

Lakeview Area PM Advance Program Action Plan - Update

October 2018



Headquarters

700 NE Multnomah St,
Suite 600
Portland, OR 97232
Phone: 503-229-5696
800-452-4011
Contact: Rachel Sakata
www.oregon.gov/DEQ

Eastern Region

475 NE Bellevue Drive,
Suite 110
Bend, OR 97701
Phone: 541-388-6146
800-452-4011
Contact: Peter Brewer
www.oregon.gov/DEQ



State of Oregon
Department of
Environmental
Quality

This report prepared by:

Oregon Department of Environmental Quality
700 NE Multnomah St, Suite 600
Portland, OR 97232
1-800-452-4011
www.oregon.gov/deq

Contact:

Rachel Sakata (Principal Author)
503-229-5659

or

Peter Brewer
541-633-2004

Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email deqinfo@deq.state.or.us.

Table of Contents

Executive Summary	1
Monitoring	1
Key Strategies	1
1. Overview and Monitoring	2
1.1 Yearly Monitoring Results	2
1.2 Three Year Average Monitoring Data	3
2. Emissions Update	3
3. Implemented Strategies	4
3.1 Mandatory Woodstove Curtailment Program	4
3.2 Woodstove Changeout Program & Weatherization of Homes	5
3.3 Open Burning Prohibitions	5
3.4 Public Education and Awareness	5
3.5 Prescribed Burning	6
4. Future Efforts	6
5. Summary	6
Appendix A – Town of Lakeview Annual Reports	1
AIR QUALITY	1
Public Awareness	1
Community Participation and Compliance	2
Planning Measures to Develop a Path Forward	2
Planning Measure to Improve Air Quality	3

Table of Figures

Figure 1: 24-hr 98th percentile concentrations measured at Center and M Street Monitor,	2
Figure 2: Three Year Average 98th Percentile Concentration Measured at Center and M Street	3

Table of Tables

Table 1: Emission Inventory Projection for 2019 compared to estimated actual emissions in 2017	3
Table 2: 2017 Winter Heating Season Advisory Calls	4

Executive Summary

In 2014, the Town of Lakeview and Lake County (Lakeview area) prepared a PM Advance Plan in conjunction with DEQ. For the past few years, the Town and County have been implementing the plan and seeing the results of their efforts. Fine particulate matter (PM_{2.5}) is the biggest concern in the Lakeview area due to smoke impacts from woodstoves, fireplaces and other wood burning appliances. Other sources of PM_{2.5} include open burning, prescribed burning, wildfires, smoke from industrial stacks, and some road dust from vehicle travel.

Monitoring

Current monitoring shows that the Lakeview area has struggled to meet the 24-hour PM_{2.5} standard but has exhibited improvement in recent years. 2017 was a challenging year for the community, and the 3-year average (2015-2017) is just above the 24-hour standard. Poor air quality and air stagnation events in January and December 2017 resulted in high concentrations of PM_{2.5}.

Key Strategies

To meet the standard, the Lakeview area will need to maintain and enhance their key strategies of reducing PM_{2.5} from wood stoves, open burning, industrial operations and other sources of fine particulate matter. Compliance with their town and county ordinances is critical to their success. These ordinances and its implementation of them include the mandatory wood stove curtailment and open burning requirements and enhanced public education.

1. Overview and Monitoring

Lakeview is a small community in the South Central part of Oregon that experienced poor air quality in the 1990s and more recently in the 2000s and 2010s. In 2014, the Town of Lakeview and Lake County submitted an action plan to achieve emission reductions to help the area meet the daily and annual PM_{2.5} standard.

A single federal reference method sampler is sited in Lakeview at the corner of Center and M Street. DEQ has monitored at this site since 1991 for PM₁₀ and since 2007 for PM_{2.5}.

1.1 Yearly Monitoring Results

In 2017, the Lakeview area exceeded the daily standard (98th percentile). Lakeview had been experiencing progress and a downward trend over the past few years, but unfortunately 2017, was a challenging year for the community. (Figure 1).

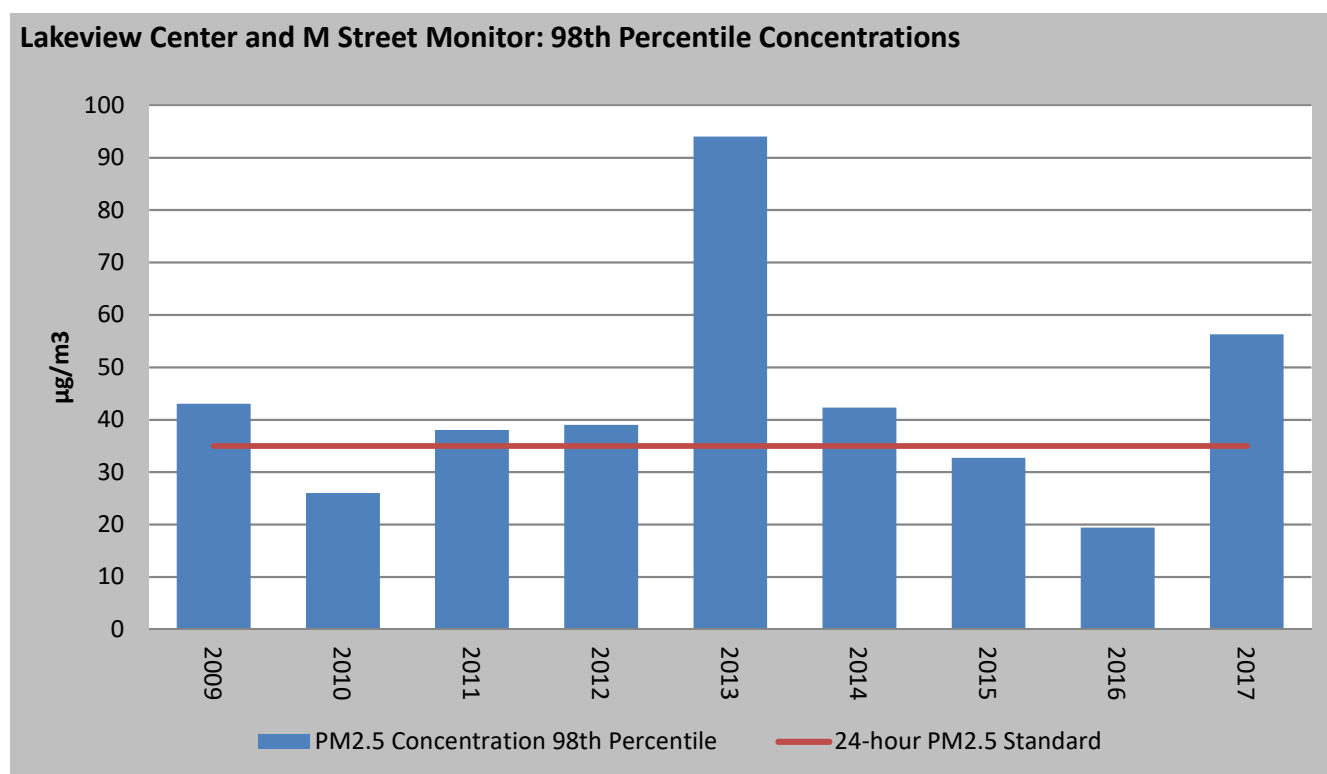


Figure 1: 24-hr 98th percentile concentrations measured at Center and M Street Monitor^{1,2}

The area was not designated nonattainment for the 24-hour PM_{2.5} NAAQS in 2007 because there was not sufficient monitoring information available at the time of the designations. However, in 2013, prolonged winter inversions occurred causing a significant increase in ambient concentrations and caused Lakeview to violate the standard. Since 2013, the Lakeview area has worked hard to bring the levels below the standard, but experienced an uptick in 2017, due to cold weather inversions and one period of prolonged air stagnation.

¹ In 2012, the Barry Point fire was excluded from the monitoring data.

² For 2013, the 98th percentile concentration is 94 µg/m³, and the 2011-2013 average was 56.0 µg/m³.

1.2 Three Year Average Monitoring Data

Lakeview is just over the standard based on the most recent data (2015-2017) data at $36.1 \mu\text{g}/\text{m}^3$. Figure 2 shows the 3-year averages:

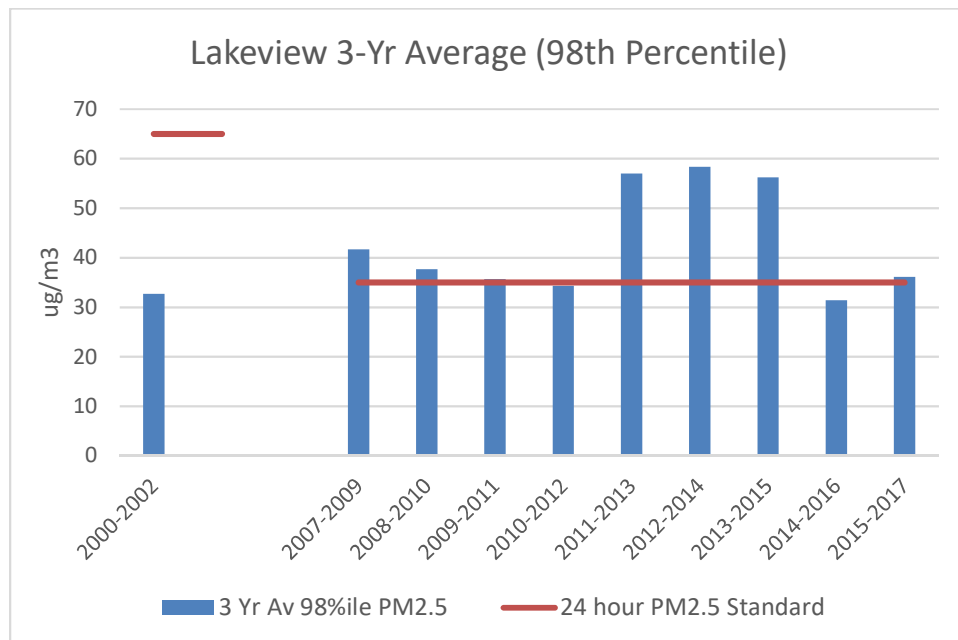


Figure 2: Three Year Average 98th Percentile Concentration Measured at Center and M Street

2. Emissions Update

In evaluating 2017, the original emission inventory was used to provide a comparable estimate of progress. Wood stove emissions (residential wood combustion) are still prominent, but all recent activity in the Lakeview area appears to be on a downward trajectory compared to the original emission inventory estimates.

Significant improvements to air quality continue to be implemented since the original emission estimates were made for 2011 and 2019. They include implementation of the mandatory woodstove curtailment program and the ongoing uncertified woodstove replacement program. The difference between the predicted 2019 emission inventory in the original plan and current estimates for 2017 is in Table 1 below.

Table 1: Emission Inventory Projection for 2019 compared to estimated actual emissions in 2017

Source	Original Future Year 2019 Lbs/day	Estimated Current Year 2017 Lbs/day
Residential Wood Combustion	588	415
Permitted Sources	238	66
Residential Open Burning	24	24
Prescribed Fire	0	0
Fugitive Dust	0.1	8
Other Area Sources	16	9
Nonroad	3	3
Onroad	2	6

Total	871	531
-------	-----	-----

The Lakeview area has made significant progress toward meeting the standard. Table 1, above, shows the community is ahead of our projected 2019 estimated reductions already in 2017.

3. Implemented Strategies

Over the years Lakeview and DEQ have developed strategies to manage particulate matter air pollution concentrations in the Lakeview area, based in part on its history of dealing with particulate (PM₁₀) pollution from the early 1990s. The emission reduction measures identified in this section include actions to address residential wood heating smoke, restrictions on residential open burning, and public education. These strategies were implemented in 2014 and they continue to this day.

3.1 Mandatory Woodstove Curtailment Program

The Town and County changed their woodburning ordinance to a mandatory curtailment program and considerable reductions have been observed. The Town of Lakeview and Lake County inside the urban growth boundary require residents to curtail their residential wood combustion on red days (high pollution, high health risk days) and curtail their uncertified woodstove use on yellow days (moderate pollution days). In November 2016, the exemption program that allowed low income and sole source homeowners to burn even on yellow and red days, was no longer offered within the town limits. For those residents with sole source of heat or low-income, they were prioritized for the woodstove changeout program to provide them with a new cleaner heating device. This is now year two of implementing the program without exemptions and all local residents are observing the curtailment calls.

The advisory continues to be available to the public every day during the wood heating season (November 1 – February 28). One part-time program staff person is responsible for providing the advisory calls and conducting patrols to see if there is compliance with the advisory. Implementation and enforcement of the advisory will continue to occur through letters and home visits. Specifically, for any offenders, a warning letter is issued that also includes information about funding opportunities for changeouts (woodstove monies that were available through 2017) and weatherization. While the ordinance has the potential to issue fines for continued offenses, the primary focus of enforcement would be through education and awareness, such as printed materials delivered to the home and/or a home visit by the program staff or other Town or County personnel.

Continued enforcement of the curtailment program, increased public awareness as a result of the program, and better compliance shows the change in public behavior towards addressing woodsmoke. Table 2 shows the number of advisory call days made.

Table 2: 2017 Winter Heating Season Advisory Calls

2017-2018 Winter Heating Season		
Green Advisory Calls	Yellow Advisory Calls	Red Advisory Calls
67	33	7

During the 2017-2018 season year the Town conducted about six compliance surveys throughout the community to identify violators of the ordinance. Surveys were conducted on both yellow and red days. There was one warning letter sent out in the 2017-2018 year. Program staff followed up with the offender and discussed the curtailment program, as the offender was new to the area and unaware of the program.

3.2 Woodstove Changeout Program & Weatherization of Homes

Lakeview has had a history of conducting woodstove changeouts by replacing old uncertified stoves with cleaner burning units. In 2014, House Bill 5201, appropriated \$750,000 in funding for a regional solutions air quality project in Lake County. Since 2014, the regional solutions air quality project has changed out stoves in 119 homes in addition to weatherizing 21 of those homes in the Lakeview area. Overall:

- 63 woodstoves and fireplaces were replaced with non-wood heating alternatives such as ductless heat pumps.
- 56 woodstoves and fireplaces were replaced with either pellet stoves or very low emitting stoves (less than 1 g/hr). For those residents who received a very low emitting woodstove or pellet stove they were also required to install a non-wood burning alternative such as a ductless heat pump to heat homes on red days. The homeowner is required to sign a paper stating they will use the alternative to burning on predicted poor air quality days in the winter.

Funding for the program ended in December 2017.

3.3 Open Burning Prohibitions

The Town of Lakeview and Lake County established an ordinance prohibiting outdoor open burning that extends to the urban growth boundary limits between November 1 and February 28th of each year. The ban has been effective in controlling open burning in the critical winter months when potential PM_{2.5} exceedances might occur.

3.4 Public Education and Awareness

The County will work in coordination with the Town to reach out to the UGB on education and outreach efforts. DEQ has provided funding to the Town, through an interagency agreement, to conduct ongoing and enhanced education efforts in the Lakeview community about proper use of woodstoves and how to reduce wood smoke.

Although difficult to quantify, the enhanced educational efforts include:

- 1) Improved education on burning properly, wood storage, seasoned wood, and types of wood to burn
- 2) Public education in schools and service groups
- 3) Installation of reader board (in a high visibility spot) to inform residents of curtailment call

Daily advisories were available to the public at 11:00AM each day, seven days a week between November 1 and March 1 of the 2017-2018 season. The advisories were available to the public by the following media outlets:

- 1) Local Radio Stations
- 2) Town Website
- 3) Spotlight in the second story window at Town Hall
- 1) Local reader board located in front of the fire hall
- 4) 24-hour hotline
- 5) Email to those who sign up, and
- 6) Facebook

The advisories were prepared based on information from the National Weather Service, Oregon Department of Forestry forecasts and local knowledge of the weather patterns. DEQ prepared a forecast tool for the Lakeview area that is available for use as a second source of information for the advisory call.

3.5 Prescribed Burning

The U.S. Forest Service continues to maintain its agreement with the Town of Lakeview and Lake County to not burn within the Lakeview Special Protection Zone (LSPZ or Goose Valley airshed) an area surrounding the Town of Lakeview, during poor air quality days. The Collins Pine Company also has a similar agreement. This helps prevent smoke impacts from prescribed burning entering into Lakeview's airshed.

4. Future Efforts

1. The Lakeview area will continue to implement the mandatory woodstove curtailment program for the 2018-2019 woodheating season and future years. Compliance surveys on red and yellow days will continue, with warning letters continuing to be sent out to any violators of the ordinance.
2. The County will work in coordination with the Town to reach out to areas in the greater Lakeview area airshed on education and outreach efforts.
3. Although funding for the woodstove changeout program ended in December 2017, the community will continue to seek out additional funding to pursue future woodstove changeouts.
4. Reinstating the town block grant for residential improvements to be used to replace wood stoves when money has been paid back from the program. Possibly broadening the grant program to include businesses that can be eligible for woodstove changeouts.
5. Continued efforts to conduct education and outreach regarding proper use of woodstoves, reducing woodsmoke, and daily woodstove curtailment advisories. Woodstove curtailment calls may also be posted on the County Fairground's reader board, a high visibility location. The Town will continue to do community outreach through health fairs, community groups, and print and social media outreach.
6. Investigate alternate monitoring opportunities to assess woodsmoke in areas throughout Lakeview and the UGB.
7. Reviewing existing ordinances to determine if there are opportunities for additional ways to reduce woodsmoke (e.g., requiring only certified devices in new construction homes, addressing auxiliary wood burning devices in non-residential structures)
8. The Town and County will work together to align the local ordinances and finance curtailment and enforcement procedures.

5. Summary

In summary, the Lakeview area has a robust PM Advance Plan that is working for the community, despite the higher numbers for 2017. This includes continued implementation and compliance of the mandatory woodstove curtailment ordinance. Woodburning emissions remain the primary source of PM_{2.5} emissions in the Lakeview area and must continue to be reduced for the area to come into compliance with the National Ambient Air Quality Standards.

In general, the Town of Lakeview and Lake County have conducted a unique set of steps to improve air quality in the area. DEQ anticipates them meeting the standard in the near future provided they continue to implement their ordinance and use the tools they have as outlined in the PM Advance Plan.

Appendix A – Town of Lakeview Annual Reports



TOWN OF LAKEVIEW

525 N. 1st Street • Lakeview, OR 97630
541-947-2029 General Business 541-947-2952 Fax

AIR QUALITY 2017-2018 ANNUAL REPORT

In the following is the report for the 2017-2018 wood smoke advisory season. Information is provided regarding the work done by the Air Quality Program Coordinator as well as some changes that have taken place in Lake County.

This being my second Air Quality season I was able to see the progress we have made with educating the community on the importance of Air Quality.

On October 27, 2015 the town council adopted Ordinance No. 853, **An Ordinance Prohibiting the Use of Solid Fuel Burning Devices within the Town of Lakeview; Providing Certain Exemptions Therefrom; Establishing Controls for the Enforcement of this Ordinance; Providing Penalties for violations Hereof; Repealing Ordinance No. 851 in its Entirety and Declaring an Emergency.**

The County and the Town's ordinances still share both similarities and differences. Similarities are our Ordinances address open burning. The Town addresses woodstove smoke that isn't covered by the County.

The County has made no changes to their Ordinance at this time.

The Town is still in charge of patrolling and monitoring the County's urban growth boundary air quality program.

For the 2017-2018 season there were several days the monitor was down. Calls this year were tough due to the rough stagnant weather in December. There were 67 green burn days, 33 yellow burn days, and 7 red days.

Public Awareness

Daily advisories were made available to the public at 11:00 a.m. seven days a week beginning November until March 1, 2018.

These advisories were made available to the public in the following ways:

- 1) Local radio stations
- 2) Town's Website
- 3) Stop light in the second story window at Town Hall
- 4) Local reader board located in front of the fire hall
- 5) 24 hour hot-line
- 6) Flash Friday- Lake Co Examiner and I put together a local broadcast of the definitions of RED-YELLOW-GREEN.
- 7) Facebook

We also contacted the community via- email per their request with the daily advisories.

Daily information was also available to the public through Town Hall.

The information for the daily advisories came from a few different Intel's.

I took information from national weather service station as well as the DEQ's website to help make my decision on the burn advisory.

The Air Quality Coordinator worked one-on-one with residents providing information on energy assistance programs, alternative heat sources, red days, burning clean, and other program-related issues.

Community Participation and Compliance

The AQ Coordinator continued to compile names and phone numbers to relay to SCOEDD for the woodstove change out project as well as giving SCOEDDS information to the inquiry.

There were a total of 107 change outs for the program. There were no woodstove change outs for 2017-2018 due to lack of funding.

The AQ Coordinator conducted monitoring surveys on Red days.

In the wood smoke advisory season there was one warning letter sent.

Outreach to schools to participate in air quality-related activities was not successful. The Air Quality Coordinator will review and explore options for 2018-2019.

Lakeview-Lake County Air Quality Committee continues to meet in support of achieving air quality goals. Local agencies observed and complied with burning restrictions.

In conducting compliance surveys, the Air Quality Coordinator contacted homeowners to provide information to gain support for the need to meet community air quality compliance.

Planning Measures to Develop a Path Forward

The reader boards as well as all other methods of daily calls still contribute to the Town's outreach to the public.

With the public's input the AQ Coordinator Dawn Lepori would like to develop ways to help the community improve their air quality while not making it impossible to understand the need for improvement.

Lakeview-Lake County Air Quality Committee reviewed 2017-2018 results and is scheduled to review the plan with the intent to identify additional measures for next season.

Planning Measure to Improve Air Quality

In the matter of improving air quality the Town continues to enforce their Ordinance as well as educating the public on the importance of Air Quality and programs available to help improve air quality.

The Town Manager continues to work with the natural gas working group to try and obtain natural gas for the area to help improve air quality.

The Town would like to determine what grant money is available to help with the change out program and be well utilized for the area to help reduce the wood smoke.

Dawn Lepori,
Town of Lakeview
Air Quality Program Coordinator