



# Oregon

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November 26, 2019

Laura Bunte  
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Office of Air Quality Planning and Standards (C304-01)  
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Via email

Dear Ms. Bunte,

Please find attached updated PM Advance Plans for Lakeview and Prineville, Oregon for the 2018 year. The Oregon Department of Environmental Quality, the Town of Lakeview and Lake County, and Prineville and Crook County appreciate the opportunity to continue to be part of EPA's PM Advance Program. Our goal is to preserve and improve air quality in the Lakeview area and Prineville. Both areas have been hard at work implementing its plan to reduce PM<sub>2.5</sub> emissions. The plans are not the same either, with each area implementing what they feel they need or target at this time to overcome their PM<sub>2.5</sub> challenges.

We look forward to receiving your comments on these PM Advance updates.

Sincerely,

Peter Brewer P.E., Air Quality Attainment Coordinator  
Eastern Region, Oregon Department of Environmental Quality

cc: Larry Wallace, U.S. EPA  
Rich Damberg, U.S. EPA  
Lisa Sutton, U.S. EPA  
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# Lakeview Area PM Advance Program Action Plan - Update

October 2019



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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](mailto:deqinfo@deq.state.or.us).

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# 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<sub>2.5</sub>) is the biggest concern in the Lakeview area due to smoke impacts from woodstoves, fireplaces and other wood burning appliances besides wildfire smoke in the summer. Other sources of PM<sub>2.5</sub> include open burning, prescribed burning, wildfires, smoke from industrial stacks, and some road dust from vehicle travel.

## Monitoring

In recent years, monitoring showed that the Lakeview area struggled to meet the 24-hour PM<sub>2.5</sub> standard. During the 2018-2019 season, when wildfire days are removed from the analysis, PM<sub>2.5</sub> levels were well below the standard, with the 3-year average (2016-2018) showing compliance with the 24-hour standard. Good air quality and relatively short air stagnation events combined with compliance of the no burn ordinances helped lower the concentrations of PM<sub>2.5</sub>.

## Key Strategies

To continue to meet the standard, the Lakeview area will need to maintain and enhance their key strategies of reducing PM<sub>2.5</sub> 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 periodic 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<sub>2.5</sub> standard.

A single federal reference method sampler for PM<sub>2.5</sub> is sited in Lakeview at the corner of Center and M Street. DEQ has monitored at this site since 1991 for PM<sub>10</sub> and since 2007 for PM<sub>2.5</sub>.

## 1.1 Yearly Monitoring Results

In 2018, the Lakeview area met the daily standard (98<sup>th</sup> percentile). Lakeview had been experiencing progress and a downward trend over the past few years despite a challenging 2017. (Figure 1).

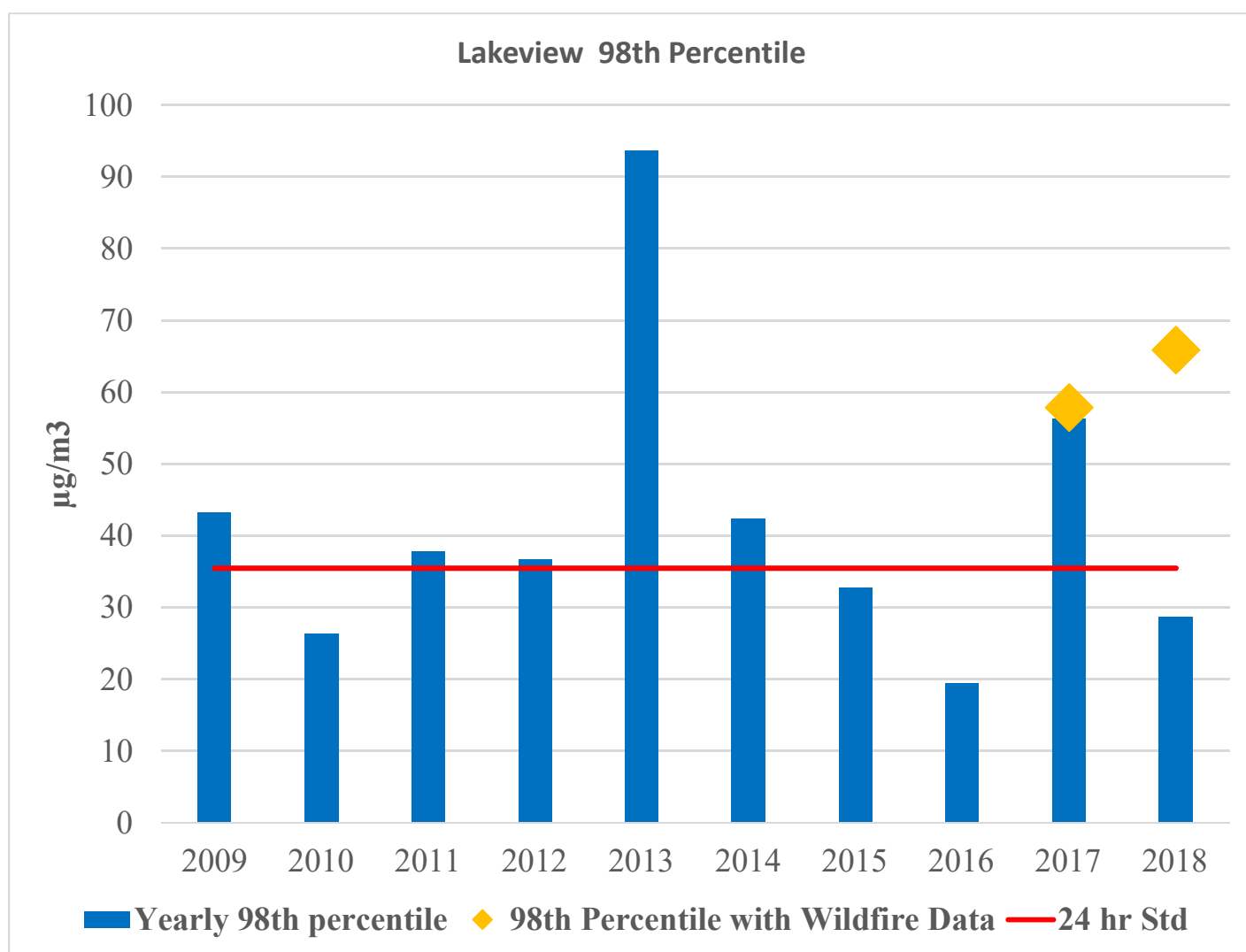


Figure 1: 24-hr 98th percentile concentrations measured at Center and M Street Monitor

The area was not designated nonattainment for the 24-hour PM<sub>2.5</sub> 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. In 2018, the Lakeview area experienced favorable weather patterns with minimal inversions and air stagnation events and had increased compliance with the wood stove ordinance. This led to improved air quality in the community.

## 1.2 Three Year Average Monitoring Data

Lakeview is currently meeting the standard (a 3-yr average of 98th percentile 24-hour data) based on the most recent data (2016-2018) at a level of 34.8  $\mu\text{g}/\text{m}^3$ . Figure 2 shows the 3-year averages over the past few years:

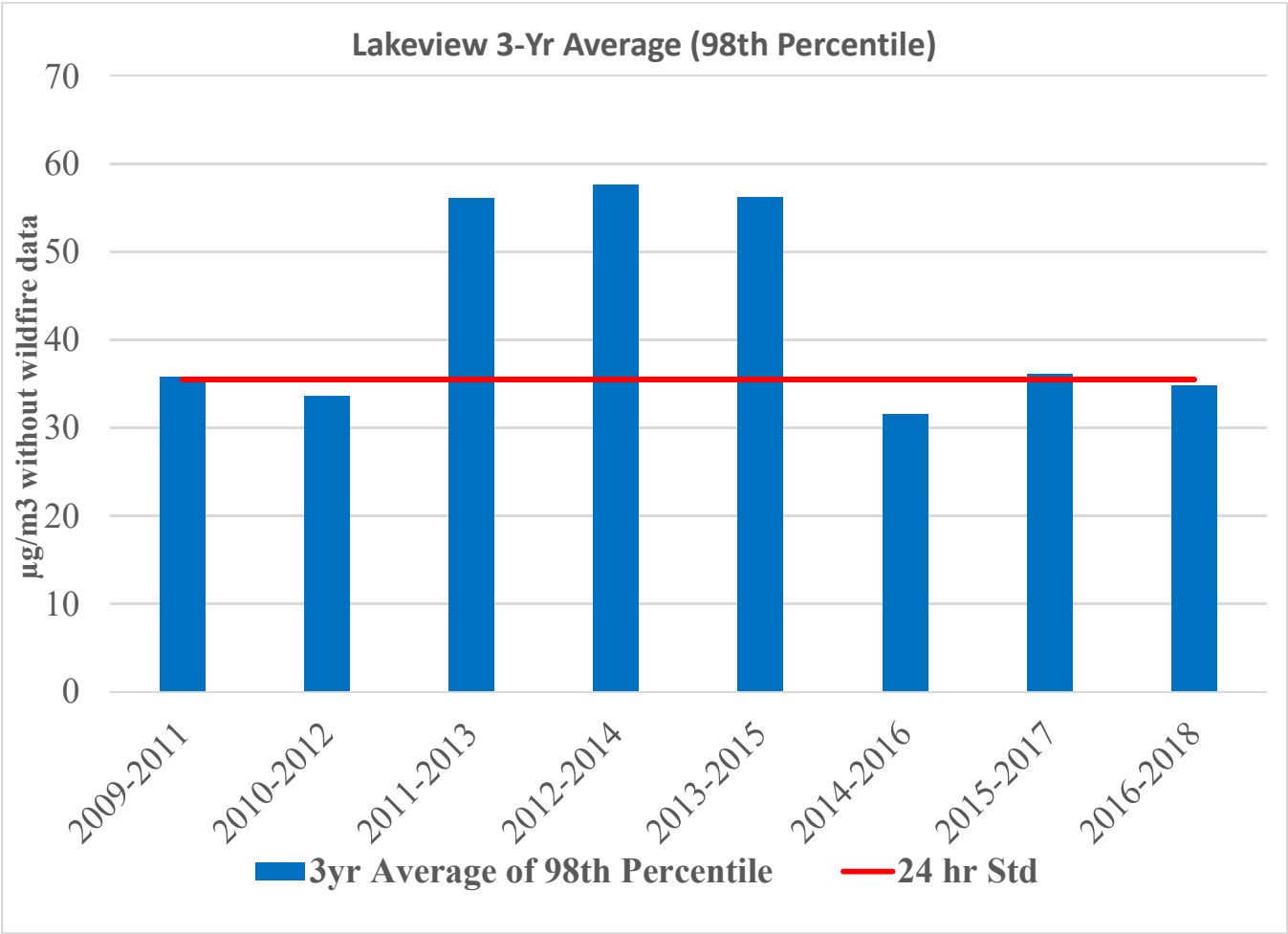


Figure 2: Three Year Average 98th Percentile Concentration Measured at Center and M Street without wildfire impacts.

## 2. Emissions Update

In evaluating 2018, 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 2018.

## 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 (PM<sub>10</sub>) 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 (in 2015) 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 three of implementing the program without exemptions and local residents are observing the curtailment advisory determinations.

The advisory continues to be available to the public every day during the wood heating season (November 1 – February 28). One part-time Air Quality 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 if there is funding available. 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: 2018 – 2019 Winter Heating Season Advisory Calls**

2018-2019 Winter Heating Season		
Green Advisory Calls	Yellow Advisory Calls	Red Advisory Calls
87	9	2

During the 2018-2019 season year the Town conducted about 9 compliance surveys throughout the community to identify violators of the ordinance. Surveys were conducted on red days at a minimum. There were nine warning letters sent out as a result of the surveys. Program staff followed up with the offenders and discussed the curtailment program and the need and importance of complying with the ordinance.

## 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. For the 2018 year there was no funding available for the changeout of woodstoves, however approximately \$20,000 from the past-loan program and related reimbursement for woodstove changeouts has been identified and should be made available to residents for additional woodstove changeouts in 2019-2020.

## 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 28<sup>th</sup> of each year. The ban has been effective in controlling open burning in the critical winter months when potential PM<sub>2.5</sub> 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 by 11:30AM each day, seven days a week between November 1 and March 1 of the 2018-2019 season. The advisories were available to the public by the following media outlets:

- 1) Local Radio Stations
- 2) Town Website
- 3) Stoplight in the second story window at Town Hall
- 4) Local reader board located in front of the fire hall and the Fairgrounds
- 5) 24-hour hotline
- 6) Email to those who sign up, and
- 7) 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 generally will also work through a forecast and be available to Town Staff to call and discuss the advisory determination for that day.

## 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. The USFS and DEQ along with the Air Quality Committee are reviewing the agreement to renew it, work with the signatories, and gain concurrence this year.

# 4. Future Efforts

1. The Lakeview area will continue to implement the mandatory woodstove curtailment program for the 2019-2020 woodheating season and future years. Compliance surveys on red and yellow days will continue, with warning letters 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. Two flag poles will be located around the community and one in front of Town Hall to fly the wood stove advisory color of the day during the November – February season.
3. The community will continue to seek out additional funding to pursue future woodstove changeouts. There is potential funding available through the Legislature for this next year which the community will pursue.
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. This may involve the use of low-cost sensors.
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 possibly align the local ordinances and finance curtailment and enforcement procedures.
9. Three moisture meters have been procured and will be used to educate residents on the importance of having the optimal moisture in wood prior to burning.
10. Join the Alert Sense program to utilize their home – and resident notification system of red and yellow days.
11. Build one or more cord-wood storage units (2-cords each) for residents in need as identified through the community wood program. The sheds will be kept under 200 ft sq, and built by volunteers in the community.

## 5. Summary

In summary, the Lakeview area has a robust PM Advance Plan that is working for the community, and despite the higher numbers for 2017, the area had much improved compliance for the 2018 year and 2018-2019 winter season. This includes continued implementation and compliance of the mandatory woodstove curtailment ordinance. Wood burning emissions remain the primary source of PM<sub>2.5</sub> 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  
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## AIR QUALITY 2018-2019 ANNUAL REPORT

The following is the report for the 2018-2019 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 third 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 the 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.

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

For the 2018-2019 season there were several days the monitor was down. Calls this year were tough due to the rough stagnant weather in December. There were 87 green burn days, 9 yellow burn days, and 2 red days.

### **Public Awareness**

Daily advisories were made available to the public at 7:30 a.m. seven days a week beginning November until March 1, 2019.

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 and fairgrounds;
- 5) 24-hour hot-line;
- 6) Flash Friday- Lake Co Examiner and a local broadcast of the definitions of RED-YELLOW-GREEN; and
- 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.

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 a 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 conducted monitoring surveys on Red days.

There were 9 letters sent out in the Town limits and all complied with the warning letter. There was one Doctor's note stating the gentleman needed direct heat due to prior surgeries. The Five County letters were sent with a request for exemption forms. All were filled out and complied.

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 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 2018-2019 results and is scheduled to review the plan with the intent to identify additional measures for next season.

There were 3 Moisture meters ordered this year to be used to check wood piles before burning.

Three Flag Poles were ordered to hang in two other locations, and to replace the pole in front of Town Hall.

### **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