal Highways Administration with questions about Missoula's transportation planning process. No changes were incorporated into the document as a result of this comment.

4. The last saturation CO measurements around town were taken in 1992. There has been no testing on Reserve Street. Data from Reserve Street needs to be in the model.

The Department does not agree that CO sampling needs to be completed at this time on Reserve Street. Section 1.4 in the revised redesignation request explains the Department's position. (See answer for comment #2, ***Tony Tweedale****, for a more detailed discussion). If measured mobile source parameters (e.g., VMT, congestion, fleet mix, etc.) change significantly over time, the Health Department will perform the appropriate studies (like bag sampling) to determine whether additional and/or re-sited monitors are necessary.*

5. The President's Interagency Assessment of Oxygenated Fuels states that oxygenated fuels do not reduce CO in the winter.

The 1997 Interagency Assessment summarizes studies that were performed to measure the effects of oxygenated fuels on the ambient air. Four studies found reductions that generally fell within the range of 5 to 10%. Five others were not

able to detect a statistically significant reduction. However, the report states that those studies that did find a statistically significant reduction were the most quantitative and accounted for the effects of trends and meteorology, while it is not clear whether the other five studies would have been capable of detecting a 5 to 10% reduction in CO because of the methodology chosen.[5]

Since the introduction of oxygenated fuels, Missoula has not exceeded 9 ppm CO averaged over 8 hours. In the early 1990's, the Health Department estimated that oxygenated fuels reduced ambient CO concentrations by 17- 20%. Modeling completed for the Brooks/South/Russell intersection project in 1996 estimated that oxygenated fuels reduced CO concentrations by about 13%. For this redesignation request, DEQ also modeled the effects of oxygenated fuels on CO levels at the Brooks/South/Russell intersection. In 2000, oxygenated fuels were predicted to reduce CO concentrations by about 14%. In 2005, the average reduction was predicted to be about 11%. By 2015, however, the predicted reduction in CO concentrations from oxygenated fuels was only about 6%.

No changes were incorporated into the document as a result of this comment.

6. Showed a picture illustrating Missoula's continued bad air.
   Carbon monoxide is a colorless gas and would not show up in a photograph. No changes were incorporated into the document as a result of this comment.

Tony Tweedale, Missoula resident

1. Why is Smurfit-Stone Container not included in the Emission Inventory and subject to State Implementation Plan (SIP) controls, the way it is in the PM_{10} non-attainment SIP?
   Following the guidance supplied by the EPA, DEQ included only those sources that emitted CO within the emission inventory area. Because Missoula is considered a moderate CO non-attainment area, area wide dispersion modeling, which may have included sources outside the non-attainment area, is not required for redesignation.

   This is appropriate when you consider that CO violations are localized and are caused by sources in the immediate area, whereas particulate violations can occur over a large area and can be attributed to many different far flung sources. High CO concentrations are primarily caused by vehicular traffic and CO concentrations decrease rapidly as you move away from the Brook/South/Russell intersection. As CO mixes with the air away from the intersection, CO concentrations are quickly diluted to lower levels. On the other hand, high particulate concentrations tend to cover a relatively large area and the high concentrations can be caused by a variety of point and area sources.

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[5] Carelton Howard, Armistead Russell, Roger Atkinson and Jack Calvert, 1997, "Air Quality Effects of the Winter Oxyfuel Program" in *Interagency Assessment of Oxygenated Fuels*, Committee on Environment and Natural Resources, National Science and Technology Council, Executive Office of the President, Washington, D.C., 20500, pages 1-43 – 1-44.

Like all major stationary sources (even those within the non-attainment area), Smurfit-Stone is regulated by DEQ and provisions in the Montana SIP. However, the mill (like those state-regulated industries within the non-attainment area) is still subject to some local SIP controls. Most notably, the mill must follow the Emergency Episode Avoidance Plan in the Missoula City-County Air Pollution Control Program. And, by virtue of the fact that the mill is within the oxygenated fuels area, most on-road vehicles used by the mill and its employees would contain oxygenated fuels (depending on where they buy their gas.)

No changes were incorporated into the document as a result of this comment.

2. The Health Department has not proven Missoula is attaining the standard. It should monitor CO levels at Reserve and Mullan before proceeding with redesignation. Collecting and analyzing bag samples should be easy and cheap. While vehicle density may not be greater at Reserve and Mullan, the number of vehicles and the time they spend not moving is certainly far greater, though it is spread out over a greater distance.

Since 1992, traffic has increased on Reserve Street, a north-south arterial, because of road widening and commercial development. Several intersections along this arterial are congested, including Highway 93 and Reserve; South and Reserve; and Mullan and Reserve. In 2002/2003 these intersections had a similar amount of traffic to the Brooks/South/Russell intersection, as shown in Table 1-1 below.[6]

Table 1-1 Daily Average Number of Vehicles Traveling through Various Missoula Intersections (Using 2002 and 2003 traffic count data)

Intersection	*Average Daily Traffic (ADT)*	*Percentage of B/S/R ADT*
Brooks, South and Russell (B/S/R)	*49,330*	*100*
Reserve and Mullan	*52,560*	*106.6*
Reserve and South Third West	*45,090*	*91.4*
Reserve and South Avenue	*50,110*	*101.6*
Reserve and US Highway 93	*47,615*	*96.5*

All these intersections are very similar in terms of traffic loads. Reserve/Mullan and Reserve/South carry 6.6% and 1.6% more ADT, respectively, when compared to Brooks/South/Russell, while Reserve/South Third and Reserve/Highway 93 carry 8.6% and 3.5% less traffic, respectively, than Brooks/South/Russell. However, the Reserve Street intersections are "normal" four-way intersections, with larger right-of-ways and road widths than Brooks/South/Russell. Therefore, idling cars are spread farther apart over longer distances. As a result, less CO accumulates in the immediate vicinity of the Reserve Street intersections than at Brooks/South/Russell, where three major streets come together causing a larger number of idling cars to be in closer proximity to each other.

[6] Mike Kress, Transportation Planner at the Office of Planning and Grants, December 29, 2004, personal communication with Shannon Therriault.

Another factor to consider is background concentration of CO. The Department compared the total 2000 CO emissions for a typical winter weekday (a CO season day) for the four emission inventory grids surrounding each intersection.[7] *These emissions were from on-road vehicles, wood stoves, industry, railroads, non-road motors and natural gas combustion. Table 1-2 shows that the Brooks/South/ Russell intersection is surrounded by grids with higher CO emissions than any of the Reserve Street intersections.*

Table 1-2 Total Daily Carbon Monoxide Emissions from the Four Emission Inventory Grids Closest to Various Missoula Intersections

Intersection	*Total Daily CO Emissions from Surrounding Grids (kg CO/ CO Day)*	*Percentage of B/S/R Total Daily CO Emissions*	*2000 CO Emission Inventory Grid Numbers*
Brooks, South and Russell (B/S/R)	*13,227*	*100*	*100, 101, 113, 114*
Reserve and Mullan	*5339*	*40*	*60, 61, 73, 74*
Reserve and South Third West	*6740*	*51*	*86, 87, 99, 100*
Reserve and South Avenue	*8187*	*62*	*99, 100, 112, 113*
Reserve and US Highway 93	*8411*	*64*	*112, 113, 125, 126*

The grids closest to the Mullan and Reserve intersection (the intersection with the highest traffic) have only 40% of the emissions produced in the grids surrounding the Brooks/South/Russell intersection. As a result of the unique geometry of the Brooks/South/Russell intersection, combined with the fact that area emissions are 36-60% lower at the other intersection, it is reasonable to assume that Brooks/South/Russell intersection is still the area with the greatest CO concentrations.

In addition, the levels of CO at the Malfunction Junction monitor are well below the federal standard of not more than one reading over 9 ppm, averaged over 8 hours. Based on data from the last five years, the highest second maximum CO reading at the monitor was 3.9 ppm, which is 57% below the federal standard. The Department computed the highest second maximum concentration at the modeled worst receptor at Brooks/South/Russell at 7.9 ppm, which is 12% below the standard. With these margins of safety, even looking at the worst-case scenario, there is no reason to believe that CO concentrations at any of these other intersections are not also below the standard. This information was incorporated into revised document.

[7] Cain, Cyra. July 2004, *2000 Missoula, Montana, Carbon Monoxide Emission Inventory*, Department of Environmental Quality Permitting and Compliance Division, Air Resources Management Bureau, Analytical Services Section. Helena, MT 59620, Appendix A.

3. The Contingency Plan in the proposed maintenance plan is not adequate.

The Department used the template supplied by Tim Russ of the EPA to draft the contingency plan, which he has reviewed. The only comment he supplied regarding the adequacy of the plan was incorporated into the revised draft (See ***United States Environmental Protection Agency,*** *comment #2). The contingency plan goes into effect if Missoula violates the National Ambient Air Quality Standards for carbon monoxide. Two rules, currently in the Missoula air program and SIP, are included in the contingency plan: (1) expanding the oxygenated fuel program to other months besides November, December, January and February and (2) further restricting residential wood burning. However if a CO violation occurs, these contingency measures, depending on the cause of the violation, may not adequately address it. Therefore, the contingency plan also establishes a process to identify and evaluate other possible measures to control CO levels. In order to address Mr. Tweedale's concern, the text in Section 2.5.5.3 was revised to indicate that the Board may take action even before a single CO reading above 9 ppm averaged over 8 hours is recorded.*

4. (From December 16, 2004) Archie McMillan reported in the Missoulian last Sunday that he routinely found 15 ppm CO in the downtown area, and he has a reasonable quality CO detector, so you are morally obliged to measure CO at hot spots around town before proceeding with redesignation.

Archie McMillan almost certainly recorded an instantaneous CO reading, which is not the same as an 8-hour average. CO spikes are common (usually caused by a high-emitting, older car), even at the Malfunction Junction monitoring site, but these even out when averaged over time. Remember that the 1-hour average is 35 ppm, and Mr. McMillan didn't report anything close to that in his article. At the Malfunction Junction monitoring site, these spikes almost entirely disappear when the oxygenated fuel season starts (another indication that oxygenated fuels are working.)

In addition, ambient CO monitoring has specific siting criteria that must be met. If sampling is done too close to the road or not at the right height, higher levels may be recorded. However, EPA would not consider it an exceedance of the federal standard, so it would not affect whether Missoula can be redesignated.

The Health Department sampled CO concentrations in Downtown Missoula in 1992, and the levels were lower than those at Brooks/South/Russell. The traffic has not increased disproportionately downtown in the intervening years. CO levels have been decreasing since 1992, a trend that would translate to downtown levels as well.

No changes were incorporated into the document as a result of this comment.

United States Environmental Protection Agency (EPA) – Tim Russ

1. Update conformity rule language and citations in Section 2.5.6

This comment has been incorporated into the revised document.

2. Replace “failed to attain” with “violated” in Section 2.5.5.4

This comment has been incorporated into the revised document.

Eric Visocan, University of Montana student

Not clear on how reconstructing Malfunction Junction is going to aid in the reduction of carbon monoxide levels in the Missoula valley.

The project at the junction will help reduce CO levels in two ways. First, it will reduce emissions at and near the intersection, which is what caused violations of the federal air quality standards there in the past. The current configuration puts a lot of idling cars in a small area (as opposed to cars being strung out a long way down a road, like what happens at Reserve and Mullan.) The new configuration will considerably reduce the number of cars waiting, and there will be no cars waiting at all on South Avenue. As a result, there will be less CO emitted at the intersection. In turn, less CO will concentrate there under inversion conditions, when the pollutant is not effectively dispersed.

Secondly, the project will reduce transportation-related emissions along the entire Brooks corridor. Currently, the signals along Brooks Street have the capacity to be synchronized, but because of the intersection’s long signal time (the overall time it takes for each road leg to get a green light once, the timing doesn’t work to synchronize this light with the others along the corridor. Once the intersection is reconfigured to a “normal” four-way intersection, the signal time is reduced enough for synchronization to work. As a result, fewer cars will have to come to a complete stop and that will reduce CO emissions. Cars emit more CO when they are changing speeds, especially during acceleration from a complete stop. No changes were incorporated into the document as a result of this comment.

Women’s Voices for the Earth, Alex Gorman, Director of Science and Research

1. Overall, the plan is thorough and informative. They support the decision to submit the redesignation request to EPA.

No changes were incorporated into the document as a result of this comment.

2. Concerned that EPA’s projections of CO reductions from the future fleet (as incorporated into the model DEQ used) may be optimistic, but believes the Health Department has used the projections correctly.

The EPA projections represent the best information that is currently available. However, to ensure that Missoula continues to meet the standard into the future, several safety mechanisms are in place, including the continued use of oxygenated fuels, the realignment of the Brooks/South/Russell intersection, the conformity requirements for the transportation sector, continued monitoring and the contingency plan found in the maintenance plan.

3. Concerned about the lack of mention of other potential problem locations in Missoula, like the intersections of Brooks/Reserve and Mullan/Reserve. The locations should be acknowledged and mention made that they may be looked at again for possible monitoring in the future.

*The Department revised Section 1.4 to include a discussion of other congested intersections in the Missoula non-attainment area (See answer for comment #2, **Tony Tweedale**, for a more detailed discussion). In addition, Section 2.5.3 states that if measured mobile source parameters (e.g., VMT, congestion, fleet mix, etc.) change significantly over time, the Health Department will perform the appropriate studies (like bag sampling) to determine whether additional and/or re-sited monitors are necessary.*

4. The CO Emission Inventory indicates that industrial sources play a very minor role in CO in Missoula. But it should be noted that one significant industrial source of CO in the airshed is located just outside of the boundaries of the CO designation area. Smurfit-Stone Container emits approximately 3,600 tons of CO per year or 10 tons per day. If it were in the CO non-attainment area, industrial emissions would replace woodstoves as the number 2 source. However, it would still be lower than on-road emissions (at 45 tons per day). There is no need to change the plan to reflect this information.

No changes were incorporated into the document as a result of this comment.

Julie Zachariasen, Missoula resident

Would like the Air Board to accept the maintenance plan.

No changes were incorporated into the document as a result of this comment.