

The Seeley Lake Woodstove Changeout Program: A model for effective community and government participation, action, and implementation.

Summary and Presentation

November, 2013

**Presented by the Missoula (Montana)
City-County Health Department
Environmental Health -
Air Quality Division**



The Seeley Lake Woodstove Changeout Program: A model for effective community and government participation, action, and implementation.

Introduction:

▶ **Seeley Lake is a small, mountain valley community** located northeast of Missoula in Missoula County, Montana, in the heart of the Northern Rocky Mountains. Seeley Lake is bounded by steep mountain slopes. As is common in rural, forested areas, many residents rely on woodstoves to heat their homes. Unfortunately, the Seeley Lake valley is prone to frequent temperature inversions that have the potential to trap smoke from those stoves near the ground where it poses a threat to human health. The combination of strong nightly inversions and heavy woodstove use resulted in a small community with a large air quality problem. With a long history and tradition of wood burning, and the unavailability of natural gas, Seeley Lake full time residents have limited affordable options to heat their homes and businesses.



Seeley Lake and Clearwater River Valley with Swan Range to the east

2005:
The Seeley Lake community recognizes it has a wintertime air quality problem

▶ **The first look at Seeley Lake's air quality** came in 2005, when the Missoula City-County Health Department (MCCHD) began monitoring at the Fire station every three days. The purpose was to verify that Seeley Lake met the (then) National Ambient Air Quality Standard for PM_{2.5} of 65 µg/m³. Seeley Lake appeared to be in compliance with the National Ambient Air Quality Standards.

2006:
PM_{2.5} 24-hour (daily) National Ambient Air Quality Standard changes to 35 µg/m³ from 65 µg/m³ (October 17, 2006) in order to better protect public health

▶ **Fire station monitoring data indicates Seeley Lake could exceed the new, stricter air quality standard.** With the new National Standards, and because the Fire station site did not meet EPA siting criteria, a permanent site that met Federal guidelines had to be found. The new lower standard indicated that monitoring would need to continue in Seeley Lake until a new site, that met siting criteria, was operational. PM_{2.5} sampling then continued at the Fire station through 2009 so that a comparison between the two sites could be done for the end of 2009.

2009:
**New hourly PM2.5
monitor installed at
the Seeley Lake
Elementary School**

▶ **The new Elementary school site met Federal siting criteria**, which requires the monitor to be a minimum distance from structures and trees. Data collection at the school began in November 2009 and information gathered showed several days well over the new national 24-hour standard of 35 µg/m³. If Seeley Lake continued to exceed the standard, the National Clean Air Act required that enforceable rules be adopted that would get and keep Seeley Lake in attainment with the standard. Since Seeley Lake had not yet been designated non-attainment, there was flexibility in methodology for improving the air quality, rather than imposition of stricter rules such as limited woodstoves use.

2009:
**Continued
investigation and
community outreach**

▶ **In 2009 the Missoula City County Health Department held 3 open houses** in Seeley Lake. Topics covered included how to burn cleanly, the proposed 2010 Missoula City-County Air Pollution Control Program rule changes for new woodstoves, and how the newer stoves burned cleaner.

In addition to monitoring PM2.5 concentrations, MCCHD staff **performed several visual smoke assessments** in Seeley Lake during the winter of 2009-2010. They observed the thickest smoke near the elementary school and in the neighborhoods immediately south and north of the elementary school site. Smoke levels appeared less dense in other parts of the community such as the high school, the golf course, the intersection of Boy Scout Road and Hwy 83 and the intersection of Morrell Creek Road and Hwy 83 north of the elementary school site. Visual observations by MCCHD staff in Seeley Lake frequently found woodstove smoke opacity readings of 90-100%.



Seeley Lake Elementary School
PM2.5 monitoring station



Seeley Lake

April 2010:
**MCCHD conducts a
visual woodstove/
fireplace/pellet
stove chimney
survey**

▶ In April 2010, MCCHD conducted a visual **woodstove/ fireplace/pellet stove chimney survey** in the residential neighborhood just south of the elementary school. In approximately a 16 square block area or a 1/2 square mile, the survey identified 50 residences with chimneys and five residences with a second chimney for a total of up to 55 woodstove/ fireplace/pellet stove chimneys in the survey area.

Chemical mass balance studies in western Montana have shown that woodstoves are the primary source of winter PM2.5 air pollution. Based on these chemical mass balance studies and visual observations, woodstove smoke is proven to be the primary source of PM2.5 in Seeley Lake. The greatest PM2.5 concentrations occur at night and often clear out in the late morning when the inversions break. What appears to be a large number of woodstoves in a few blocks produce enough pollution to quickly generate high PM2.5 concentrations. This showed that there is great potential for improved emissions at these locations.



**Winter 2010/11:
PM2.5 Saturation
Study performed**

▶ **PM2.5 monitors were set up in and around town** to determine areas of concern and confirm the source of pollution. The main source of PM2.5 was residential woodstove smoke. A saturation study was done in an attempt to quantify distribution of wood smoke. The difference between the Fire station and Elementary school site indicated that the problem may not be valley wide, but rather a neighborhood scale problem. Air quality was good in other parts of the valley away from the residential areas.



Portable neighborhood monitoring station

The problem was determined to be a manageable scale and efforts were then focused on a few neighborhoods to reduce pollution volume and sources.

**2010:
Woodstove Open
House - Community
Council takes a
leading role**

▶ **In 2010 the Missoula City County Health Department partners** with community leaders, vendors, Low Income Energy Assistance Program (LIEAP), and others to host a “woodstove open house” at the Fire Hall. About 300 residents attended the open house, which included displays on how to burn cleanly, burning alternatives, new woodstove technology, information about inversions and air quality and health. MCCHD provided funds for tarps, wood shelters and the event while community members helped build and distribute wood sheds and tarps. Free food and beverages were provided as an incentive.

Thus began the foundation of Missoula County working with Seeley Lake on a wood- burning appliance changeout program. The groups then formed a plan, and started to build partnerships to proactively address the Seeley Lake community’s air quality. As a result, \$13,500 in funding was secured to implement a small woodstove changeout and education pilot program. The successful pilot results demonstrated that concerted action and a well thought out program could get cleaner technology implemented, inform residents about better choices and practices that maintain or improve home heating, save money and improve air quality. Initially, four open houses were conducted, five wood stoves changed out, 15 wood shelters built, a “tarp your wood” educational initiative plus information on how to burn wise, distributed. The implementation of the pilot program provided valuable experience to establish a greater program.

**March 2012:
Missoula City-County
Health Department
applies for USDA/
Glacierland
Woodstove
Changeout Grant**

▶ In 2012 Missoula County, with help from several members of the Seeley Lake community, applied for and received the Glacierland woodstove changeout grant. Funds for the grant are provided through the USFS. The success of that application was due in part to the earlier pilot program success.

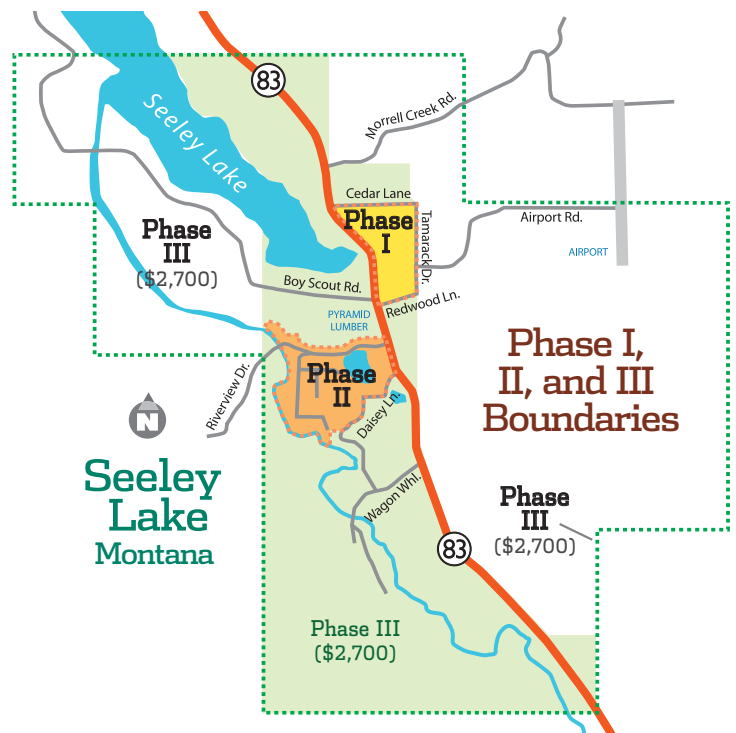
With promotional assistance from the local weekly newspaper, the *Pathfinder*, Missoula County launched the Seeley Lake Woodstove Changeout Program at a local annual community festival. The *Pathfinder* helped promote clean air and the woodstove change out program by publishing articles and notices about Seeley Lake’s air quality, the changeout process, and upcoming public events. The paper also stressed the fact that the newer stoves require less wood for the same heat! The goal was to replace at least 154 stoves by December 2013, and provide education to community residents in order to meet the goal of moving Seeley Lake into compliance with the National Ambient Air Quality Standards.



2012:
The Changeout Plan: A phased approach

▶ **With the Glacierland grant secured**, in the spring of 2012 the Seeley Lake Woodstove Changeout Program moves into full swing. Participation in the program starts off quickly. Vendors go door to door and find many people in Phase I (near the school) and Phase II (south of Pyramid Lumber) with older stoves who want to participate. Many safety issues are addressed as the stove installations are brought up to code. 60 stoves are replaced in Phase I, and ten stoves are replaced in Phases II and III by March 20, 2013. The removed stoves are recycled in order to keep them from being reinstalled in Missoula County. Several people in Phase II are on the waiting list and want to participate when more matching money is found. For the Seeley Lake changeout program, only EPA-certified woodstoves with emissions at 3 grams/hour or less and EPA certified pellet stoves are approved for installation.

In late March, MCCHD retains the services of a marketing firm to help promote awareness of the Changeout Program and to also help “tell the story” to a larger, national audience.

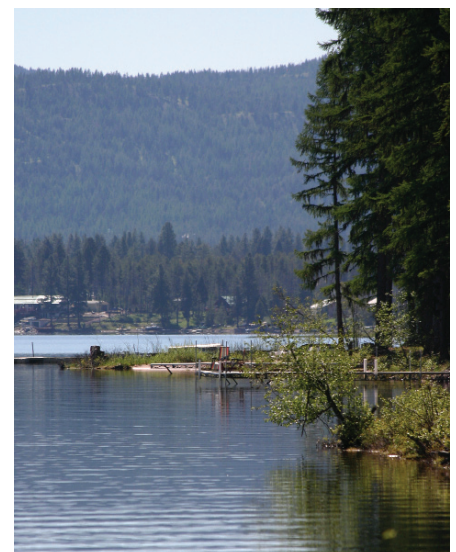


April 2013:
Matching money from the Roseburg SEP becomes available

▶ **Instead of a cash penalty for violations of the Clean Air Act of Montana**, Roseburg Forest Products agreed to pay \$130, 925 to the Missoula County Seeley Lake Woodstove Changeout Program. Because of the new matching funds from Roseburg, up to \$2,700 became available per changeout to people in Phase I by the Elementary school, and Phase II south of Pyramid Mountain Lumber.

June 2013:
The program reaches the 100 stove mark

▶ **By June of 2013**, approximately 2/3 of the goal of replacing 154 stoves is met. The campaign picks up steam with warmer weather, *Pathfinder* press, and some advertising on the part of MCCHD. Response and participation accelerates with the additional funding.



Seeley Lake on a beautiful June day



July 2013:
Additional funding secured from a Steele-Reese Foundation Grant

▶ In late July, 2013 the Steele-Reese Foundation awards MCCHD a grant totaling \$25,000. This grant from the Steele-Reese Foundation allows the opening up all of Phase III (see map previous page) for the full \$2,700 compensation per woodstove changeout, instead of \$1,500 per stove.

Fall 2013:
The Seeley Lake Woodstove Changeout exceeds it's goal of 154 stoves changed out

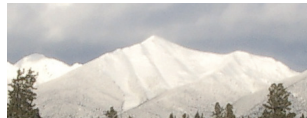
▶ By the end of September, the Seeley Lake Woodstove Changeout Program meets it's stated goal of replacing at least 154 inefficient, non EPA-certified stoves two months ahead of schedule. By early November, with funds remaining, an additional 10 stoves were approved, bringing the total to 164.



Winter recreation is an important part of the Seeley Lake economy

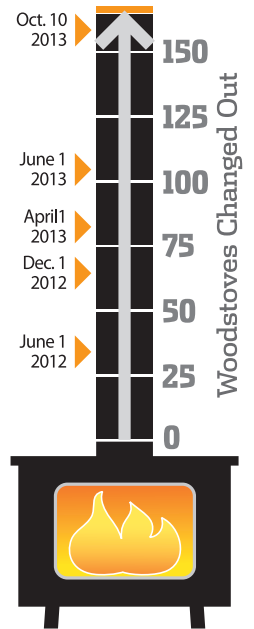
Winter 2013/14:
Monitoring will tell the real story

▶ Air quality monitoring will help tell the real success story of the Seeley Lake Woodstove Changeout program. Results from 2012/2013 indicate measurable progress in the PM2.5 standard, but new data will help define efficacy of the program.



GOAL MET -164 STOVES CHANGED OUT!

as of November 2013



SEELEY LAKE WOODSTOVE CHANGEOUT
seeleylakewoodstoves.com



“ Well pretty much anybody who lives here knows that there is a winter air quality issue. But we didn't have any idea that it could be addressed...let alone how to address it.

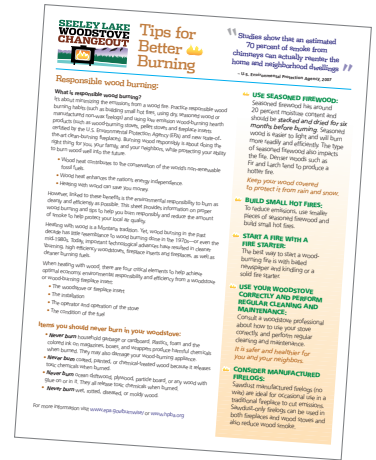
I first got involved with the Seeley Lake Community Council in 2006. I was one of the original members of the PM 2.5, also known as the Air Quality Committee for the Seeley Lake Community Council. ”

– Carol Evans, Community Leader



Summary:
There is a need for ongoing education and outreach

Even though the goal of replacing a certain number of woodstoves has been met, the work of improving Seeley Lake's wintertime air quality is not done. The preliminary data from the winter of 2012/2013 indicates that there have already been some air quality improvements, but we aren't there yet. Follow up and appropriate education are critical to improve air quality to the point where the PM2.5 standard can be met and maintained. For new development, regulations will allow only EPA-certified wood and pellet stoves to be installed. Ongoing education about tips for better burning (Burnwise) and proper storing and curing of firewood are important tools in helping to ensure that Seeley Lake remains in compliance with Federal air quality guidelines. Public awareness and community involvement will continue to play important roles in helping keep Seeley Lake's air quality healthy.



Contact:

For more information about the Seeley Lake Woodstove Changeout Program contact:

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Additional information, and documentary video available on our website at www.SeeleyLakeWoodstoves.com



Montanans are fiercely independent, I don't care if you live in Wibaux or Seeley Lake, we all share that trait. So, I think you really need to understand the culture or the community that you're working in and work to that strength. Don't try to change people. Help people try to understand why they need to make a change. And then you'll be successful.

– Loren Rose, Chief Operating Officer, Pyramid Mountain Lumber/Community Leader



Seeley Lake Woodstove Changeout Partners:



▶ **The Seeley Lake Woodstove Changeout Program is funded in part by the U.S. Forest Service, Department of Agriculture** and is administered in partnership with **Glacierland Resource Conservation and Development, Inc.** Additional assistance provided by the Environmental Protection Agency. Additional funding and/or assistance provided by the Seeley Lake Community Foundation, Seeley Lake Community Council, Missoula County, Montana Department of Environmental Quality and participating vendors.

Missoula City-County Health Department Air Quality Division

For more than 40 years, the Missoula City-County Air Pollution Control Program has been working to make sure every Missoula County resident can go outside and enjoy fresh, clean air. By working to replace inefficient stoves with clean burning, efficient pellet or EPA-certified woodstoves, we are moving toward a clean, healthful environment for Seeley Lake families.

Seeley Lake Community Council

The Seeley Lake Community Council works to advance and promote the interests and welfare of the citizens of the Seeley Lake community by acting as a liaison between the citizens of the Seeley Lake community and the Missoula County Commissioners. With deep ties within the community and a passion for ensuring the well-being of all Seeley Lake residents, the Community Council is a central player in the Woodstove Change Out Program.

USFS and Montana Department of Natural Resources and Conservation

The USDA Forest Service and Montana Department of Natural Resources and Conservation (DNRC) are proud partners in the Seeley Lake Woodstove Changeout Program. In addition to providing a low-cost, locally-sourced renewable fuel, the harvest and use of firewood and other wood fuels provides market opportunities that can help to offset land management costs, improve forest health and resilience, reduce wildfire threats to communities, and improve air quality by reducing emissions from open slash pile burning.

Montana Department of Environmental Quality

The Montana Department of Environmental Quality (DEQ) is participating in the Seeley Lake Woodstove Changeout Program through program support. DEQ seeks to enhance the working relationship between DEQ and stakeholders in order to protect, sustain, and improve a clean and healthful environment to benefit present and future generations.

Vendor Partners:

▶ **Anderson's Masonry Hearth & Home** andersonsmasonry.com
2630 West Broadway, Missoula, MT 59808 (406) 728-6790
16 Woodland Park Drive, Kalispell, MT 59901 (406) 755-2497

Axmen www.axmen.com
7655 Highway 10 West, Missoula, MT 59808 (406) 728-7020

Grizzly Fireplace grizzlyfireplace.com
(406) 207-0017 john@grizzlyfireplace.com

Trader Brothers TraderBrothers.com
16490 Old Hwy 93 S, Lolo, MT 59847 (406) 273-3555

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