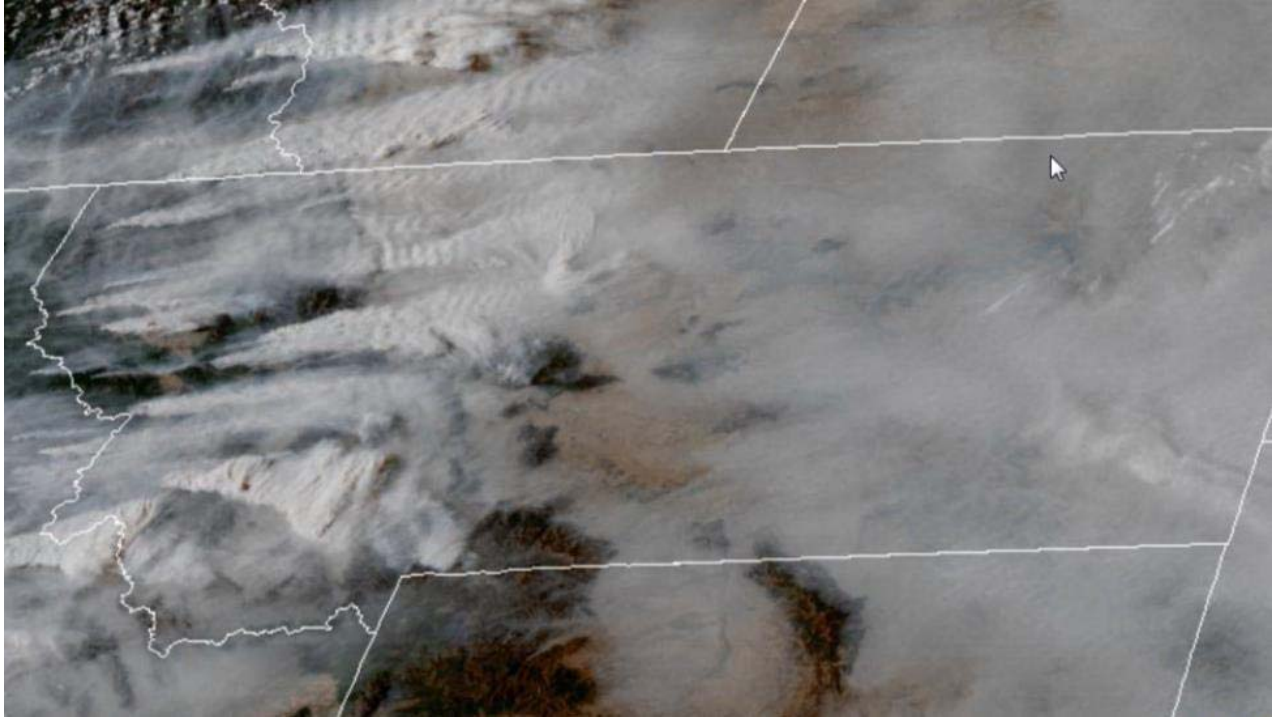


State of Montana Mitigation Plan for Wildfire Exceptional Events



[Source: CIRA and NOAA. These data are preliminary and not operational.](#)

Public Comment Draft
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Prepared by:
Montana DEQ



Table of Contents

| | | |
|-------|--|----|
| 1 | Background | 1 |
| 2 | Public Notification and Education Programs | 2 |
| 2.1 | Today’s Air..... | 2 |
| 2.2 | Wildfire Seasonal Activities..... | 6 |
| 2.3 | Coordination with National Weather Service | 6 |
| 2.4 | Social Media | 6 |
| 2.5 | Outdoor Wildfire Activity Guide | 6 |
| 2.6 | Educational Video | 9 |
| 2.7 | Additional Monitoring..... | 9 |
| 3 | Steps to Identify, Study, and Implement Mitigating Measures | 10 |
| 3.1 | Measures to Abate or Minimize Contributing Controllable Sources of Identified Pollutants.... | 10 |
| 3.1.1 | Historical Data..... | 10 |
| 3.1.2 | Other Source Contribution..... | 13 |
| 3.1.3 | Smoke Management Plan | 14 |
| 3.1.4 | Conclusion..... | 16 |
| 3.2 | Minimize Public Exposure | 16 |
| 3.3 | Processes to Collect and Maintain Data | 17 |
| 3.4 | Consulting with other Air Quality Managers | 18 |
| 4 | Review and Evaluation of Mitigation Plan | 18 |
| 5 | Public Comment..... | 18 |

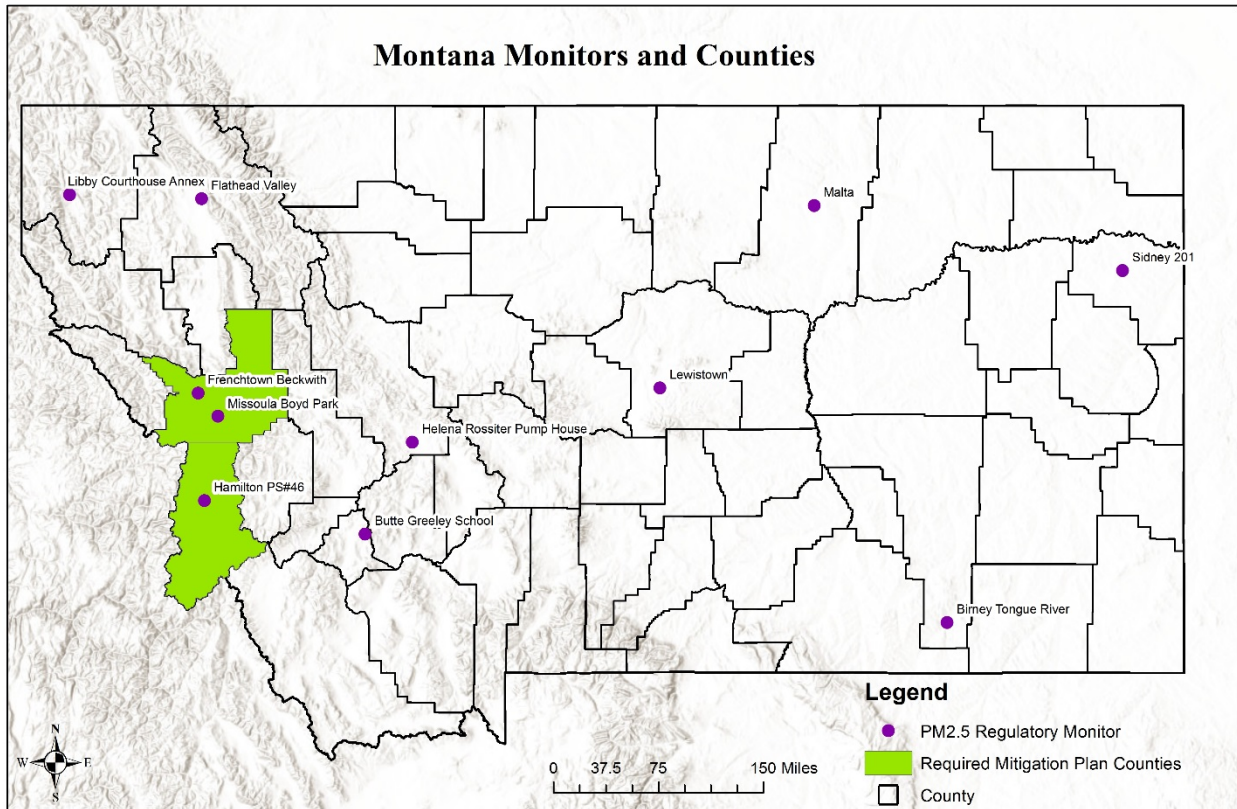
1 Background

Effective September 16, 2016, (81 FR 68216) EPA revised the Exceptional Events Rule that was originally promulgated in March 2007. These revisions, referred to as “Treatment of Data Influenced by Exceptional Events”, govern the exclusion of event-influenced air quality data from certain regulatory decisions under the Clean Air Act (CAA) Section 319(b). Mitigation of exception events is regulated by 40 CFR 51.930 and the development of mitigation plans for areas with historically documented or known seasonal events is required by §51.930(b). As part of this revision, mitigation plans are required, at a minimum, to provide:

- Public notification to and education programs for affected or potentially affected communities. Such notification and education programs shall apply whenever air quality concentrations exceed or are expected to exceed a National Ambient Air Quality Standard (NAAQS) with an averaging time that is less than or equal to 24-hours.
- Steps to identify, study and implement mitigating measures, including approaches to address each of the following:
 - o (a) Measures to abate or minimize contributing controllable sources of identified pollutants.
 - o (b) Methods to minimize public exposure to high concentrations of identified pollutants.
 - o (c) Processes to collect and maintain data pertinent to the event.
 - o (d) Mechanisms to consult with other air quality managers in the affected area regarding the appropriate responses to abate and minimize impacts.
- Provisions for periodic review and evaluation of the mitigation plan and its implementation and effectiveness by the State and all interested stakeholders.
- Documentation that a draft version of the mitigation plan was available for public comment for a minimum of 30 days and submission of the public comment and response to public comment with the mitigation plan to EPA.

A mitigation plan is required for any area with three reoccurring events in three years. Missoula and Ravalli counties were noted in the final exceptional events rule (81 FR 68272) as being subject to mitigation requirements for particulate matter of 2.5 microns (PM_{2.5}) or less due to wildfire events. On January 31, 2017, during a call between EPA Region 8 and the Montana Department of Environmental Quality (DEQ), EPA indicated that DEQ could develop a mitigation plan for the entire state of Montana, given the likelihood of other areas falling under the requirements in future years.

This document serves as the wildfire mitigation plan for Missoula and Ravalli Counties as required by rule, and for all other areas of Montana should they become subject to mitigation requirements for wildfire events in future years.



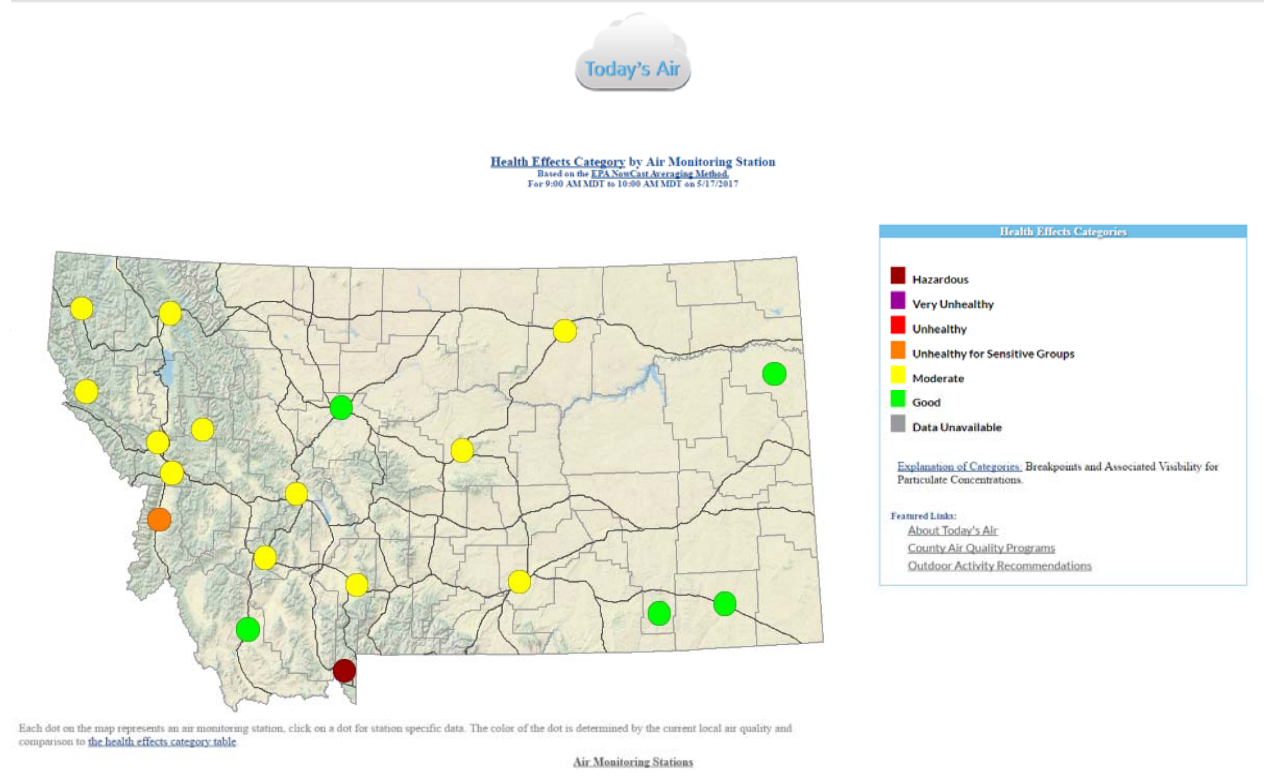
2 Public Notification and Education Programs

As required in §51.930(b)(2)(i), state agencies and/or local agencies (agency) shall provide the public with regular updates when wildfire smoke is impacting the state. The following section outlines the numerous ways the public is notified of potential health impacts from wildfire smoke. DEQ also strives to educate the public about what actions should be taken when wildfire smoke impacts their community. Recommendations for outdoor activity, educational videos and information outreach are also included in this section.

2.1 Today's Air

Twenty-four hours a day, seven days a week, the public has access to recent hourly average concentrations of PM_{2.5} on the TodaysAir.mt.gov website. This website displays hourly average concentrations at numerous monitoring sites across the state. Concentrations are color-coded by health effect category. This color coding is based on EPA's NowCast averaging method. In Montana, PM_{2.5} is the primary pollutant of concern, with concentrations of other pollutants, such as ozone, generally at background levels. For this reason, Today's Air only shows PM_{2.5} NowCast concentrations. Hourly concentrations are also automatically uploaded to the AirNow website (www.airnow.gov).

The graphic below shows the main Today's Air page.



Air Monitoring Data

Hamilton Station

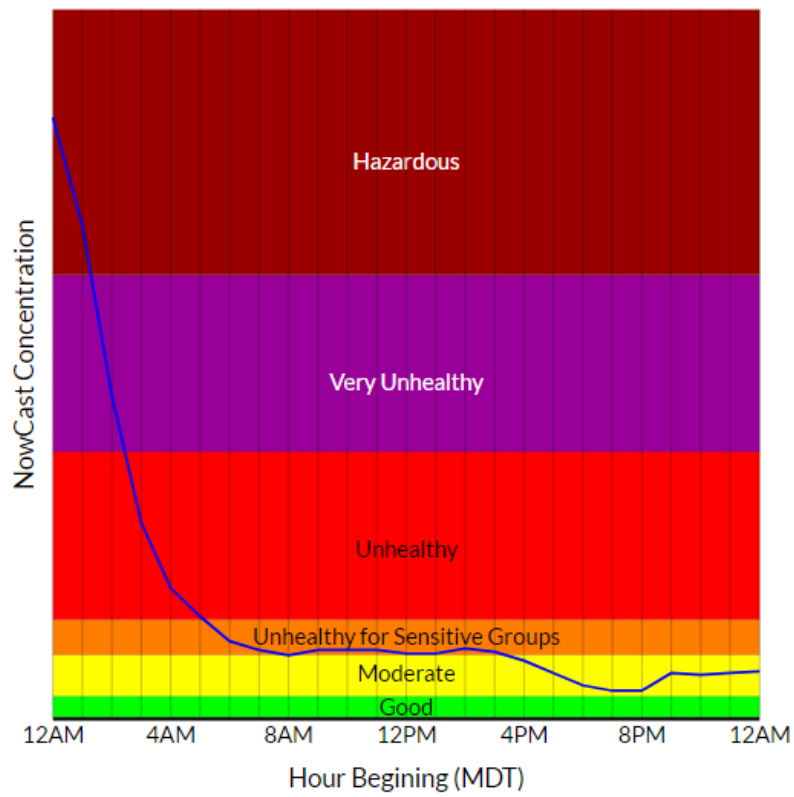
[Previous Day 8/2/2016](#) [Next Day](#)

[View Data For A Specific Date](#)



[Back to Air Monitoring Stations](#)

NowCast Concentration Characterized by 24-Hour Health Effect Category



Comparison to NAAQS

24-hr Avg.
60.6 $\mu\text{g}/\text{m}^3$

NAAQS
35 $\mu\text{g}/\text{m}^3$

Informational only - [click here](#)

Hourly Data Table Interpretation

Health Effects Categories are based on 24-hour average particulate levels, adjusted to a time-weighted NowCast to provide a real time assessment of current air quality. More Information about the NowCast method can be found [here](#).

Hourly Data
Previous Day 8/2/2016 Next Day

| Hour | 1-Hour Avg | NowCast Concentration |
|-------------|------------|-----------------------|
| 0:00-1:00 | 511.7 | ■ 339.2 |
| 1:00-2:00 | 216.8 | ■ 278.0 |
| 2:00-3:00 | 86.5 | ■ 182.2 |
| 3:00-4:00 | 38.9 | ■ 110.5 |
| 4:00-5:00 | 34.7 | ■ 72.6 |
| 5:00-6:00 | 41.1 | ■ 56.8 |
| 6:00-7:00 | 28.9 | ■ 42.8 |
| 7:00-8:00 | 33.2 | ■ 38.0 |
| 8:00-9:00 | 32.7 | ■ 35.3 |
| 9:00-10:00 | 39.9 | ■ 37.6 |
| 10:00-11:00 | 37.4 | ■ 37.5 |
| 11:00-12:00 | 39.1 | ■ 38.2 |
| 12:00-13:00 | 34.5 | ■ 36.3 |
| 13:00-14:00 | 35.7 | ■ 35.9 |
| 14:00-15:00 | 44.2 | ■ 38.9 |
| 15:00-16:00 | 33.8 | ■ 37.1 |
| 16:00-17:00 | 25.0 | ■ 31.8 |
| 17:00-18:00 | 18.6 | ■ 24.7 |

During wildfire season, the Today's Air website also has links to daily wildfire smoke forecasts, outdoor activity recommendations, and fire information. These aspects are discussed in subsequent sections.

2.2 Wildfire Seasonal Activities

During wildfire season, the agency issues wildfire smoke forecasts, which are disseminated across a variety of platforms. These forecasts include a summary of current air quality across the state, a review of current fires and anticipated future smoke impacts. These updates are posted on the state of Montana website, accessible through the Today's Air site, posted to social media, and distributed to interested parties via email. The interested parties list is open to anyone wanting to receive this information and commonly includes city and county environmental health officials, federal land managers, local news stations and newspapers, school nurses, athletic coaches, and members of the public.

Wildfire smoke forecasts are issued when needed during the wildfire season. During severe wildfire events, air quality alerts will be issued through coordination with the National Weather Service, as discussed in greater detail in Section 2.3. An example of the wildfire smoke forecast is available in Appendix A.

Missoula County also provides wildfire smoke information and forecasts for residents of Missoula County. An example of this is provided in Appendix F.

2.3 Coordination with National Weather Service

At times during severe air quality events, the agency issues Air Quality Alerts in coordination with the National Weather Service. The state of Montana initiates the alert process across the entire state. The Great Falls National Weather Service office then disseminates the alert to all affected offices automatically. An example of an alert is shown in Appendix B.

2.4 Social Media

The agency provides regular updates on social media during wildfire season. These updates alert the public to Air Quality Alerts that are in place around the state, as well as links to recent wildfire smoke updates. Examples of social media alerts are shown in Appendix C.

2.5 Outdoor Wildfire Activity Guide

The state of Montana receives numerous calls from concerned parents, school nurses, and coaches when wildfire impacts are significant across Montana. To address these concerns, the DEQ and the Department of Public Health & Human Services (DPHHS) worked together to create recommendations for outdoor activities based on air quality for schools and child care facilities. This 2-page document recommends what type of activity is and is not appropriate for different health effect categories. This document was distributed to all schools through the Montana Office of Public Instruction, through the Montana Coaches Association, and in coordination with state and local health departments.

The figure below shows the outdoor activity guideline distributed for the 2017 wildfire season.

Figure 1. Recommendations for Outdoor Activities Based on Air Quality for Schools and Child Care Facilities.

| Recommendations for Outdoor Activities Based on Air Quality for Schools and Child Care Facilities | | | | | |
|--|----------------|---|---|--|---|
| Health Effect Category | Good | Moderate | Unhealthy for sensitive groups* | Unhealthy | Very Unhealthy/ Hazardous |
| Visibility (miles) | 13+ | 9-13 | 5-9 | 2-5 | Less than 2 |
| NowCast Concentration (µg/m ³) | ≤ 12 | 12 - 35 | 35 - 55 | 55 - 150 | 150 + |
| Recess or Other Outdoor Activity (15 minutes) | No limitations | No limitations | Make indoor space available for all children to be active, especially young children. If outdoors, limit vigorous activities and people with chronic conditions should be medically managing their condition. | Keep all children indoors. | Keep all children indoors. |
| Physical Education Class (1 hour) | No limitations | Monitor sensitive groups and limit their vigorous activities. | Make indoor space available for all children to be active, especially young children. If outdoors, limit vigorous activities and people with chronic conditions should be medically managing their condition. | Conduct P.E. indoors. If outdoors, only allow light activities for all participants. People with chronic conditions should be medically managing their condition. | Conduct P.E. in a safe (good air quality) indoor environment. |
| Athletic Practice, Training (2-4 hours) | No limitations | Monitor sensitive groups and limit their vigorous activities. | People with chronic conditions should be medically managing their condition. Increase rest periods and substitutions for all participants to lower breathing rates. | Conduct practice and trainings indoors. If outdoors, allow only light activities for all participants. Add rest breaks or substitutions to lower breathing rates. People with chronic conditions should be medically managing their condition. | Conduct practice and trainings in a safe (good air quality) indoor environment. |
| Scheduled Sporting Events (2-4 hours) | No limitations | Monitor sensitive groups and limit their vigorous activities. | People with chronic conditions should be medically managing their condition. Increase rest periods and substitutions for all participants to lower breathing rates. | Consider rescheduling or relocating event. If outdoor event is held, have emergency medical support immediately available. Add rest breaks or substitutions to lower breathing rates. People with chronic conditions should be medically managing their condition. | Reschedule or relocate event. |
| Examples of light activities: Walking slowly on level ground Carrying school books Hanging out with friends | | | Examples of moderate activities: Skateboarding Slow pitch softball Shooting basketballs | Examples of vigorous activities: Running, jogging Playing football, soccer, and basketball | Please note that the intensity of an activity can vary by person and ability |

See the back of this document for suggestions on how to use particulate concentration measurements and visibility guidelines to make a decision about poor outdoor air quality and your event. Visit www.todaysair.mt.gov for more information.

* For the purpose of this document, sensitive groups include:

- Young children (ages 0-5 years). Young children may be more sensitive to air pollution as their lungs are still developing and they may have an unknown underlying health condition.
- People who have a chronic condition, such as asthma or another respiratory disease, or cardiovascular disease. People with these conditions may be more sensitive to air pollution and should talk with their primary healthcare provider about managing their condition.







How To Use This Table And The Today's Air Website

- Start early. Well before your event, start monitoring the air quality by visiting the www.todaysair.mt.gov website.
 - Review the forecast on the today's air website: <http://svc.mt.gov/deg/todaysair/smokereport/mostRecentUpdate.aspx>.
 - Review the NowCast concentration measurements for your area. If your area is not near an air monitor, follow directions below for using the visibility guidelines.
 - Make adjustments to your plans depending on the forecast and the health effect category.
- Continue to monitor the air quality and the forecast in your area.
 - Make adjustments to your plans depending on the forecast and the health effect category.
 - Be sure to leave adequate time for decisions to be made before teams/participants begin travel.
 - Air quality can change rapidly. Regularly review the concentration levels before and throughout lengthy events to assess for deteriorating conditions.
 - If air quality readings are in the Unhealthy or Very Unhealthy/Hazardous levels follow those recommendations.

How to estimate air quality based on visibility:

1. Use pre-determined landmarks that were established on a clear day for distances.
2. Face away from the sun.
3. Determine the limit of your visible range by looking for targets at known distances (miles).
4. Visible range is when an object you can easily see in the distance disappears.
5. Use the visibility values in the table to determine the local wildfire smoke category.

Items to Consider when Planning for Poor Air Quality during the School Year

- Is there an outdoor air quality section in the school's Emergency Plan? If so, do you know where it is located?
- How do you determine the air quality category in your area?
 - Which air quality monitor do you use or what geographic spot do you use for visibility guidelines?
- Who makes the recommendations to hold or cancel an outdoor event?
- How do you communicate what the decision was based on?
- How do you reschedule? Are there any rules about rescheduling?
- How do you get information out about your decision? If participants are already traveling, how do you notify them?
- What do you do with the students and parents that arrive to a postponed or canceled event? How do you make the announcement to them?
- What do you do for recess on school days?
- What are the plans if poor air quality affects the school/playground/track/swimming pool for a long period of time?
- How do you document what happened?
 - What went well? What can be done better?
 - What information did you need that you did not have or were not trained to do?

In addition to our outdoor activity guidelines, Montana also lists the EPA recommendations for each health effect category and the corresponding visibility and NowCast thresholds¹.

| Health Effects Categories | Visibility (miles) ¹ | NowCast Concentration ² ($\mu\text{g}/\text{m}^3$) | Health Effect | Cautionary Statement |
|--------------------------------|---------------------------------|---|--|--|
| Hazardous | Less Than 1.3 | Greater Than 250.4 | Serious aggravation of heart or lung disease and premature mortality in people with cardiopulmonary disease, older adults, and people of lower SES; serious risk of respiratory effects in general population. | Everyone should avoid all physical activity outdoors; people with heart or lung disease, older adults, children, and people of lower SES should remain indoors and keep activity levels low. |
| Very Unhealthy | 2.1 - 1.3 | 150.5 - 250.4 | Significant aggravation of heart or lung disease and premature mortality in people with cardiopulmonary disease, older adults, and people of lower SES; significant increase in respiratory effects in general population. | People with heart or lung disease, older adults, children, and people of lower SES should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy exertion. |
| Unhealthy | 5.0 - 2.2 | 55.5 - 150.4 | Increased aggravation of heart or lung disease and premature mortality in people with cardiopulmonary disease, older adults, and people of lower SES; increased respiratory effects in general population. | People with heart or lung disease, older adults, children, and people of lower SES should avoid prolonged or heavy exertion; everyone else should reduce prolonged or heavy exertion. |
| Unhealthy for Sensitive Groups | 8.7 - 5.1 | 35.5 - 55.4 | Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in people with cardiopulmonary disease, older adults, and people of lower SES. | People with heart or lung disease, older adults, children, and people of lower SES should reduce prolonged or heavy exertion. |
| Moderate | 13.3 - 8.8+ | 12.1 - 35.4 | Respiratory symptoms possible in unusually sensitive individuals, possible aggravation of heart or lung disease in people with cardiopulmonary disease and older adults. | Unusually sensitive people should consider reducing prolonged or heavy exertion. |
| Good | Less Than 13.4 + | 0.0 - 12.0 | None | None |

Note: SES stands for Socioeconomic Status

1. John Coefield, Cyra Cain, Montana Department of Environmental Quality empirical study (July 2000) presented at Fire, Smoke and Health Workshop, Seattle, WA, June 5 - 6, 2001.
 2. NowCast concentration breakpoints are based on EPA's 24-hour average breakpoints. More information can be found in the Technical Assistance Document for the Reporting of Daily Air Quality – the Air Quality Index (AQI); EPA-454/B-13-001; December 2013

2.6 Educational Video

The state of Montana also provides an educational video for explaining the information available on the Today's Air website. This video explains what the color-coded health effect categories mean, how to navigate the site, where to find individual station information, and the daily wildfire smoke update. The video also provides background on PM_{2.5} and the need for air quality standards. This video can be viewed here: <http://deq.mt.gov/Air/2017Air/todayairinfo>.

2.7 Additional Monitoring

During wildfire season, DEQ will deploy e-BAM monitors to track PM_{2.5} impacts on a case-by-case review of requests. Over the past seasons, we have deployed monitors near Glacier National Park, the Seeley-Swan Valley, White Sulphur Springs, and Clearwater, MT, among several other locations. These monitors were used to support the public in their effort to find cleaner air. Monitors deployed by DEQ show up on the Today's Air website with the data reported at the same frequency as our permanent monitors. In past years, DEQ has also coordinated with the U.S. Forest Service (USFS) to place additional monitors in vulnerable communities. DEQ will continue to incorporate future temporary USFS monitoring data into our wildfire public outreach.

¹ <http://deq.mt.gov/Air/SF/breakpointsrevised>

3 Steps to Identify, Study, and Implement Mitigating Measures

As required in §51.930(b)(2)(ii), DEQ is required to identify, study, and implement mitigating measures in the following ways:

- a) Measures to abate or minimize contributing controllable sources of identified pollutants.
- b) Methods to minimize public exposure to high concentrations of identified pollutants.
- c) Processes to collect and maintain data pertinent to the event.
- d) Mechanisms to consult with other air quality managers in the affected area regarding the appropriate responses to abate and minimize impacts.

3.1 Measures to Abate or Minimize Contributing Controllable Sources of Identified Pollutants

As required in §51.930(b)(2)(ii)(A), the agency has considered mandatory or voluntary measures to abate or minimize contributing controllable sources of identified pollutants that are within the jurisdiction of the agency.

Background concentrations of PM_{2.5} are very low at times when wildfire smoke is not impacting air quality. This section focuses on historical average concentrations when wildfires are not present, as well as the emission contribution of other sources.

3.1.1 Historical Data

Wildfire season in Montana is typically June through October, with the most significant impacts in July through September. During this 5-month period, daily average concentrations vary wildly depending on if wildfire impacts are present. Removing days flagged for wildfire impacts from the dataset, result in daily average concentration at Montana PM_{2.5} stations below 11 µg/m³(micrograms per cubic meter). Table 1 below shows the 2010-2016 wildfire season (June-October) daily averages across all days when wildfire impacts were not reported. Note that a day flagged with a wildfire impact coincides with a wildfire smoke update in which wildfire smoke was noted in or near the reporting station.

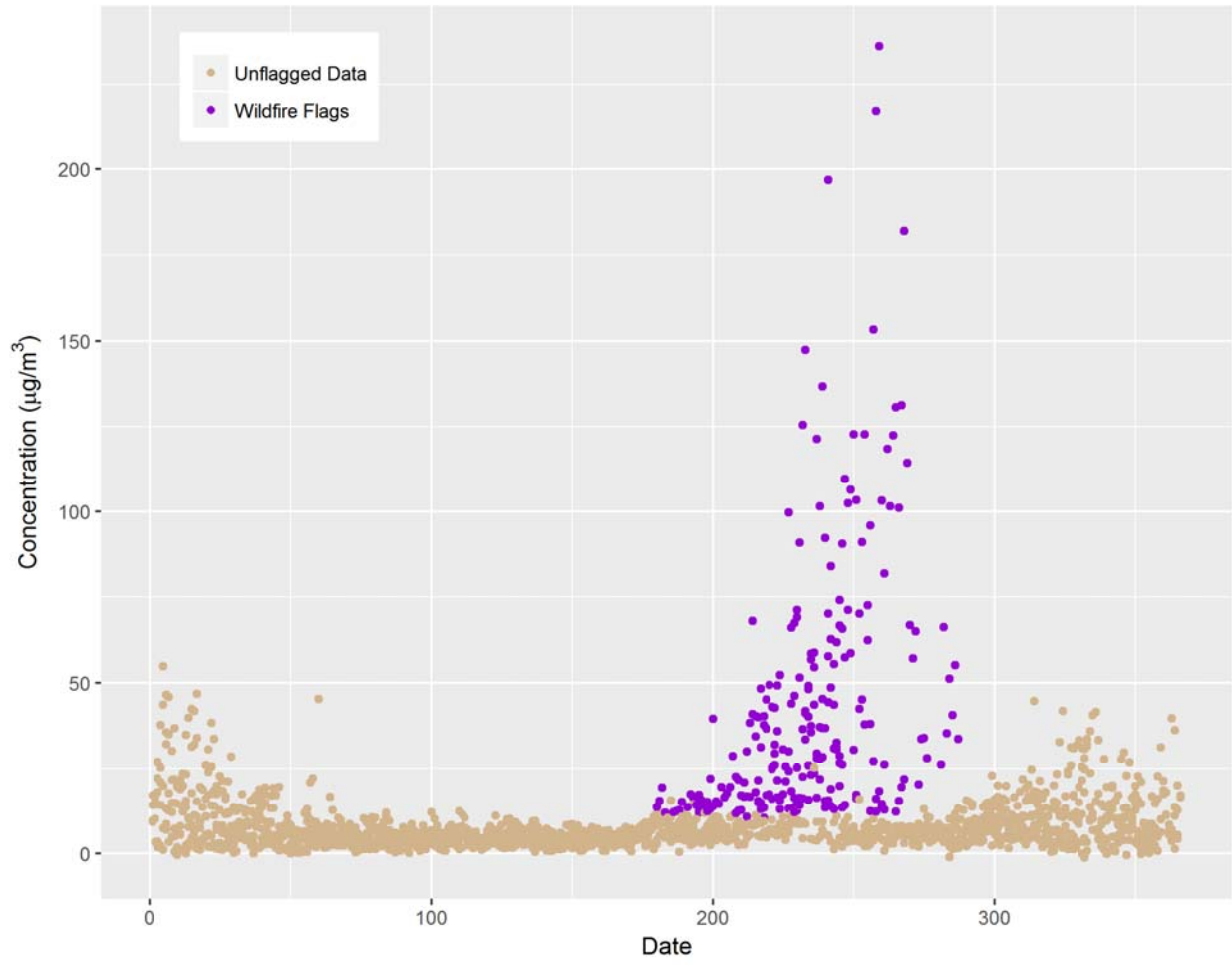
Table 1. Historical PM_{2.5} Averages During Wildfire Season When No Fires Are Present.

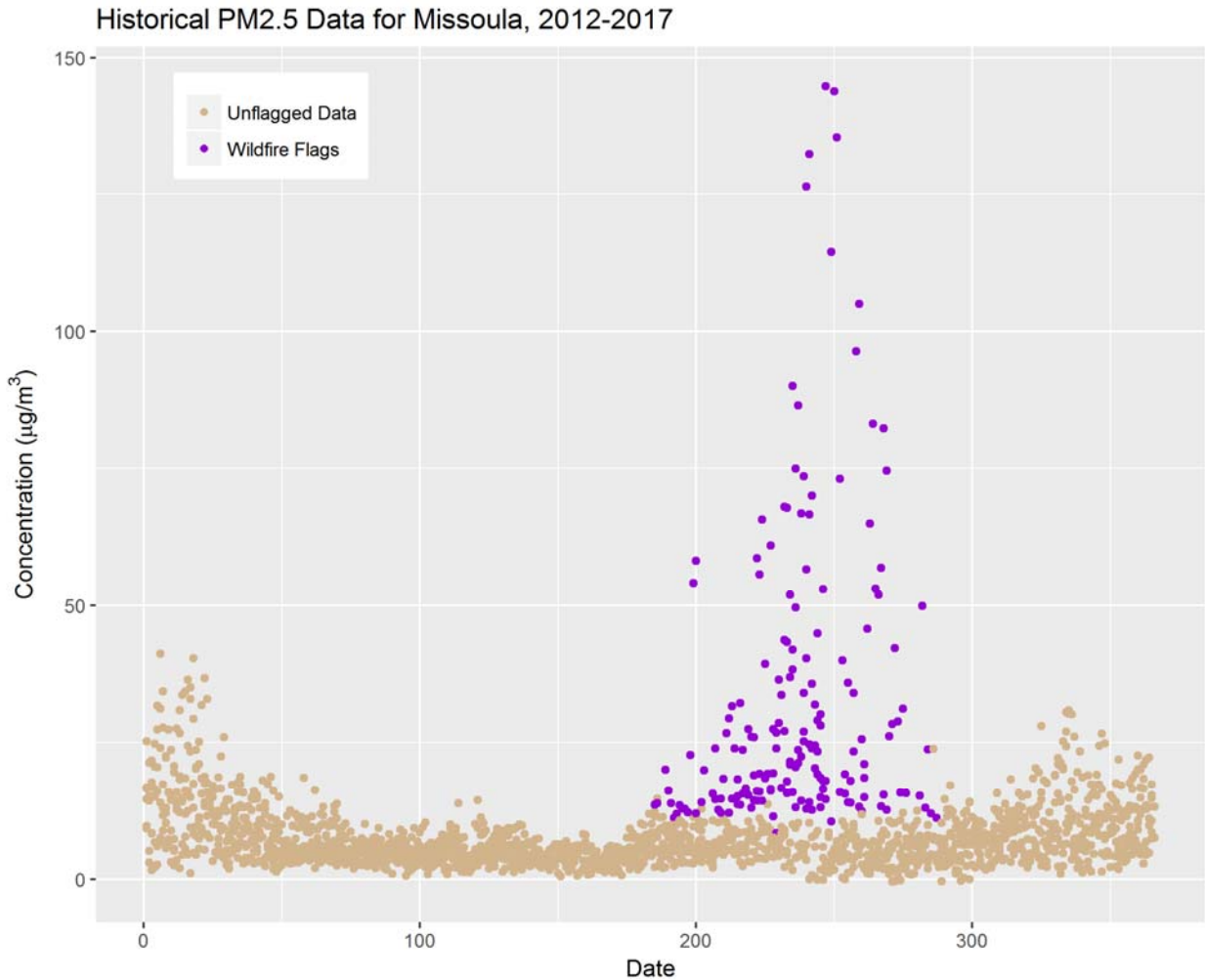
| Site Name/Location | 2010-2016 PM _{2.5} 24-hr Ave. Conc. (Jun-Oct) (no wildfires) |
|--------------------|---|
| Billings | 5.6 |
| Birney | 4.7 |
| Broadus | 5.5 |
| Butte | 8.5 |
| Columbia Falls | 7.5 |
| Frenchtown | 9.2 |
| Hamilton | 7.0 |
| Helena | 7.4 |
| Lewistown | 3.7 |
| Libby | 10.2 |
| Malta | 4.1 |

| Site Name/Location | 2010-2016 PM_{2.5} 24-hr Ave. Conc. (Jun-Oct) (no wildfires) |
|------------------------------|---|
| Missoula | 7.3 |
| Sieben Flats (NCORE station) | 3.4 |
| Sidney | 6.3 |

A closer look at the daily average concentration in Missoula and Hamilton over the past five years shows that the worst impacts are during the summer wildfire season, as shown in the figures below. While elevated concentrations occur in the winter months, winter concentrations do not rise to the levels recorded during the summer.

Historical PM2.5 Data for Hamilton, 2012-2017





The only other times of the year that daily average concentrations occasionally exceed air quality standards are during winter-time inversions, when multiple day long inversion events trap pollutants near the surface. Wildfire and winter inversion seasons do not overlap due to the meteorological conditions that drive each season. Therefore, winter inversion impacts are not discussed as part of this mitigation plan.

3.1.2 Other Source Contribution

As noted above, measured PM_{2.5} concentrations are low at times when wildfire smoke or winter inversions are not present. The low values shown in section 3.1.1 indicate that no other major contributors to PM_{2.5} concentrations influence summertime air quality. Montana's low population and small number of industrial sources allow PM_{2.5} concentrations to be very low at times of the year when wildfire smoke is not impacting the area (see Table 1). That being said, wood smoke is the primary source of PM_{2.5} in Montana. This comes in the form of wildfire smoke in the summer, prescribed burning, and wood stove smoke in the winter. Wood stove smoke gets trapped in western valleys under strong winter inversions. These inversions are caused by low solar radiation and cold temperatures.

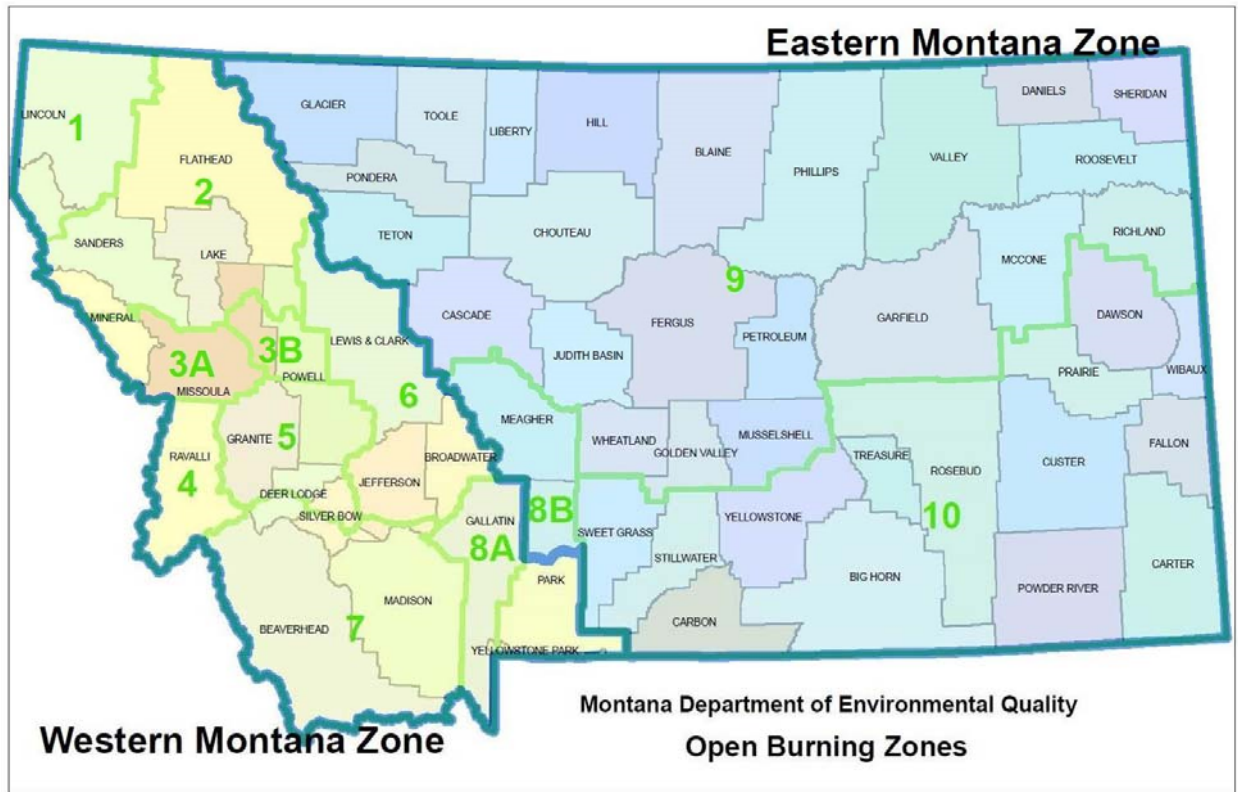
Because the winter inversion season and the wildfire smoke season do not overlap, wood stove smoke impacts will not be discussed in this mitigation plan. The prescribed burning season can overlap with the fire season. For that reason, rules and regulations outlining our open burning program are described below. In addition to our open burning program, the PM₁₀ State Implementation Plan for Montana; Missoula Air Pollution Control Program Regulations, outlined in Appendix F, has additional measures for limiting PM emissions throughout the year.

3.1.3 Smoke Management Plan

A potential source of PM_{2.5} that could overlap with wildfire season is from prescribed burning. Due to the potential to cause or contribute to a NAAQS exceedance, the state of Montana has a strict smoke management plan (SMP). This SMP comes in the form of our open burning rules and establishes the guidelines all burners must follow when conducting burns both large and small in Montana. Our open burning rules are divided by major and minor burners, seasons, and location. Each of these distinctions is described below.

Location

Burners in western Montana, where tall mountains and narrow valleys can trap smoke for prolonged periods of time, have more stringent rules than eastern Montana, where flat terrain and generally strong winds allow for better dispersion throughout the year. Montana is divided into two zones as shown below, to more appropriately regulate each side of the state based on its topography and meteorology. These location specific rules apply to all burners except major open burners (described below).



Season

Open burning in Montana is regulated by season to address the different seasonal dispersion characteristics. Three distinct burn seasons are defined with the open burn season from March 1 through August 31st, the fall burn season from September 1st through November 30th, and the winter burn season from December 1st through February 28th.

During open burning season, dispersion is generally good across Montana due to increased mixing heights with increased solar radiation. During this season, major and minor burners do not need direct approval from DEQ to burn. They must follow all aspects of Best Available Control Technology (BACT) for their burn and comply with local county fire restrictions. BACT requirements are listed in Appendix D. Many years open burning is conducted in the spring until fire danger makes burning unsafe.

During fall burn season, there can be periods of good dispersion and bad dispersion. DEQ sets restrictions by county depending on the ventilation forecasted. Restrictions for minor burners in the western burn zone are posted by county at 4pm for the following day on burnclosures.mt.gov and on the ventilation hotline (800-225-6779). Major burners in the eastern and western burn zones must have individual burns approved by DEQ and the Montana/Idaho Airshed group. Each burn is evaluated for anticipated smoke impacts, longevity of smoke, and impact to the community based on the type of burn, size of burn, and forecasted meteorology. All restrictions are posted at www.smokemu.org.

During winter burn season, all major burners and minor burners in the western burn zone must have day of approval from DEQ to burn. Minor burners shall submit proposed burn locations prior to the day

they wish to burn. On the day they wish to burn, all burners shall call DEQ in the morning to discuss the size and longevity of the burn. If the forecasted meteorology can support the burn, the burn is approved. Approved and restricted burns can be found on the burnclosures.mt.gov website. Burners in eastern Montana must alert DEQ of their intent to burn but do not need approval from the department.

Major Burner

Major burners are defined as those that emit more than 500 tons of carbon monoxide or 50 tons per year of any other criteria pollutant per year through open burning activities. As of 2017, the current major open burners in Montana are the Bureau of Land Management (BLM), the Montana Department of Natural Resources (DNRC), F.H. Stoltze Land and Lumber Company, the National Park Service (NPS), Pyramid Mountain Lumber, R-Y Timber, Sun Mountain Lumber, U.S. Fish and Wildlife Service (USFWS), USFS, Weyerhaeuser Company, and Stimson Lumber.

Due to the quantity of burning conducted by major burners, and the possibility for significant smoke impacts if burning is conducted on poor dispersion days, all major burners must submit all proposed burns between September 1 and February 28 for consideration to the DEQ. Burning is allowed only if the location, size of burn, type of burn, and meteorological conditions will amount to limited smoke impacts and a protection of public health and the environment. Burning can be restricted by elevation if mixing heights are not conducive to lower elevation burns.

Minor Burner

Minor burners are defined as anyone who does not meet the requirements of a major open burner. These typically include burning at residential homes and ranches. Air quality regulations for minor burners are dependent on the location of the burn and the season of the year the burn is being conducted. These rules are outlined in the sections above. For a summary of the minor burning rules in Montana, see Appendix D. In addition to the Montana state laws, Missoula County has its own smoke management program that has been approved by the Montana Board of Environmental Review. An overview of the Missoula County program is included in Appendix F.

3.1.4 Conclusion

Wood burning, during wildfire season (June – October), fall burning season (September – February), or wood stove season (November – March) is the main cause of PM_{2.5} in Montana, as shown by numerous chemical mass balance studies. The exceptional events in Montana caused by wildfires do not overlap with the winter inversion season, when wood stove impacts are impacting western valleys. Therefore, prescribed burning is the main competing source of PM_{2.5} that could increase PM_{2.5} concentrations during exceptional events. For this reason, open burning in Montana is regulated at the state and local level to prevent additional PM_{2.5} smoke impacts during wildfire season, and to protect NAAQS when wildfire activity subsides.

3.2 Minimize Public Exposure

As required in §51.930(b)(2)(ii)(B), the agency looked at ways to minimize public exposure to high concentrations of PM_{2.5}. Reducing public exposure to wildfire smoke impacts is done through education

and outreach. Since wildfire smoke cannot be avoided in many Montana communities in the summer, state and local agencies in coordination with federal agencies, local media, health professionals, and school officials aim to educate the public about mitigating steps that can be taken to reduce exposure. Many of these steps are outlined in the sections above, including regular wildfire smoke outlooks, distribution of outdoor activity guidelines, and coordination with local media, the National Weather Service, and the USFS to communicate potentially dangerous air quality situations.

In addition to the education and outreach, the state of Montana and the USFS work together to deploy temporary monitors to areas heavily impacted by wildfire smoke. When numerous fires in Montana cause hazardous air pollution in communities, additional monitors can be deployed to track the most significant impacts. These monitors can be used by schools, public health officials, and business to determine if activities should be cancelled, rescheduled or moved based on the air quality. For example, in 2017 DEQ deployed monitors around the Seeley-Swan Valley to assist residents impacted by the large Rice Ridge Fire in identifying areas of improved air quality.

Missoula County took an active role in minimizing public exposure to wildfire smoke during the 2017 wildfire season. The county encouraged residents, including those in the Seeley Lake area, to utilize a Red Cross shelter to escape the smoke, limit physical activity, and generate clean indoor air using HEPA filtration. Prior to the start of the 2018 wildfire season, Missoula County has been promoting preventive steps residents can take to minimize their exposure to wildfire smoke, including advice on creating a clean indoor air space and helping schools prepare for the next wildfire season. Materials distributed by Missoula County during the 2017 wildfire season are available in Appendix F.

3.3 Processes to Collect and Maintain Data

As required in §51.930(b)(2)(ii)(C), the agency maintains a process to collect and archive data pertinent to the exceptional event. Collecting and reviewing data is done by agency staff. The staff posts wildfire updates, as discussed above, that outline the location of fires, current meteorology, and how smoke is impacting the state. These outlooks also include a forecast for how smoke impacts may be changing in the future, satellite imagery showing smoke over the state, webcams showing smoke impacts at the ground level, and any other imagery that might be pertinent to the wildfire event. The agency staff reviews air quality monitoring data and compares it to the wildfire smoke outlooks. If the monitoring concentrations are elevated, and the smoke outlook notes the influence of wildfires in that area, the day will be flagged as a potential exceptional event.

After each wildfire season, agency staff and EPA determine if exceptional event demonstrations are necessary. If a demonstration is deemed appropriate, additional graphs are created showing a comparison to historical monitoring data when wildfires are not impacting the monitor. A completed demonstration is then subject to public comment before submission to EPA. In lieu of a demonstration, wildfire smoke outlooks are archived through the Today's Air website for future potential use.

3.4 Consulting with other Air Quality Managers

As required in §51.930(b)(2)(ii)(D), the agency has developed mechanisms to consult with other air quality managers in the affected area regarding the appropriate responses to abate and minimize impacts. During the wildfire season, there will be frequent communication with the DPHHS and DEQ to effectively communicate health impacts. The agency also works with federal, state, and local partners to educate and inform the public about how to protect themselves during times of wildfire smoke intrusion. Each year we evaluate how we can improve our communication and what can be done in subsequent years to help protect citizens and their health.

DEQ participates in the Montana-Idaho Interagency Smoke Management Coordination Strategy for the mitigation of public health and welfare impacts caused by smoke from wildfires. This strategy focuses on three main aspects; contact, documentation, and information. Through these three focus areas DEQ and fire management agencies work together to inform and mitigate smoke impacts to the public. The full mitigation plan is available in Appendix G.

The 2017 wildfire season is an example of implementing this coordinated effort. DEQ, the Missoula City-County Health Department, and the USFS Air Resource Advisors initiated daily coordination calls to talk about current and future fire activity, the need for additional monitors, and public meeting messages. These meetings continued daily and grew to include more counties as smoke impacts spread until mid-September when wildfire activity subsided.

4 Review and Evaluation of Mitigation Plan

As required in §51.930(b)(2)(iii), this mitigation plan shall periodically be reviewed and evaluated. This shall occur:

1. When the PM_{2.5} NAAQS is revised (the Clean Air Act requires a review of a NAAQS every five years) or
2. At least once every ten years.

When a review occurs, the mitigation plan will be revised as appropriate. Examples of possible updates include technology to better communicate with the public, increased availability and use of citizen air quality monitors, and changing federal rules regarding wildfires and smoke. DEQ will evaluate all aspects of the mitigation plan, making updates where necessary. DEQ will notify EPA when a mitigation plan review is triggered and develop a schedule for submission. Any mitigation plan updates will be made available to the public for comment for 30 days prior to submission to EPA.

5 Public Comment

As required in §51.930(b)(2)(iii)(A), the agency posted a draft mitigation plan for public comment on 07/6/2018. The document will be open to public comment for 30 days, closing on 8/5/2018.