

Successes Managing Wood Smoke

in ID, OR, WA

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Overview

- Wood Smoke Management in Region 10
 - Washington: Tacoma
 - Oregon: Klamath Falls, Lakeview, Oakridge
 - Idaho: West Silver Valley
- Review
 - Area overview
 - Control strategies
 - Reasons for success

Tacoma, WA

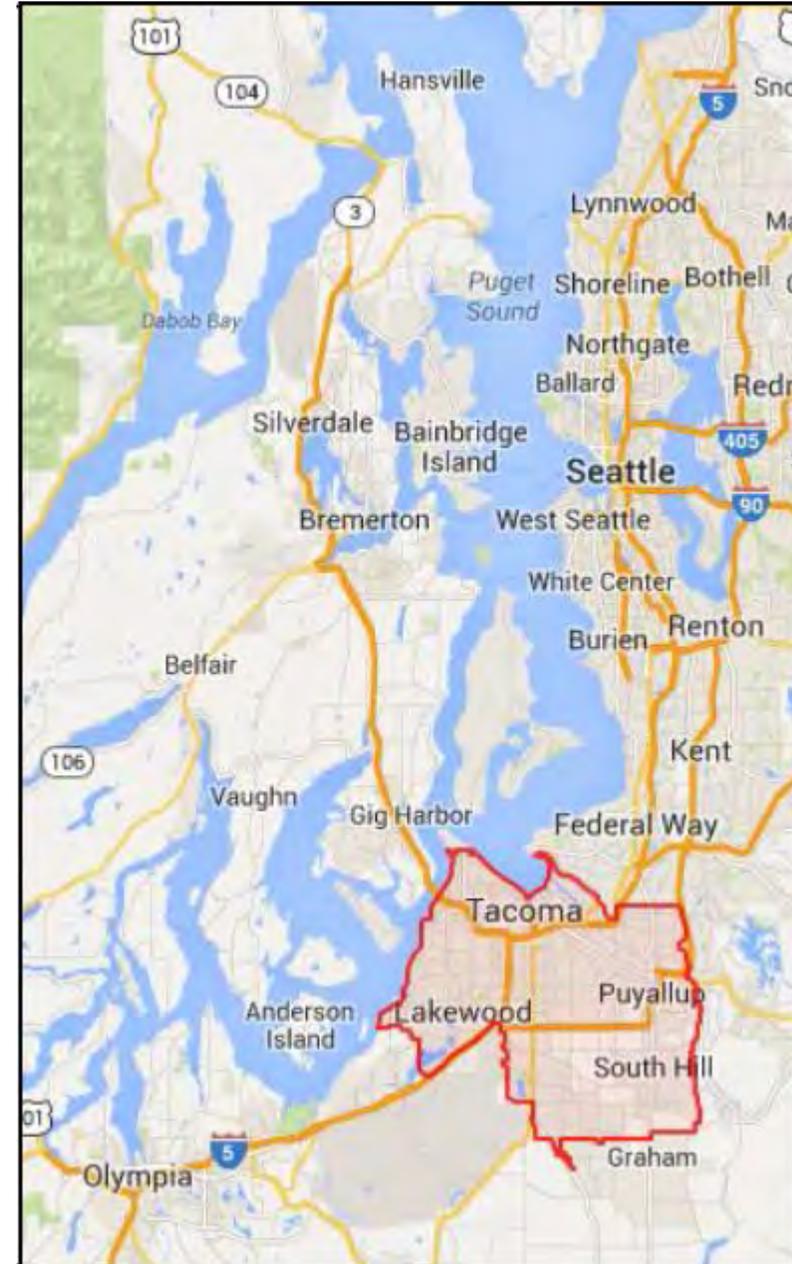
- **Overview:**

- ~200,000 people
- Complex area: Port of Tacoma, I-5 corridor, Tribal Reservation, Joint Base Lewis-McChord. One major point source, multiple minor sources.

- **Wood Smoke driven PM_{2.5}**

- ~24,000 uncertified stoves

Attainment area in maintenance



Tacoma, WA

Control Strategies

1 - Collaboration

- Implementing Agency: Puget Sound Clean Air Agency
- State Agency: WA Department of Ecology
- Clean Air Task Force:
 - Stakeholder group (citizens, businesses, realtors, stove retailers, health professional, Port of Tacoma, Joint Base Lewis-McChord, utilities, regulators) + independent facilitator
 - Meetings public: 12 meetings within 8 month period
 - <http://www.cleanairpiercecouny.org/taskforce/index.aspx>

Tacoma, WA

2 – Improve Curtailment Program

- Increase enforcement and patrols.
 - Patrols of 2-3 teams, up to 40. Partner with local governments through agreements/contracts, trained partners, and paid for time. PSCAA inspectors trained in Method 9. Hired inspectors trained to identify visible emissions.
 - Results over 2 winters: ~2,700 potential violations, ~1,700 NOVs, ~1,000 civil penalties
- Patrol during burning times. Purchase camera capable of low light photography (high ISO with aperture and shutter speed functionality + tripod).
- Exemptions for No Other Adequate Source of Heat.
- No economic exemptions. PSCAA change out program along with the existence of other government and utility programs provide for full or subsidized changeout.

Tacoma, WA

3 - Woodstove Changeouts

- Enhance program with incentives include full replacement for income qualified, \$1500 subsidy for others, and bounty program for replacement (\$350 for self removal, \$200 for paid removal).
- Prohibition on the use of Uncertified woodstoves in nonattainment/maintenance areas via state rule WAC 173-433-155. [WA Solid Fuel Burning Devices rules.](#)

4 - Outreach

- Increase, diversify, and refresh approach to communications
- New website, Paid Advertisement, Earned Media, Postcards, Billboards, Community Outreach, Partner Engagement, Social Media and Technology.
- Compliance assistance and NOV's also serve as communication.

Tacoma, WA

What Worked Well?

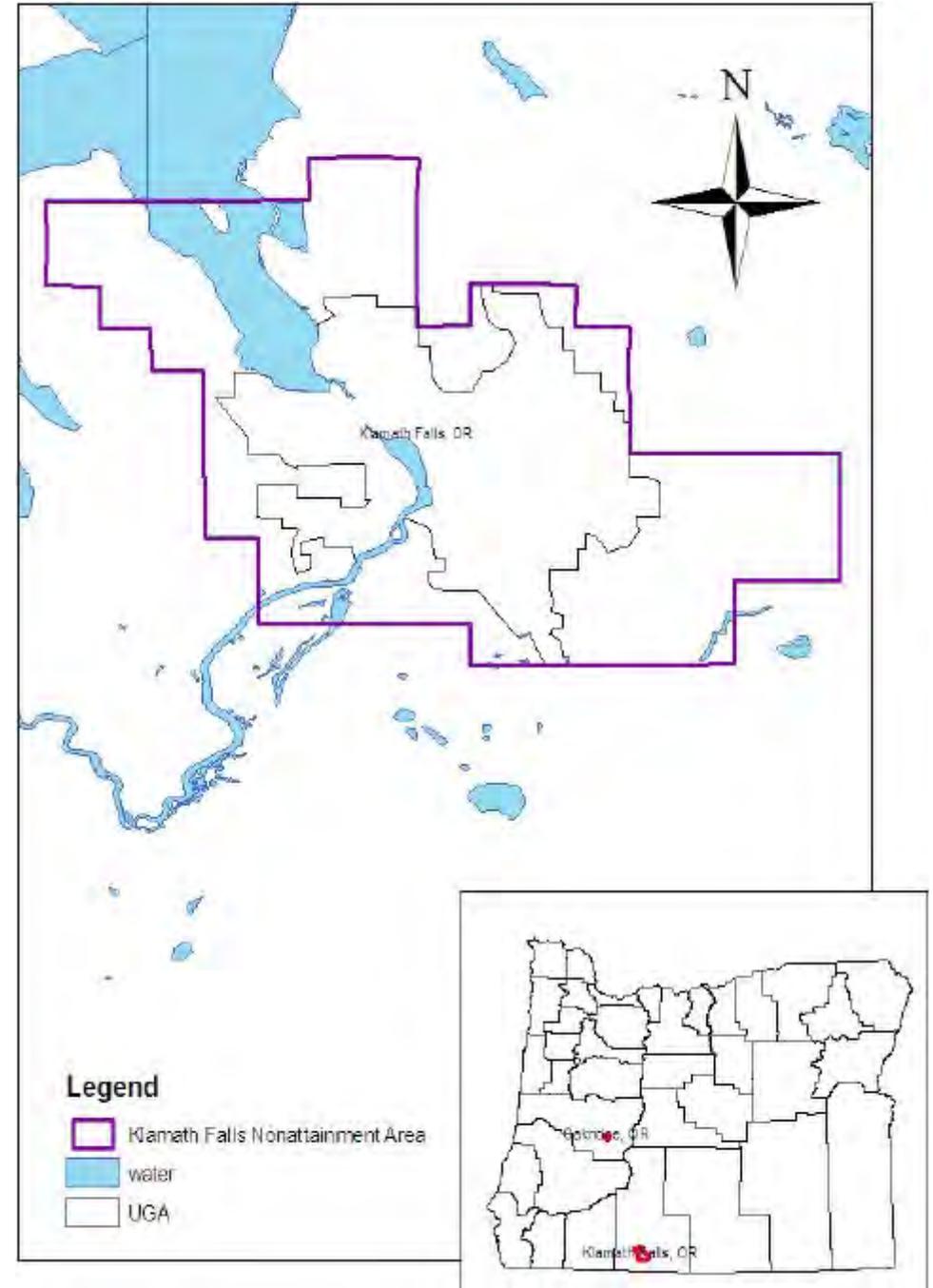
- A High Level of Community/Industry Involvement Regarding Wood Smoke Reduction Strategies
- A Strong Commitment to Enforcement & Implementation Balanced with the Wood Stove Change-out Program
- Active Political Leadership at the State and Local Level

Klamath Falls, OR

- **Overview:**

- ~48,000 people
 - South Central Oregon
 - ~4 Major point sources include cogenerations plant and wood product facilities.
-
- **Wood Smoke driven PM_{2.5}**

Attaining the standard BUT not redesignated to *Attainment area*



Klamath Falls, OR

Control Strategies

1 – Local Coordination

- Implementing Agencies:

Klamath County, Environmental Health

Klamath County Commissioners

South Central Oregon Economic Development District (SCOEDD)

- State Agency:

Oregon Department of Environmental Quality

- Klamath Falls Advisory Committee: Health Manager, Physician, Fire Marshall, Chimney Hearth Specialist, former City Manager, former Forest Service, smoke management specialist, environmental engineer, etc.

<http://www.deq.state.or.us/aq/planning/docs/kfalls/A-16Combined.pdf>

Klamath Falls, OR

2 - Curtailment Program

- Active enforcement through Environmental Health.
- Method 9 used for enforcing opacity rule on green days. Visible emissions read on no burn days.
- Most effective when fully supported by County Commissioners
- Partial funding from ODEQ and partial funding from Klamath County for code enforcement.
- Attainment plan was developed by a diverse advisory group.
- Compliance assistance component of enforcement with diversion opportunities to the \$725 fine.

Klamath Falls, OR

3 - Woodstove Changeout program

- The area received \$750,000 to replace uncertified woodstoves along with providing electrical upgrades and home weatherization.
- SCOED prioritized cleaner sources of home heating for the first phase of replacements.
- The program replaced 113 woodstoves with alternative forms of home heating including gas furnaces, gas stoves, gas inserts, heat pumps, pellet stoves, and pellet inserts.

Klamath Falls, OR

What Worked Well?

- Eventual Leadership from Commissioners
- Involvement of SCOEDD
- Local Commitment to Enforcement

Oregon Overall

What Worked Well?

- **Involving the Business Community**
 - Chamber of Commerce strongly supported enforcement and implementation.
 - Economic development personnel understood the long term economic implications.
 - Businesses talked to their employees about the importance of following the curtailment program.
- **Commitment to Enforcement and Implementation.** With many areas in south central Oregon dealing with the same weather and inversions, the areas that were actively enforcing/implementing had lower values consistently.
- **Political Buy In / Community Involvement.** Ensure that the local officials and community are aware of the importance of following the curtailment program and burning as clean as possible.

Lakeview, OR

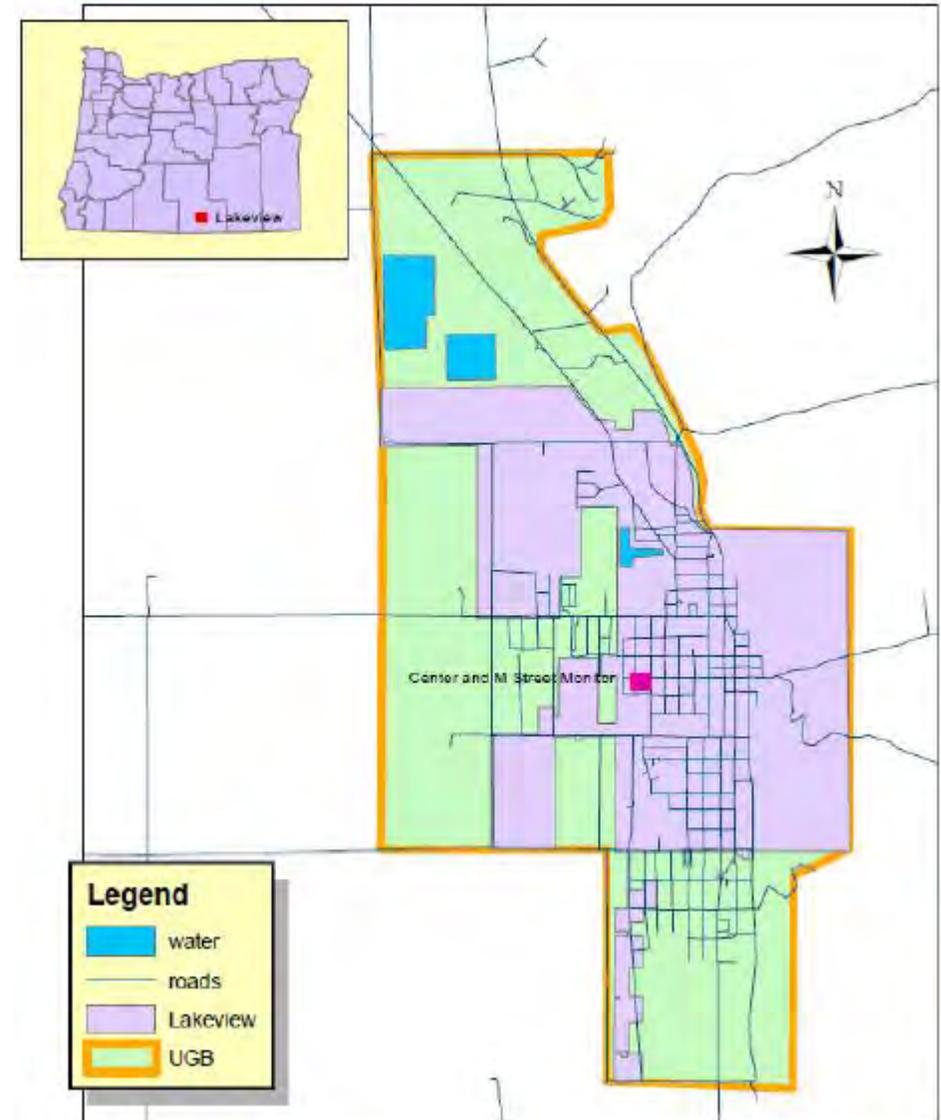
- **Overview:**

- ~2,300 people
- Industry related to forestry products, with potential for a biofuel facility.
- Strong interest in renewable energy.

- Neighbor to Klamath Falls
- PM Advance area

- Voluntarily addressing **Wood Smoke driven PM_{2.5}**

Attainment area BUT **Attaining the standard.**



Lakeview, OR

Control Strategies

1 – Local Coordination

- Implementing

Agencies:

City of Lakeview

Lake County Commissioners

South Central Oregon Economic Development District (SCOEDD)

- State Agency:

Oregon Department of Environmental Quality

- Lakeview / Lake County Advisory Committee;

<http://www.deq.state.or.us/aq/LCLVadvisory/docs/LakeviewLakeCoAdvisory.pdf>

Lakeview, OR

2 - Curtailment Program

- Participated in PM Advance. Not formally designated. Passed a mandatory curtailment program in 2014 and have improved implementation of the program each year.
- Program implemented consistently by the City Manager and City Planner, both of whom live in town and are familiar with the residents.
- Their connection with the community helps to improve the efficacy of the program.
- Enforcement only able to read visible emissions.

Lakeview, OR

3 - Woodstove Changeout program

- The area received \$750,000 to replace uncertified woodstoves along with providing electrical upgrades and home weatherization.
- Run by SCOEDD with initial replacement focus on alternative fuels.
- The program replaced 69 woodstoves with alternative forms of home heating including hybrid woodstoves, hybrid inserts, propane inserts, propane stoves, propane furnace, heat pump, mini split, pellet stove, pellet insert, and electric furnaces.

Lakeview, OR

What Worked Well?

- Proactive Involvement of Local Officials and Economic Development interests
- Local Community Implementing and Enforcing

Oakridge, OR

- **Overview:**

- ~3,200 people
- No major sources
- Economically working to restart with Mountain Biking focus.
- Wood Smoke driven PM_{2.5}

NonAttainment area BUT **Attaining the standard.**



Oakridge, OR

Control Strategies

1 – Local Leadership

- Implementing

Agencies:

Lane Regional Air Protection Agency

City of Oakridge, Mayor

Oakridge Police Department. Code Enforcer

- State Agency:

Oregon Department of Environmental Quality

- Unofficial Advisory Group:

Mayor, City of Oakridge, LRAPA, Local Utility.

Oakridge, OR

2- Curtailment Program

- Hire City Code Enforcer. Actively patrol during periods of poor air quality. Joint patrols between Code Enforcer and LRAPA enforcement personnel. Both trained in Method 9 and able to identify visible emissions.
- Curtailment ordinance updated to include triggers for calling yellow and red advisories, setting wood moisture content at 20%, lowering opacity limits to 20%, and more stringent exemption process (economic and sole source) that requires an in house visit to confirm sole source and evaluate weatherization and compatibility with their ductless heat pump program.

Oakridge, OR

3 - Culture Change

- Diversion program. Fines for \$500 – or - \$100, watch proper burning video and take test.
- Heat pump alternative. Allow for installment of heat pumps without requiring wood stove removal.
- Annually increase enforcement curtailment program stringency.

Oakridge, OR

What Worked Well?

- Strong Leadership from City of Oakridge Mayor
- A Strong Commitment to Enforcement
- Program Driven Locally

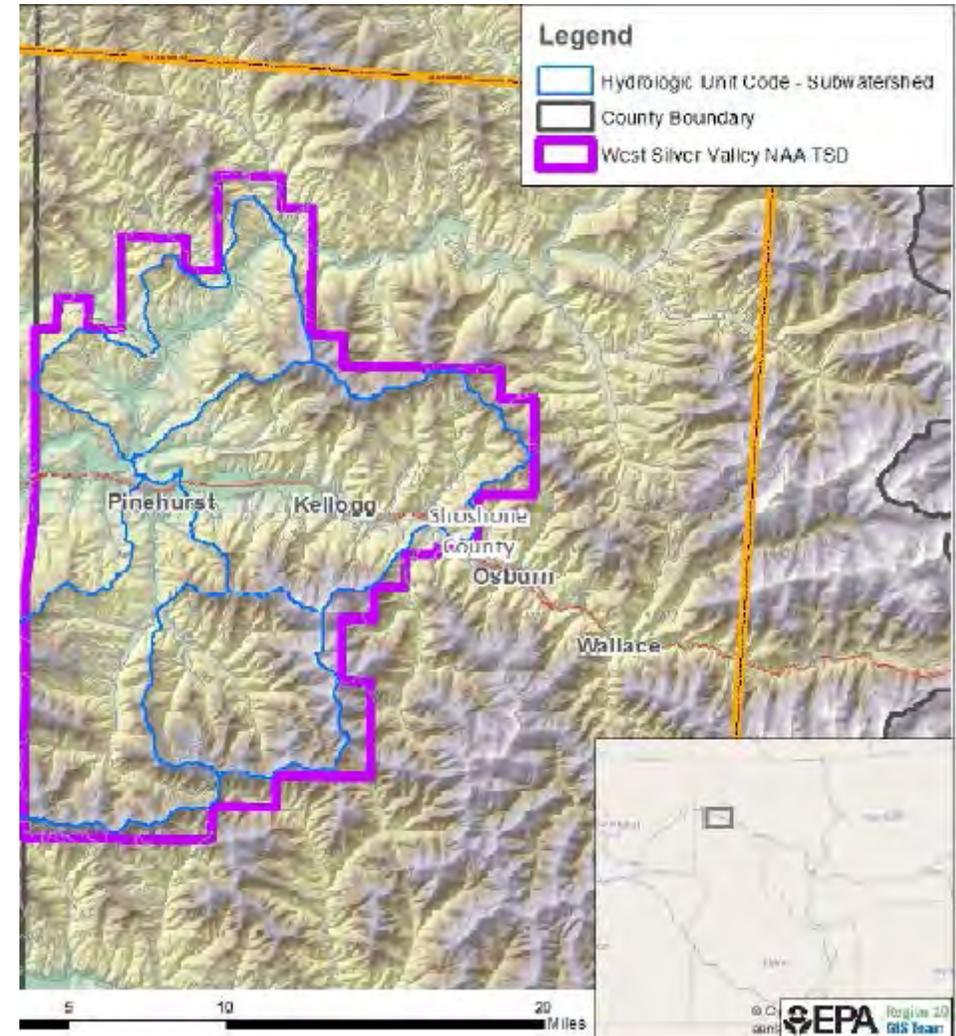
West Silver Valley, ID

- **Overview:**

- ~7,500 people

- **Wood Smoke driven PM_{2.5}**

Nonattainment Area BUT currently attaining the PM_{2.5} annual standard



West Silver Valley, ID

Control Strategies

1 – Local Coordination

- Implementing

Agencies:

State Office, Idaho Department of Environmental Quality (IDEQ)

Regional Coeur d'Alene Office, IDEQ

- West Silver Valley Citizens Advisory Committee

<https://deq.idaho.gov/regional-offices-issues/coeur-dalene/air-quality-west-silver-valley/>

West Silver Valley, ID

2 - Targeted Air Shed grant

- Residential Wood Combustion
 - Replace ~185 uncertified woodstoves and provide in home assessments and proper wood burning training.
 - Provide for emergency fire logs.
 - Build woodsheds to promote proper wood seasoning.
 - Weatherization of ~20 homes.
- Reduce open burning through debris removal and chipping program.
- Improve outreach and education on wood smoke and open burning.

West Silver Valley, ID

What Worked Well?

- Targeted Air Shed Grant
- Community Advisory Group

Low Cost, Low Effort Controls

- Dry Wood = Fewer Emissions (and Less Wasted Energy/Wood to Burn off moisture)
- Burning Hot = Fewer Emissions
- Get Reacquainted with your stove to Optimize Operation
- Re-Insulate / Weatherize Homes