

Forest Service Wood-Burning Appliance Changeout Program Administrator
Proposal

Submitted By: Missoula County, Montana

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- A. 2010-2011 Media Exhibits**
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2. Seeley Lake, Montana – A Community Near Nonattainment for Particulate Matter

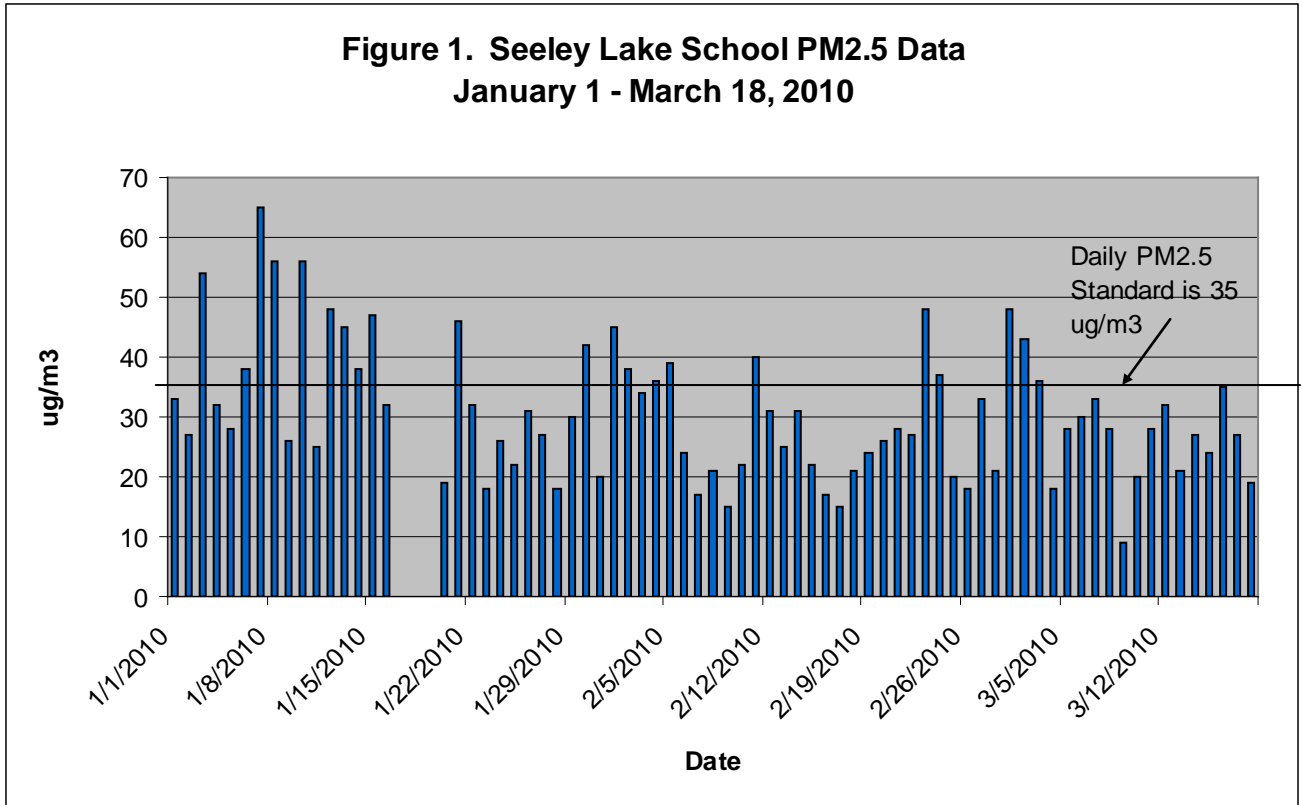
Seeley Lake is a small, mountain valley community located north of Missoula in Missoula County, Montana. As is common in rural, forested areas, many residents rely on woodstoves to heat their homes.¹ The Seeley Lake valley, like many areas in western Montana, is prone to frequent temperature inversions 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 has resulted in a small community with a large air quality problem. Simply put, Seeley Lake has the worst measured air quality in the state of Montana. Further, if improvements are not made, Seeley Lake will become a nonattainment area for daily PM_{2.5} standard.

The Missoula City-County Health Department (MCCHD) and Montana Department of Environmental Quality (DEQ) first started measuring fine particulate concentrations in Seeley Lake in 2006. During that initial study in 2006 and 2007, 24-hour PM_{2.5} concentrations greater than the daily National Ambient Air Quality Standard (NAAQS) of 35 µg/m³ were measured at the Seeley Lake Fire Hall. The 2006-2007 measurements were conducted using BGIs, and data from the study were not available until several months after collection. Based on the results of that study, which showed several days with 24-hour PM_{2.5} concentrations exceeding the NAAQS, the Department and the DEQ installed a new continuous PM_{2.5} monitor in Seeley Lake in 2009. This permanent PM_{2.5} beta-attenuated monitor (BAM) was installed near the Seeley Lake Elementary School (School) at a location meeting all EPA siting criteria. The elementary school BAM PM_{2.5} monitor is also centrally located in a residential area where many of the homes are heated with wood-burning appliances. The BAM reports hourly data on a near-real time basis and provides the Department and the local community information about Seeley Lake's air quality.

Data collection at the School site started in mid-November, 2009. Within a month and half, 19 days had daily PM_{2.5} averages greater than the 24-hour NAAQS of 35 µg/m³. Between January 1 and March 18, 2010, 21 days exceeded the PM_{2.5} 24-hour NAAQS (Figure 1). For the 2010-2011 winter (November-February), 50 days with PM_{2.5} concentrations greater than 35 µg/m³ were measured and for the 2011-2012 winter, 51 days with PM_{2.5} concentrations greater than 35 µg/m³ were measured. In addition, these days with concentrations exceeding the national PM_{2.5} 24-hour standard of 35 µg/m³ are, in general, significantly greater than the standard (they range from 36-69 µg/m³ and the average for the past two years is 46 and 48 µg/m³).

¹ 2010 Census reported 45.5% of Seeley Lake homes heat with wood, propane was the second most commonly used fuel at 30.7%.

**Figure 1. Seeley Lake School PM_{2.5} Data
January 1 - March 18, 2010**



In addition to monitoring PM_{2.5} concentrations, Department 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. In areas with woodstove use, visual observations by Missoula City-County Health Department staff in Seeley Lake frequently find wood stove smoke opacity readings of 90-100%.

On April 7, 2010, the Department 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 ½ square mile, the survey found 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 PM_{2.5} air pollution². Based on these chemical mass balance studies and visual observations, wood stove smoke is the primary source of PM_{2.5} in Seeley Lake.

² Ward, T.J., Lange, T., 2010. The impact of wood smoke on ambient PM_{2.5} in northern Rocky Mountain valley communities. *Environmental Pollution* 158 (2010) 723–729.

The greatest PM_{2.5} 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 produces enough pollution to quickly generate high PM_{2.5} concentrations. This shows that there is great potential for improved emissions at these locations.

Saturation Study for PM_{2.5}

To analyze the distribution of PM_{2.5} throughout the Seeley Lake Community, the Missoula City-County Health Department collaborated with the Montana DEQ to perform a PM_{2.5} saturation study from October 1, 2010, through March 31, 2011. The purpose of the Seeley Lake PM_{2.5} Saturation Study was to characterize the PM_{2.5} distribution in the local area and determine if other Seeley Lake neighborhoods have high PM_{2.5} concentrations.

Site locations for the saturation study samplers are described below.

1. U.S. Forest Service Ranger Station at the northern end of Seeley Lake - a location 1.5 miles north of the School site to cover the north side of the community.
2. The Historic Barn and Visitor Center (Barn) south of Seeley Lake – near the Double Arrow Ranch and golf course.
3. Just west of the airport on County land- several houses in this area may produce enough home heating emissions to generate high PM_{2.5} concentrations in the neighborhood. In addition, the airport is located above the valley floor and this location covers the east side of town.
4. The corner of Juniper & Alder by the wood waste landfill – in Seeley Lake just north of the wood waste landfill and south of the chimney survey area.
5. Private parcel on Boy Scout Road – a location between Boy Scout Road and the lake.
6. Riverview Drive (DogTown) – a neighborhood south of Pyramid Mountain Lumber that potentially contains a significant number of houses with wood stoves.

Monitor locations are shown on the attached map (Appendix A).

Table 1 shows the number of days woodstove smoke caused fine particulate concentrations to exceed the PM_{2.5} 24-hour NAAQS (35 µg/m³) at each monitoring site. The permanent monitor at the School site had the most days that exceeded the 24-hour PM_{2.5} standard (n=48) , and the outlying areas (Forest Service, Barn and Airport) had the none.

Table 1. Study Days with 24-Hour PM_{2.5} Values > 35 µg/m³ by Site Caused by Wood Stoves

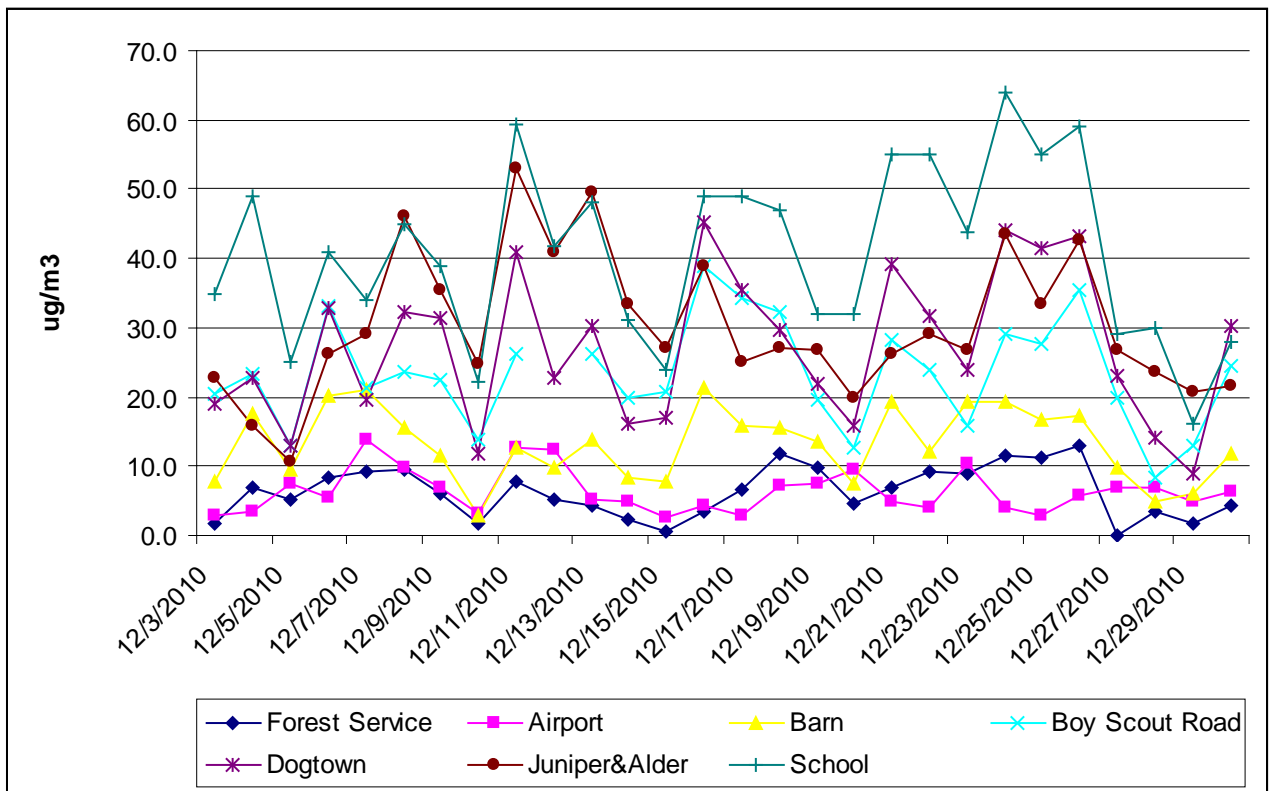
	Forest Service	Barn	Airport	Boy Scout Rd.	Dogtown	Juniper & Alder	School (permanent)
October	0	0	0	0	No Data*	0	0
November	0	0	0	2	4	7	7
December	0	0	0	2	6	8	18

January	0	0	0	1	1	9	13
February	0	0	0	0	2	6	7
March	0	0	0	0	0	2	3
Total	0	0	0	5	13	32	48

* There is no data for Dogtown in October because the monitor was not set up until November.

All the residential sites on the valley floor (Boy Scout Road, DogTown, Juniper & Alder and the School) had multiple days with 24-hour PM_{2.5} averages greater than 35 µg/m³. While PM_{2.5} values rose and fell together throughout the study area, the residential sites consistently had greater PM_{2.5} concentrations. Graph 3 shows that the residential sites consistently had PM_{2.5} concentrations greater than the other sites for December. Similar results were recorded for the duration of the study.

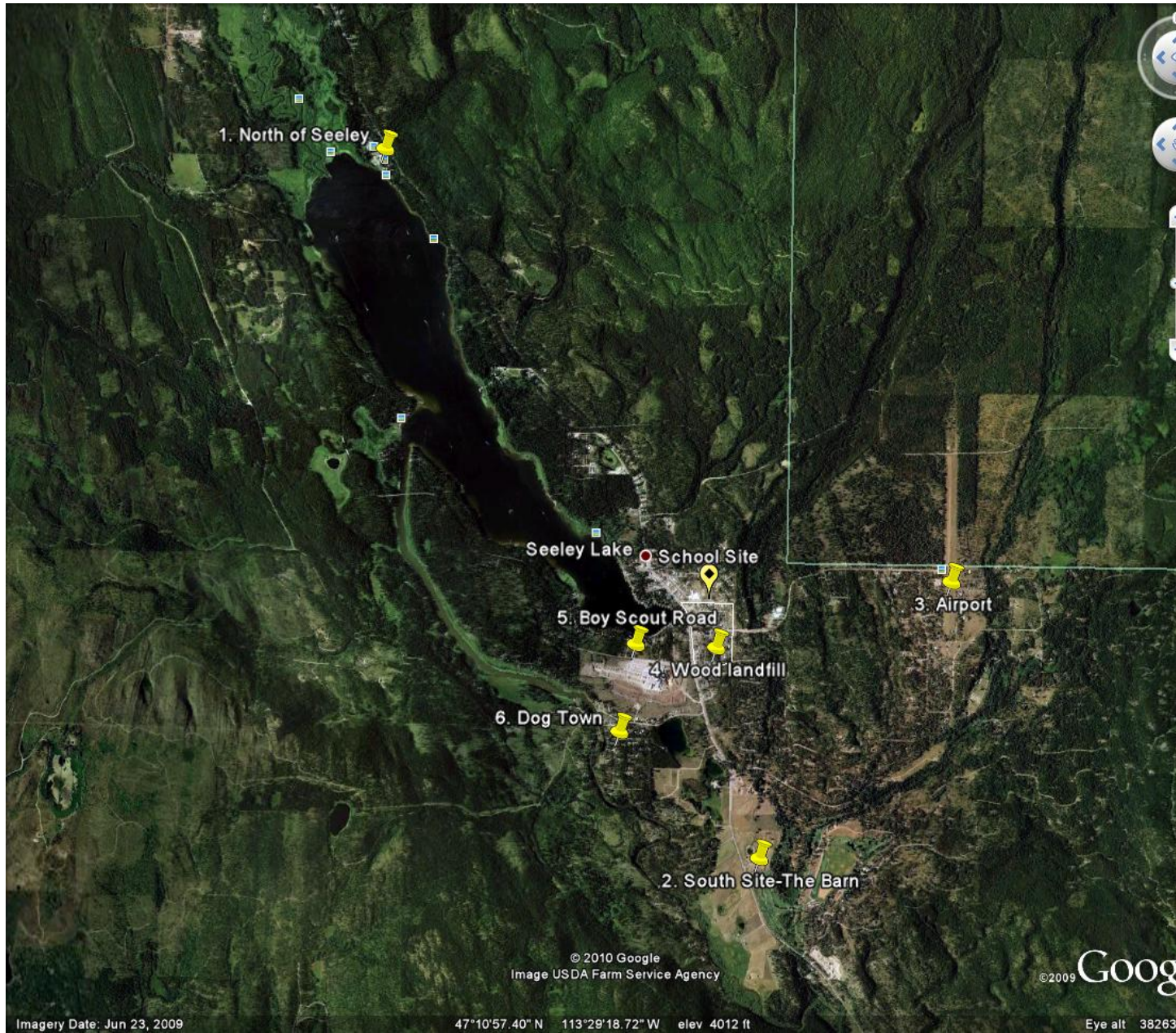
Graph 3. Daily PM_{2.5} Averages for December 3-30, 2010



To reiterate, extensive monitoring and analysis has shown that the combination of strong nightly inversions and heavy woodstove use has resulted in a small community with a large air quality problem. Seeley Lake has the worst measured air quality in the state of Montana. If improvements are not made, Seeley Lake will become a nonattainment area for daily PM_{2.5} standard.

Appendix A

Map of PM_{2.5} Monitoring Sites



3. Experience and Foundation to Exponential Success= A Community Addressing Air Quality with Action

As stated in the previous section, Seeley Lake has the worst measured air quality in the State of Montana - the direct result of inefficient wood stove use and operation. This daunting fact could be reason for apathy, especially in a community with a long history and identity rooted in this traditional heating source. Not in Seeley Lake.

In 2010, the Missoula City-County Health Department (MCCHD) came together with members of the Seeley Lake Community Council (SLCC) and several local businesses, agencies and organizations thus beginning the foundation of Missoula County working with Seeley Lake on wood-burning appliance changeout programs. The groups formed a plan, and started to build partnerships to proactively address their community's air quality. As a result, they were able to secure \$13,500 in funding to implement a small woodstove changeout and education pilot program. The successful Seeley Lake/Missoula County pilot results demonstrated that concerted action and a well thought out program can not only get cleaner technology implemented, but can inform residents about better choices and practices that maintain or improve home heating, save money and improve air quality.

Results of the 2010-2011 Seeley Lake Wood Stove Changeout Pilot Project:

1. 5 efficient, clean wood stoves installed.
2. 4 Community Open Houses – 250-300 attendees.
3. 15 wood fuel shelters built and placed.
4. Deployed “Tarp Your Wood” Drive. Provided tarps and proper installation for target houses in targeted neighborhoods.
5. Provided in-home stove optimization opportunities
6. Implemented “Moisture Monitor Lending Library”. Allowed for residents to borrow monitors to check moisture content of wood.
7. Developed Clean Burning educational pamphlet. Mailed to residents and included in local newspaper
8. Developed and distributed Clean Burning educational door hanger.
9. Wrote and published regular Clean Burning educational column in local newspaper. Column addressed and informed residents of cleaner burning methods, the impact of increased PM_{2.5} levels, results from the air quality saturation study and all air quality updates.
10. Distributed Burn Wise DVD to residents.
11. Hosted accounting consultations with University of Montana accounting students to inform community members about wood stove changeout tax credit options.

The implementation of the pilot provided valuable experience. If awarded the Wood-Burning Appliance Changeout administration and funds, Missoula County, the Seeley Lake community and business leaders, and local, state and federal partners will build on this model and experience for exponential positive action and results in Seeley Lake.

4. Forest Management and Firewood

Forest management activities

The forested community of Seeley Lake is the focal point of a number of forest management initiatives including the Montana Legacy Project, the US Forest Service - Forest Legacy program, and the Collaborative Forest Landscape Restoration program, and is identified by the Montana State Assessment of Forest Resources as a very high priority for protecting values at risk. These initiatives include forest management activities on state, federal and private lands in the watershed that will produce timber, firewood and biomass.

Magnitude of firewood

The DNRC sells an average of 45 firewood permits per year to area residents harvesting from school trust lands, averaging an annual total of 120 cords of firewood, in addition to about 6 million board feet of timber.

Southwestern Crown of the Continent (SW Crown) project, as part of the Collaborative Forest Landscape Restoration Program plans to produce 100-160 million board feet of sawlogs and biomass over the next ten years. As part of the SW Crown project, the Seeley Lake Ranger District has planned the harvest of small diameter trees from 118 acres of forest land in an effort to reduce the hazardous fuel load and risk of uncharacteristic wildfire.

The Nature Conservancy and Trust for Public Lands recently acquired, and are actively managing, more than 310,000 acres of land surrounding the community of Seeley Lake—generating timber and biomass as part of commercial timber harvests and restoration projects.

5. Changeout Plan

Statistics and Numbers

1. 245 households reported heating with wood in the Seeley Lake Census Designated Place according to the 2006-2010 American Community Survey estimates by the U.S. Census Bureau.
2. While no exact number is available, most of the stoves used in the area are older non-EPA certified devices.
3. Based on visual observations done by Missoula City-County Health Department staff, the areas with the greatest PM_{2.5} values (the neighborhoods north and south of the elementary school), have large numbers of stoves with emission opacities of 90% or greater.

The Changeout

The Seeley Lake changeout program would remove non-EPA certified wood stoves in the Seeley Lake Census Designated Place and replace those stoves with:

- EPA certified wood stoves with emissions at or below 3 grams/hour
- EPA certified pellet stoves

Pellet stoves have lower emissions than wood stoves. Therefore, educational information on the benefits of pellet stoves will be part of the outreach program. Some benefits of pellet stoves include ease of loading fuel, thermostatic controls, and cleaner burning rates. While this program will be a proponent or advocate for pellet stoves as the option of choice, Seeley Lake residents will be able to choose pellet or stick stoves with an emission rating outlined above as part of this change out program.

The Goals

1. Replace 90% of the non-EPA stoves certified within 6 blocks of the Elementary School and Dogtown neighborhood south of Pyramid Mountain Lumber
2. Replace a minimum of 95 non-EPA certified stoves in the Seeley Lake Census Designated Place.

Older stoves will be removed as part of this program and will be recycled to prevent their use at a different location. Stoves are rendered permanently inoperable or recycled will be verified, tracked and monitored by Missoula County. It is anticipated that stove recycling will generate revenue. This revenue will be put back into the program and applied towards the required match when recycled.

Projected Results

The Seeley Lake 2011-2012 monthly reports (Appendix B) show that the greatest 24-hour PM_{2.5} concentrations at the School monitoring site are around 70 µg/m³. For an adequate safety margin to protect the 24-hour National Ambient Air Quality Standard of 35 µg/m³, daily PM_{2.5} levels or wood smoke generation should be reduced by more than 64%. This should lower the upper daily concentration of PM_{2.5} to 25 µg/m³.

A “Conventional Woodstove Emission Factor Study” performed by OMNI Environmental Services Inc. (OMNI) found non-EPA certified stoves in the laboratory setting emitted, on average, 21 grams of particulate per hour. Other studies conducted in homes have found non-EPA certified stoves to have emission factors far greater than 21 grams per hour. For instance, the 1998 Klamath Falls, Oregon in-home study found non-EPA certified woodstoves to have particulate emissions between 27-52 grams/hour.

For the Seeley Lake change-out program, only EPA certified woodstoves with emissions at 3 grams/hour or less and EPA certified pellet stoves will be installed. Because pellet stove particulate emissions are almost always lower than woodstoves (the fuel and air ratios are controlled and there is less opportunity for operator error), this analysis will concentrate on wood stove emission comparison. Not all operators maintain their woodstoves or use dry wood as a fuel, so 7.5 grams/hour will be used as the assumed emissions from the replacement woodstoves. This 7.5 grams/hour emission rate is 2.5 times greater than the EPA certification emission rate and should provide a comfortable safety margin.

Using the conservative emission factors of 21.0 grams/hour emissions from existing stoves in Seeley Lake and 7.5 grams/hour emissions for replacement stoves, replacing every woodstove in Seeley Lake with a new EPA Certified woodstove would reduce emissions 64.3%. This would be sufficient to move Seeley Lake into compliance with the 24-hour PM_{2.5} standard. Based on visual observations, the Missoula City-County Health Department staff is confident that many of the existing wood stoves in Seeley emit far more than 21.0 grams of PM_{2.5} per hour. Therefore, a wood stove change out may have a larger impact on PM_{2.5} levels than this conservative analysis indicates.

Appendix B

Map of PM_{2.5} Monitoring Sites

**REPORT ON HIGH PM_{2.5} DAYS
THAT EXCEEDED 80% OF THE NATIONAL AMBIENT STANDARD IN
SEELEY LAKE, MONTANA
FEBRUARY, 2012**

Date: February 1-29, 2012

Event: Exceedances of the PM_{2.5} standard.

Location: Continuous PM_{2.5} monitor (BAM) located in Seeley Lake.

Between February 1, 2012, and February 29, 2012, Seeley Lake exceeded 80% of the 24-hour PM_{2.5} NAAQS a total of 15 times. The 24-hour averages over 80% of the standard ranged from 29 µg/m³ to 57 µg/m³ with an average exceedance of 39 µg/m³.

Date	24-hour PM_{2.5} average (µg/m³)
2/1/2012	48
2/2/2012	41
2/3/2012	31
2/4/2012	57
2/5/2012	30
2/8/2012	43
2/11/2012	29
2/12/2012	44
2/13/2012	44
2/15/2012	33
2/16/2012	30
2/18/2012	32
2/27/2012	30
2/28/2012	57
2/29/2012	35

**REPORT ON HIGH PM_{2.5} DAYS
THAT EXCEEDED 80% OF THE NATIONAL AMBIENT STANDARD IN
SEELEY LAKE, MONTANA
JANUARY, 2012**

Date: January 1-31, 2012

Event: Exceedances of the PM_{2.5} standard.

Location: Continuous PM_{2.5} monitor (BAM) located in Seeley Lake.

Between January 1, 2012, and January 31, 2012, Seeley Lake exceeded 80% of the 24-hour PM_{2.5} NAAQS a total of 20 times. The 24-hour averages over 80% of the standard ranged from 28 µg/m³ to 69 µg/m³ with an average exceedance of 43 µg/m³.

Date	24-hour PM _{2.5} average (µg/m ³)
1/1/2012	31
1/2/2012	56
1/3/2012	28
1/4/2012	62
1/5/2012	35
1/6/2012	30
1/7/2012	32
1/8/2012	34
1/9/2012	44
1/11/2012	42
1/12/2012	49
1/13/2012	69
1/14/2012	50
1/20/2012	48
1/21/2012	31
1/23/2012	37
1/24/2012	67
1/28/2012	44
1/29/2012	31
1/30/2012	36

**REPORT ON HIGH PM_{2.5} DAYS
THAT EXCEEDED 80% OF THE NATIONAL AMBIENT STANDARD IN
SEELEY LAKE, MONTANA
NOVEMBER, 2011**

Date: November 1-30, 2011

Event: Exceedances of the PM_{2.5} standard.

Location: Continuous PM_{2.5} monitor (BAM) located in Seeley Lake.

Between November 1, 2011, and November 30, 2011, Seeley Lake exceeded 80% of the 24-hour PM_{2.5} NAAQS a total of 18 times. The 24-hour averages over 80% of the standard ranged from 30 µg/m³ to 49 µg/m³ with an average exceedance of 34 µg/m³.

Date	24-hour PM_{2.5} average (µg/m³)
11/2/2011	30
11/3/2011	40
11/4/2011	37
11/8/2011	35
11/9/2011	35
11/10/2011	31
11/11/2011	41
11/16/2011	41
11/17/2011	41
11/18/2011	41
11/20/2011	40
11/21/2011	47
11/22/2011	36
11/23/2011	37
11/26/2011	36
11/27/2011	38
11/28/2011	35
11/29/2011	49

**REPORT ON HIGH PM_{2.5} DAYS
THAT EXCEEDED 80% OF THE NATIONAL AMBIENT STANDARD IN
SEELEY LAKE, MONTANA
DECEMBER, 2011**

Date: December 1-31, 2011

Event: Exceedances of the PM_{2.5} standard.

Location: Continuous PM_{2.5} monitor (BAM) located in Seeley Lake.

Between December 1, 2011, and December 31, 2011, Seeley Lake exceeded 80% of the 24-hour PM_{2.5} NAAQS a total of 25 times. The 24-hour averages over 80% of the standard ranged from 29 µg/m³ to 68 µg/m³ with an average exceedance of 47 µg/m³.

Date	24-hour PM_{2.5} average (µg/m³)
12/1/2011	44
12/3/2011	29
12/5/2011	33
12/6/2011	54
12/7/2011	60
12/8/2011	42
12/9/2011	54
12/10/2011	54
12/11/2011	60
12/12/2011	58
12/14/2011	35
12/15/2011	45
12/16/2011	50
12/17/2011	59
12/18/2011	48
12/19/2011	36
12/20/2011	48
12/21/2011	30
12/22/2011	68
12/23/2011	64
12/24/2011	59
12/25/2011	37
12/26/2011	34
12/27/2011	35
12/30/2011	35

6. Recruitment

Missoula County has proven experience implementing federal, state and local grant-funded programs often targeted to serve low-income populations or with income restrictions, that require the recruitment and screening of participants. They include the Community Development Block Grant (CDBG), HOME, Neighborhood Stabilization, Continuum of Care, First Time Homebuyers Down Payment, Interim Assistance, and Revolving Sewer Loan Programs. As administrator of the wood-burning appliance changeout program, Missoula County will apply that experience and expertise while following established procedures in Seeley Lake.

To plan for this proposal and program deployment, Missoula County has led conversations with local, state and federal leaders about the best method to inform and recruit wood stove changeout participants in Seeley Lake. The preliminary recruitment plan is primarily a mix of the County's successful pilot wood stove education and changeout efforts in Seeley Lake in 2010-2011, and the City of Missoula's grant funded residential energy efficiency program, Green Blocks, which enlisted 300 Missoula households to undergo home energy audits and install conservation measures. The Missoula County Grants Administrator assigned to coordinate the wood-burning appliance changeout program in Seeley Lake if Missoula County is chosen, Chase Jones, was the Green Blocks lead. Coupled with the media and marketing plan discussed in the next section of this proposal, the creative recruitment model is rooted in neighbor-to-neighbor interaction and includes:

Step 1: Engaging Block Captains

Between four and 10 community members will volunteer as neighborhood "captains." The captains are generally knowledgeable of the issue and solutions, trusted by the community and neighbors, and are motivated to become the point person for both Missoula County and their neighbors.

Step 2: Training Block Captains

Block Captains will next meet with staff from the Missoula City-County Health Department (MCCHD) to receive detailed training on stove changeout program structure, details and application process (including income qualification levels). In addition to MCCHD's efforts, participating stove dealers and expert partners will provide training on the air quality and efficiency benefits and details of the new stoves.

Step 3: Block Captains Enlist Neighbors

Block Captains will be the initial contact persons and primary recruiters for members of the community, specifically their closest neighbors. They will approach neighbors with program details and benefits, education materials, and application materials. MCCHD staff, stove dealers, and partners will be available to respond to requests as informed by Block Captain. The Block Captains will then relay information to neighbors and collect application materials.

Step 4: Media and Community Events

While this outreach program is in progress, Missoula County will write press releases and solicit

and place articles and advertisements in the local newspaper. In addition, MCCHD will attend appropriate events with partners to promote the changeout program.

Step 5: Utilize Partner Networks

In preparation of this grant proposal, strategic partnerships, discussed further in the Partners section of this proposal, were solidified or formed to build an effective network for success. Partners have committed to use all their networks and communication and outreach tools in the implementation of the wood-appliance changeout program proposed by Missoula County for Seeley Lake, Montana.

Step 6: Installation and Follow Up

To complete the outreach cycle, once a changeout participant has applied and been approved, Missoula County will deploy qualified stove installers who will not only install the stoves, but also train the owners on proper and efficient stove operation. Missoula City-County Health Department staff will follow up with progress visits post-installation as needed and on a schedule to be determined.

To summarize the proposed outreach program:

- Respected members of the community will act as initial liaisons or Block Captains. Trained stove experts and Missoula City-County Health Department staff will be readily accessible to the Captains for support.
- Media announcements and articles will be solicited and placed concurrently with the initial neighborhood Captains' and program outreach efforts.
- Missoula County, Block Captains, and partners will attend local meetings and events to provide program information and presentations.
- Qualified stove installers will install the stoves and instruct the owners on proper stove operation
- Missoula City-County Health Department staff will be available for any follow visits as needed

7. Media and Marketing – Telling The Story

As grant administrator, Missoula County proposes to implement the following media and marketing campaign to recruit participants and to tell the story of the proposed wood-burning appliance changeout program. Missoula County will coordinate implementation of each tactic internally and with each partner with recognition of strength, efficiency and effectiveness.

Missoula County has established contacts with local and statewide print, television, radio, and electronic media outlets. Missoula County's various grant programs and activities are featured in these outlets on a regular basis.

In addition, as mentioned previously, Missoula County has established strategic partnerships that provide access to a wide, effective network for delivering information and the story of the proposed changeout program. Partners have committed to use all networks and communication and outreach tools in the implementation wood-appliance changeout program as able and appropriate. Committed partners at time of proposal include the Seeley Lake Community Council (local), Montana Department of Natural Resources and Conservation (DNRC) (statewide), USDA Forest Service Seeley Lake Ranger District (local, regional and national), the Forest Business Network (national), and the Pellet Fuels Institute (national). If awarded the grant, Missoula County will seek other media, marketing and outreach partners as necessary.

Media and Marketing Plan

- Create and distribute an educational suite of printed materials. May include fact sheets, brochures, pamphlets, case studies, door hangers, etc. Materials will be distributed in Seeley Lake and will be made available through all partner offices and channels to respective audiences.
- Write and distribute Press Releases and Public Service Announcements to gain earned media.
- Cultivate relationships to gain print and electronic Feature stories.
- Solicit donations to secure or purchase advertising space strategic ad placement.
- Create content and publish to internal and partner Web Sites.
- Utilize internal and partner newsletters.
- Post to internal and partner email trees, listervs, and social media outlets.
- Maintain presence at local and community events.
- Actively pursue presentation opportunities at partner, agency, industry and University events, conferences, and symposiums.
- Integrate message and story into established and regular internal and partner programs and outreach activities.
- Engage residents in the original social media, talking neighbor-to-neighbor, with Block Captain model.

- Contract with a professional firm to further develop and support the above proposed media and marketing plan to effectively "tell the story" on a local, state and national level. Deliverables will include creation and production of professional collateral materials, a final report for wide, public distribution, and plan execution support and services.

A Story and Model for State and National Coverage and Replication

Missoula County feels that the story of this program “has legs” and the momentum created in Seeley Lake and could act as a springboard for changeouts in other targeted airsheds around Montana, and possibly in other communities across the county. Telling the story on a local, statewide, and national level as outlined in this plan will effectively leverage Forest Service seed grant funds for model replication and adaptation to achieve exponential results and positive community change. Missoula County, with its partners, has the capacity to successfully tell this story.

9. Monitoring and Evaluation

The Missoula City-County Health Department will track the exact location and addresses of each stove replaced and keep this information available in a database. The Office of Planning and Grants will keep and track all financial records associated with this program, including money earned from metal recycling.

The Missoula City-County Health Department will place a major emphasis on those areas near the elementary school and in the Dogtown neighborhood south of Pyramid Mountain Lumber. The permanent PM_{2.5} beta attenuated monitor (BAM) located at the Seeley Lake Elementary School will be used to monitor and evaluate the success of the change out program.

Visual opacity readings by Missoula City-County Health Department staff will also be used to evaluate the success of the program. As stoves are changed out, staff will monitor opacity on the changed out stoves and educate participants on how to use their appliances efficiently and cleanly. Participants will also be encouraged to talk directly with the dealer who supplied or installed their wood burning appliance.

In the planning and implementation of the Changeout Program, Missoula County and partners will have meetings monthly or as needed to monitor and evaluate the progress of the Program and determine if there is need to modify our approaches in order to achieve greater success.

10. Partners

Missoula County has forged partnerships with the following broad coalition of organizations, agencies, and businesses to build and prove the capacity needed to successfully administer a wood-burning appliance changeout program.

Seeley Lake Community Council

The purpose of the Seeley Lake Community Council (SLCC) is to advance and promote the interests and welfare of the citizens of the Seeley Lake community in Missoula County, Montana. Specifically, the Community Council acts as a liaison between the citizens of the Seeley Lake community and the Missoula County Commissioners. It functions to provide all types of information deemed useful, beneficial, and helpful to the Commissioners in making decisions that affect the Seeley Lake community. It also keeps the Seeley Lake community informed about issues being considered by the Commissioners that might have an impact on the community. The Community Council provides leadership and support to the community's efforts to ensure orderly growth and development, and serves as a channel of communications with local, County, State, and Federal government officials and agencies regarding matters of concern to the future of the Seeley Lake community.

SLCC was the main implementation partner with Missoula County in the successful 2010-2011 wood stove changeout and education pilot project. They are on board to not only continue that role, but also build on that experience with Missoula County, with this grant, to expand and improve on the initial pilot.

Montana Department of Natural Resources and Conservation (DNRC)

As part of USDA Forest Service's Fuels for Schools Initiative, the Montana Department of Natural Resources and Conservation (DNRC) has provided both financial and technical assistance to the successful development of 14 smaller-scale wood biomass energy projects in Montana while working to build both infrastructure and community support for clean wood energy development at various scales—from residential to public facilities and industrial scales.

The DNRC has recently begun discussions with the state Department of Environmental Quality, City-County health departments, and national associations and organizations about opportunities for education and incentive programs for clean residential wood burning in various communities in Montana. DNRC is interested to assist in this effort where we can in hopes of emulating the success of these programs in other target airsheds across Montana.

DNRC will support this project in the following ways:

- Provide information on the DNRC website about residential wood heat, including a link to any specific pages about the Seeley Lake Stove Changeout program,
- Distribute outreach materials to local citizens via our local service forester who consults with homeowners in the Seeley Lake community about managing their forestlands,
- Display outreach materials at the local DNRC unit office where people purchase firewood permits for state lands,

- Engage partnering forestry organizations to conduct outreach and recruitment of Changeout participants by leveraging existing venues and relationships with area family forest landowners with active forest management plans, and
- Coordinate program assistance from forestry agencies and organizations as needed.

USDA Forest Service Seeley Lake Ranger District

The Seeley lake Ranger District features a full range of resource management activities including an active fire management program. The fire program ranges from managing fuels adjacent to the community to allowing fire to function naturally under an approved Wildland Fire Management Plan for the Scapegoat Wilderness Area.

The Seeley Lake Ranger District and the two adjoining ranger districts are planning to treat approximately 73,000 acres related to fuel reduction and restoring forest health over the next ten years. In addition, the Seeley Lake Ranger District sells approximately 700 cords of firewood annually.

The Seeley Lake Ranger district has pledged support of the project. A letter of support with more details is attached.

Forest Business Partners Network

Forest Business Network LLC (FBN) is a Montana limited liability company that is headquartered in Missoula, Montana.

The company engages in four activities:

1. Running a forest business consultancy.
2. Staging conferences and other events for those in forest-related businesses and professions.
3. Operating a timber industry news aggregation website, entitled ForestBusinessNetwork.com, formerly TimberBuySell.com.
4. Publishing an email newsletter for timber industry news, entitled Forest Business Newsletter, formerly Smallwood News.

The company's website and newsletter are integral parts of the consultancy, inasmuch as they supply it with a constant flow of timely information. In a similar manner, the event-staging activity generates exactly the kind of relationships and connections from which the consultancy's clients and partners can profit.

FBN President, Craig Rawlings engages in extensive outreach to forest products businesses in his capacity as the creator and manager of ForestBusinessNetwork.com. This website is in effect, a "centralized, accessible source of technical and marketing information" of the type that the forest products industry is seeking.

Mr. Rawlings' outreach is extended by the fact that he created and currently edits Forest Business News, an email newsletter that has over 10,000 subscribers and is considered the authoritative clearinghouse for regional and national forest-to-market information. Missoula County has met with Mr. Rawlings, and FBN has committed to partner and support Missoula County as the administrator of the proposed wood-appliance changeout program with technical, communications, outreach, and networking expertise.

Axmen

Axmen has been the leader in the stove and fireplace industry in Western Montana for over 37 years. Their installation department has nearly 30 years experience in the installation and service of stoves and fireplaces. Axmen supported the 2010-2011 Seeley Lake changeout pilot with technical, supply, installation and educational support and has agreed to do so for this grant program proposal if awarded.

Pellet Fuels Institute

The Pellet Fuels Institute (PFI) is a North American trade association promoting energy independence through the efficient use of clean, renewable, densified biomass fuel.

The organization exists to:

- Create and represent the ultimate expertise in the residential and commercial densified biomass fuel industry and technology;
- Coordinate and integrate the needs of raw material sources, equipment suppliers and consultants, fuel producers, appliance manufacturers and distribution entities;
- Educate, disseminate and promote the advantages and benefits of densified biomass fuel technology;
- Establish and maintain densified biomass fuel standards, and;
- Provide information and support to facilitate the safety, efficiency, regulatory standards, emissions standards and test procedures specifically designed for densified biomass fuel technology.

PFI's membership is composed of manufacturers of densified biomass fuel, suppliers to the densified biomass industry and associate members, such as non-governmental organizations, universities and government agencies.

PFI has agreed to partner with Missoula County to support the proposed changeout program. Specifically, they can help organize industry support for this effort, including helping local retailers approach their supplier about special pricing and help with manufacturers' incentives for dealers and possible direct rebates to stove purchasers.

11. Administration Procedures

The Missoula County Office of Planning and Grants (OPG) will implement and administer the grant for Glacierland RC&D Council. OPG provides leadership in the community for most social service systems in Missoula County, working to identify human service needs, facilitating planning processes to address them, securing and leveraging resources, providing grants administration and plan for program sustainability. OPG also administers federal, state and local funds to create affordable housing and job opportunities for lower income individuals, and assists in the development of infrastructure/public facility projects.

OPG Grants Administrator, Chase Jones, is the Project Director and will administer the grant and oversee project work. Success will be monitored by the Project Director and measured according to the achievement of project goals. Mr. Jones will ensure compliance with the reporting requirements and all special conditions of Glacierland RC&D. Mr. Jones is currently responsible for administering approximately \$1,000,000 in Department of Energy, Energy Efficiency and Conservation Block Grant and leveraged funds for both Missoula County and the City of Missoula. Project responsibilities include procurement, contracting, budgeting, environmental compliance, financial tracking and analysis, quality assurance, recordkeeping and reporting. Projects under EECBG include Energy Savings Performance Contracting, Energy Efficiency and Conservation building, lighting and HVAC retrofits, Fleet optimization, Renewable Energy installations, and will include the establishment of an Energy Efficiency Revolving Loan Fund. Finally, as part of EECBG, Mr. Jones was the Project Director for Missoula and partner Northwestern Energy's residential energy efficiency pilot program, Green Blocks. Green Blocks entailed citywide participant recruitment, energy efficiency media and public outreach efforts, and coordination of residential energy audits, resulting retrofits, and education in 300 Missoula households.

The Project Director receives support from the Principal Grants Administrator, Cindy Wulfekuhle, who has 30 years of grant management experience. All financial transactions will be initiated by Mr. Jones, reviewed and approved for payment by Ms. Wulfekuhle, entered into Missoula County's financial program by the OPG Office Manager, processed for payment by the Missoula County Finance Office with review by the County Auditor and ultimate approval by the Board of County Commissioners. If awarded funds, OPG staff will work with the County Attorney's Office to develop a contract with Glacierland RC&D, and with the County Chief Financial Officer to amend the County's budget to include Glacierland RC&D funds and establish revenue and expenditures codes specific to this award.

The Office of Planning and Grants has a long history of working with the community of Seeley Lake and has established relationships that will be beneficial to identifying and working with residents of the community when implementing the wood stove change out program.

