

Working together for clean air



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Clean Air Agency
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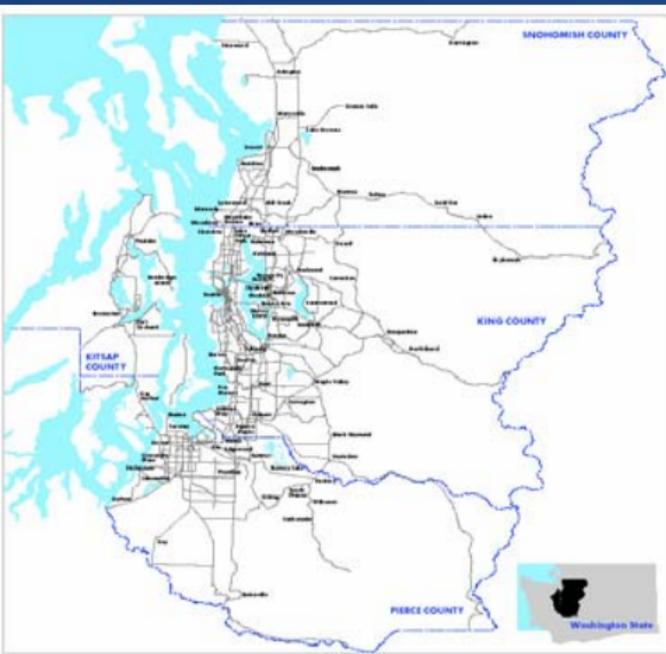
Helping a Rural Community Tackle its Wood Smoke

Amy Fowler
Puget Sound Clean Air Agency

March 2006



About us



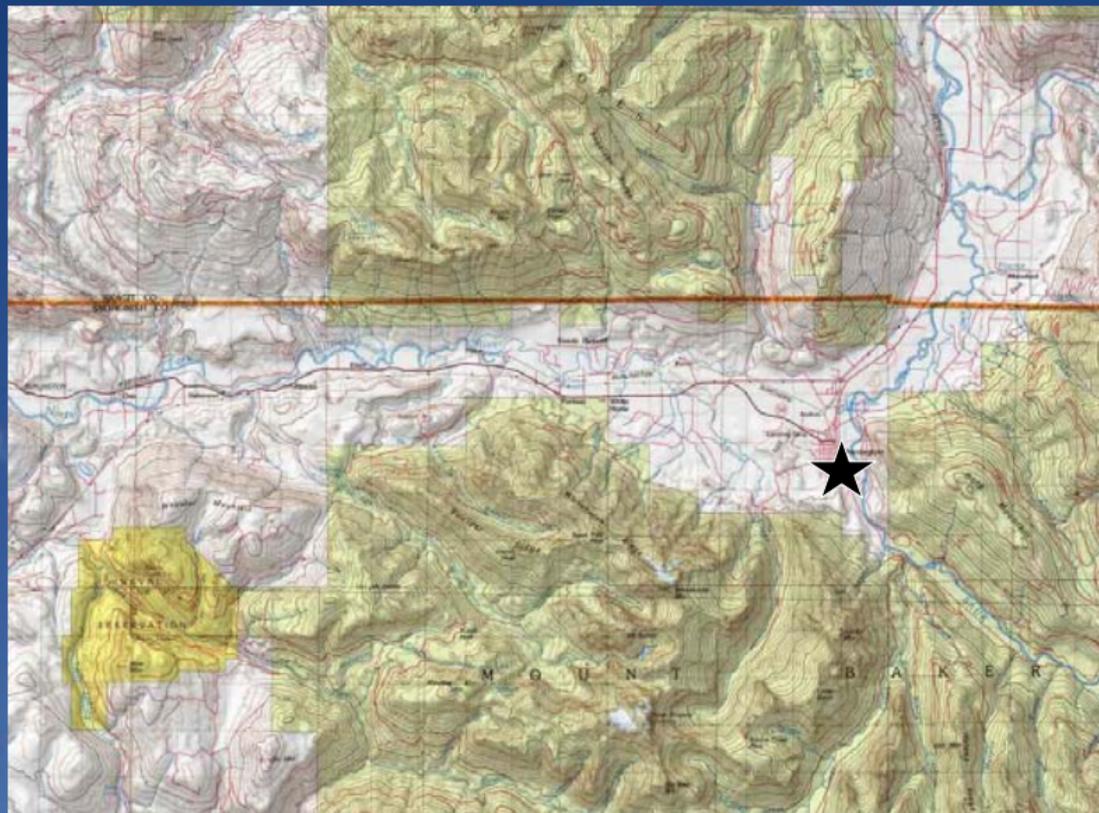
A0F32A © Alamy Images

About Darrington, Washington

- Nestled in the foothills of the Cascade Mountains, ~2 hours from Seattle
- Population of 1136; 95% Caucasian
- Median household income in 1999 was \$32,813
- 5% of families and 9% of individuals below poverty line
- 505 housing units
- 76% of homes were single-family detached units
- 54% of homes were built in 1940 or earlier
- 36% use wood heat



Troublesome Topography



Town Invited Agency to Assess Air Quality and Assist with Solutions

- **Some citizens and town council members concerned about wood smoke pollution**
- **Permit application from local lumber mill for wood-waste co-gen prompted concerns about air pollution; final permit included \$20K in mitigation funds for changeout program**
- **Town asked agency to install monitor before issuing permit (“Careful what you wish for!” –Jim Nolan)**



Elements of Darrington Project

- **Monitoring air quality to get real data**
- **Building relationships & communicating with:**
 - Town officials
 - Citizen committee working on change-out program
 - Town residents
- **Gathering information**
 - Emission inventory
 - Attitudes
- **Designing & implementing change-out program**

Project Team

● Agency team:

- Project Manager (me)
- Manager of Air Resources Department
- Air resource associate
- Communications team
 - ▲ + communications consulting firm
- Field inspector
- Air monitoring team
- Permit engineer

● Darrington citizen committee

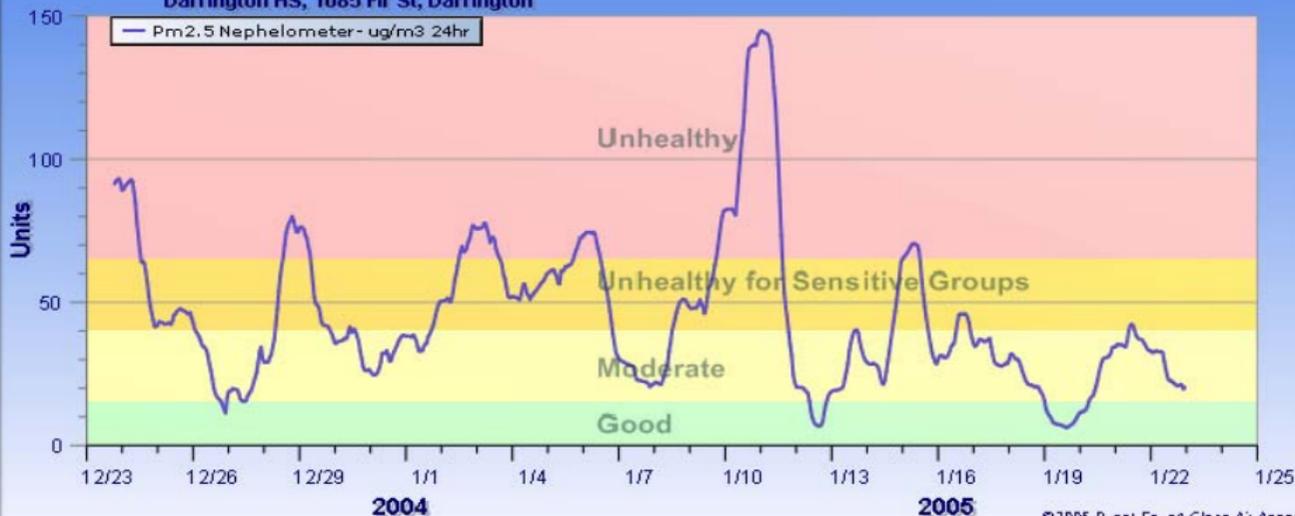
- 2 council members
- 2 Forest Service staff
- Computer programmer
- Science teacher
- Skeptic



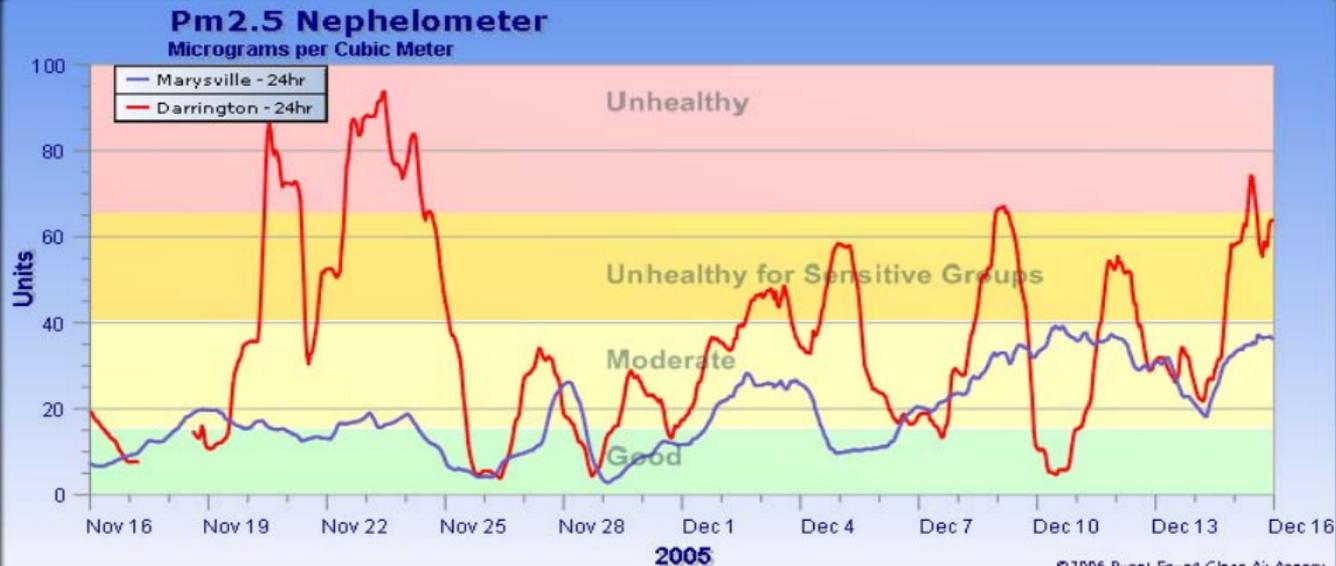
Wintertime Air Quality

Darrington

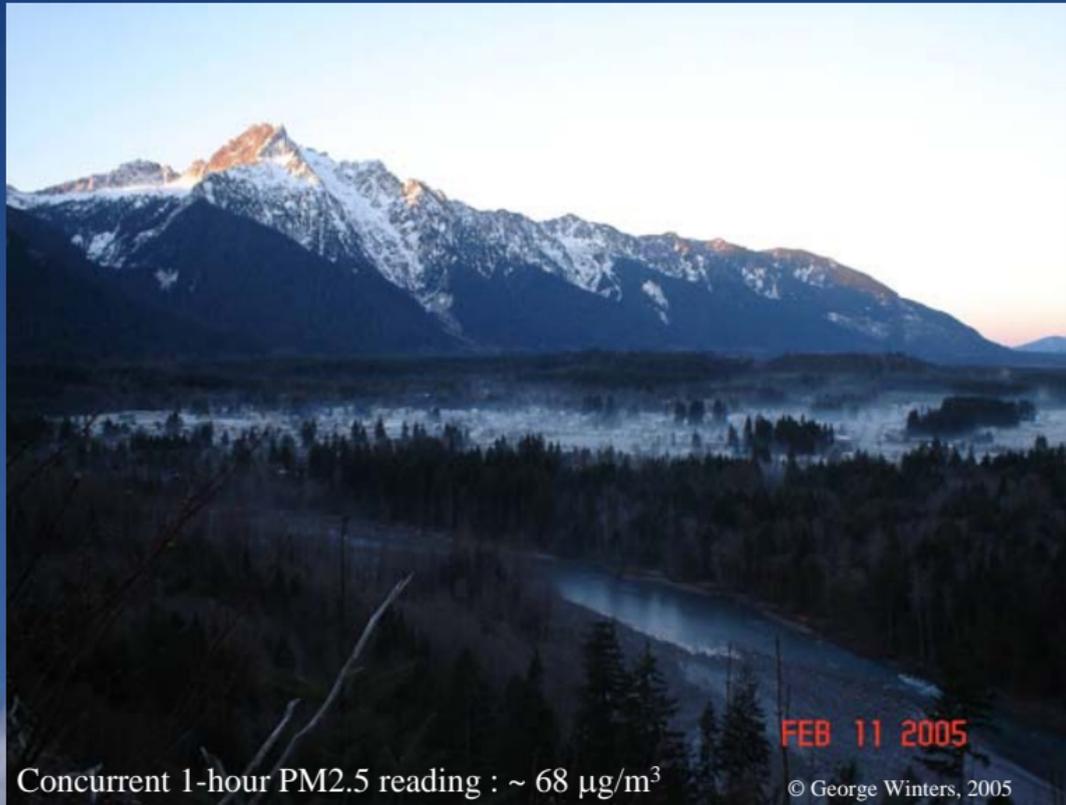
Darrington HS, 1085 Fir St, Darrington



Darrington Compared With Wood-Burning Suburbs



A Typical Winter Morning in Darrington



Concurrent 1-hour PM_{2.5} reading : ~ 68 $\mu\text{g}/\text{m}^3$

FEB 11 2005

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Partnership Between Town & Agency

- **Citizen workgroup headed by town council members guides overall project and provides critical local perspective**
- **Agency devotes resources to provide air quality monitoring, develop public education materials, and finance a woodstove/insert buy-back program**
 - \$100K total from state woodstove fee & civil penalties
 - \$20K permit mitigation from mill



Snapshot of Survey Results

- **141 responses returned (27%)**
- **120 (85%) own their home (census said 67%)**
- **41 (29%) burn at least 1 cord per year**
 - 1 to 12 cords per household
 - 4.3 cords/year on average
- **19% have access to free wood; 22% buy wood**
- **25% use wood as primary heat source (census said 36%)**
 - 16 certified stoves
 - 10 uncertified stoves
 - 9 stoves, age/certification unknown
 - 1 fireplace
- **25 (18%) were interested in heater upgrades**

Change-out Program Design

- **Agency and workgroup developed priorities for change-out program based on survey results**
 - Homeowners only
 - Target uncertified stoves and large-volume burners
 - Provide significant financial incentive
 - Promote cleaner burning practices for non-changers (“Everybody can do something to help our air.”)
- **Program must fit local independent culture**
 - Use town staff & committee to administer program
 - Use local resources for products/installations to the extent desired by participants; other vendors invited to participate—many are

Change-out Program Incentives

- **Higher financial incentives for cleaner heating sources to maximize air quality benefits of dollars spent**
 - **\$2500** to install propane, oil, or electric heat of any kind
 - **\$1500** to install pellet stove or insert
 - **\$500** to replace uncertified stove with certified wood stove
- **Agency pays 90% of incentive**
- **Town pays 10% out of mill's permit mitigation fund**

Change-out Program's Key Features

- **Voucher-based program (not rebates)**
- **Vendors sign agreement w/ Town to accept vouchers as cash and be reimbursed later**
- **Applicant must include estimate for new system**
- **All removed woodstoves must be destroyed**
 - Identified several disposal locations
 - Town also provided locked location for later disposal
 - Disposal signature required for voucher reimbursement
- **High-profile kick-off event to stimulate interest**

Change-out Program Flow

- Resident obtains estimate for new heater and submits application to Town Hall
- ↓
- Town committee conducts site visit w/ building inspector
- ↓
- Town issues change-out “voucher” to resident
- ↓
- Resident “redeems” voucher at hardware store or other vendor & pays difference
- ↓
- Vendor provides product and coordinates installation
- ↓
- Vendor removes old device for scrapping & gets receipt
- ↓
- Vendor invoices town for vouchers redeemed, with scrap receipt
- ↓
- Town invoices Clean Air Agency for 90% of redeemed voucher values



Application

The Darrington Wood Stove Change-out Program



Welcome to the Darrington Wood Stove Change-out Program



The Town of Darrington is pleased to offer to subsidize the opportunity to upgrade from existing heating systems to heat that is more efficient, more convenient, and less harmful to the air we breathe. An \$800 credit is provided.

How to Apply

An eligible homeowner in Darrington may get a 75% subsidy toward the cost of the new system or purchase along the same residential base amount as shown above on the greater of the two. The subsidy is available to existing homes on electricity and wood heat systems. As a result, the greater of the two is the subsidy. The subsidy is available to the Town of Darrington for the cost of installing clean heating systems if that choice is the more expensive option. The subsidy is available to the Town of Darrington for the cost of installing clean heating systems if that choice is the more expensive option.

What is the maximum subsidy?

The Town will cover the cost of the new system for up to 75% of the cost of the new system or purchase along the same residential base amount as shown above on the greater of the two. The subsidy is available to existing homes on electricity and wood heat systems. As a result, the greater of the two is the subsidy. The subsidy is available to the Town of Darrington for the cost of installing clean heating systems if that choice is the more expensive option.

How to apply for the subsidy?

1. Homeowners in the Town of Darrington complete the attached application and submit it to the Town, along with all information that supports the application. The Town will review the application and issue a decision on whether to subsidize the application. The Town will review the application and issue a decision on whether to subsidize the application. The Town will review the application and issue a decision on whether to subsidize the application.

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Thank you for your interest in the program.

Darrington Wood Stove Change-out Application



Please note: Only owner-occupied homes located within the Town of Darrington are eligible for change-out incentives. Applications are processed in the order received. Teachers for change-out incentives will be awarded to qualified applicants on a first-come, first-served basis. Funding is limited. Qualified applicants who receive a voucher must redeem it within 2 months.

Applicant Information

Name _____ Telephone _____

Street Address _____

Current Heating System Information

Type of heating system used: _____

- electric pellet stove wood stove in fireplace insert – 1992 or newer
 propane or oil fireplace wood stove in fireplace insert – pre-1992
 wood stove in fireplace insert, age not known

Make/Model of current heat source: _____

Estimated cords of wood burned annually (wood stacked 4' x 4' x 8' = 1 cord): _____

Estimated amount of pellets burned annually: _____ bags / tons (circle one)

New Heating System Information

Please indicate the type of heating system you are interested in having installed in your home.

- new wood stove electric heat wood pellet stove
 oil heating stove propane heating stove

Attach a cost estimate for the new system, including materials, installation, and labor tax.

Are you also interested in learning more about assistance programs for weatherizing your home?

- Yes No

Although the financial incentives are the reason most residents apply for the change-out, please indicate why you want to purchase a new system (check any that apply):

- Aesthetics (new and looks attractive) Heating Cost (no new system on heating)
 Convenience (it'll be easier to use) Safety (old stove or fireplace seems unsafe now)
 Efficiency (new unit uses less fuel) Purchase Price (discounted price too good to pass up)
 Environment (to reduce air pollution)

Darrington Wood Stove Change-out Application

page 1 of 2

Darrington Wood Stove Change-out Application



Terms and Conditions of Change-out Incentive Program

Important: Please Read Carefully! In signing this application, you are agreeing to the following provisions:

- This change-out incentive offer is only available for owner-occupied homes in the Town of Darrington.
- To qualify for a change-out incentive, your current wood stove or fireplace insert must be removed from your home and recycled. It cannot be re-installed in any other location in your home or elsewhere.
- Participants are limited to one incentive offer per household.
- Applications are processed in the order received. Vouchers for change-out incentives will be awarded on a first-come, first-served basis. Funding is limited so a voucher cannot be guaranteed. Once received, a voucher must be redeemed within two months.
- New heating systems will be subject to on-site inspection by representatives of the Town of Darrington to verify installation.
- No change-out incentives will be given for heating systems replaced prior to the start of the program.

Applicant Certification

I hereby affirm, under penalty of law, that the information provided here is true and correct to the best of my knowledge. I further affirm that I have read, understood, and agree to all the terms and conditions of the Change-Out Program stated above.

Applicant's signature _____

date _____

Detach this application and submit it, along with a copy of the complete cost estimate for the new heating system, to: Town of Darrington, PO Box 397, Darrington, VA 22613

The Town will mail vouchers to qualified applicants, who may then redeem them.

For use only:

Date Received _____ Received by _____ Voucher # _____

Darrington Wood Stove Change-out Application

page 2 of 2

Voucher/Certificate of Destruction

VOUCHER for Darrington Wood Stove Change-out



The Town of Darrington is pleased to offer its residents the opportunity to upgrade their existing heating system to one that is more efficient, more convenient, and less harmful to the air we breathe, at little cost to homeowners.

HOW THE CHANGE-OUT PROGRAM WORKS

- 1) This voucher is valid only for homeowners with a wood-burning stove or fireplace insert as a primary source of heat. The voucher must be redeemed for a cleaner source of heat from currently in use (for example, homeowners with an uncertified wood stove may choose any upgrade option, certified-stove users may upgrade to either a pellet or a proposed electric system).
- 2) Homeowners can redeem this voucher at a participating vendor; a current list of participating vendors is available from Town Hall. One voucher per household. This voucher must be surrendered to the vendor upon redemption and must be released by the expiration date, below.
- 3) This voucher is valid only for the cost of a new heating system, up to the value limits listed below. Homeowners are responsible for any costs in excess of these limits.
- 4) By redeeming this voucher, homeowners agree to have their current wood-burning stove or fireplace insert removed and scrapped.

VOUCHER VALUE

The cleanest sources of heat receive the highest incentive value. This voucher covers costs for a Darrington resident to replace their wood-burning stove or fireplace insert with a cleaner heating source:

- up to \$2,500 for installing a propane, oil, or electric heating system (stove, insert or furnace)
- up to \$1,500 for installing a pellet stove or insert
- up to \$500 for installing an EPA-certified wood stove or insert (valid only when replacing an uncertified stove or insert)

Homeowner issued to: _____

Address of installation: _____

Make/model of stove to be removed: _____

Issued by: _____ Date: _____

Voucher #: _____ Voucher Expires: _____

for Dealer use only

Verify validity of this voucher at <http://www.darrington.wa.gov> or by calling 360.436.1131.

Date Redeemed	Maximum Voucher Value	Total Installed Cost	Redeemed Voucher Value
	Q32500	Q31500	Q31500

VOUCHER—DARRINGTON WOOD STOVE CHANGE-OUT

Certificate of Destruction for Darrington Wood Stove Change-out



Instructions for Dealers:

1. If this Certificate and voucher do not accompany a request for voucher reimbursement, payment to the Dealer will not be made.
2. Ensure that this Certificate is complete, including all signatures, otherwise it is invalid.
3. Dealer must completely clean out (including fire brick and ash) and remove the door of all stoves tested as for recycling, or the Certificate will not be endorsed by recycler. Unredeemed certificates are invalid.
4. Delivery of old wood stove to a recycling facility is the Dealer's responsibility. Recycle at:

Town of Darrington 360.436.1131	Ansox Metal Corp. Woodville 425.481.1828	Big C Recycling, Monroe 360.805.9678	Eastbay Salvage Metal, Marysville 360.859.1540	Sno-King Recycling, Lynnwood 425.745.8282
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Homeowner/Buyer Information:

Name: _____ Phone no.: _____

Address: _____

Make and model # of stove removed: _____

Location room from which stove was removed: _____

Replacement unit: Certified Wood Pellet Propane Oil Electric

Homeowner signature: _____ Date: _____

Certification of Destruction (both Dealer and Recycler must sign):

Dealer: I hereby certify that the stove identified above was rendered inoperable and was surrendered to the recycler listed below:

Name of Dealer who installed new heater: _____

Signed: _____ Date: _____

Recycler: I hereby certify that the stove identified above will be destroyed, usable only as scrap thereafter.

Name of Recycling Facility: _____

Signed: _____ Date: _____

CERTIFICATE OF DESTRUCTION—DARRINGTON WOOD STOVE CHANGE-OUT

Stoves Being Removed . . .



Slide 20: Helping a Rural Community Tackle its Wood Smoke

Stoves Being Removed, II



Keeping Tabs from “Down Below”

- **Web-based relational database set up by committee**
 - Enter applications
 - Record progress of individual change-out applications
- **Vendors “claim” vouchers electronically to prevent fraud**
- **Generate reports and track voucher redemptions and payments**
- **Agency staff can see data at any time & analyze progress**
- **Check out appgenerator.com for more info**

Results so far

- 28 applications received
- 21 vouchers issued
- 19 vouchers claimed by vendors (15 by hardware store; 4 by 4 other vendors)
- 7 vouchers submitted to agency for reimbursement (totaling \$11,863)
 - uncertified stoves replaced by pellet (4) and propane (3) stoves
 - recipients had been **burning 39 cords annually**
 - over 1 ton of fine particles removed annually with these 7 change-outs

Next Steps

- **Conduct additional outreach to renew interest and generate more applications**
- **Develop program to teach better burning practices for those who choose to continue burning wood**
- **Identify sources of additional funds**

Happy Customers Say it All . . .

- *“[I’m] very happy with the program and with the [pellet] stove. It is convenient and clean. I can leave my wife at home and she has no problems taking care of the stove. **The cats love it.** I don’t see any smoke outside. Indoors there is no dirt and dust from constantly tending the old wood stove. The heat is equally good to the old stove, but more uniform. I don’t have to get up in the middle of the night to add firewood.”*
- *“I love my pellet stove. I am glad I am not having to carry wood. I don’t want to carry another stick of wood. I love the quality of the heat. It keeps the house around 70 degrees and it is a lot cleaner.”*
- *“I really like the [propane] stove I got. I wouldn’t give it up for nothing. I can leave the heat on low and come home and just turn it up. My old wood stove left the living room cold ... I am very glad I joined the program. I’d recommend it to anyone.”*

Working together for clean air



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Darrington Outreach – Snippets and Insights

Mike Schultz
Puget Sound Clean Air Agency

March 2006



First, who's on first?

Roles and responsibilities

Town

- Their project
- Ownership of the problem
- Responsibility for solutions
- Communication to the community
- Credit and visibility

Clean Air Agency

- Funding
- "Assistance"
- Working with:
 - ▲ Community workgroup
 - ▲ Town Council
 - ▲ Mayor
- Invisible

Setting the stage

- **Wood heating survey – Pogo-esque introductory message**
- **Bad wintertime A.Q. – from home heating**
- **Need to better understand the problem and find solutions**

Promoting the "Home Heating EXPO"

- **October 8**
- **Launch of the trade-out program**
- **Event promotion (consultant)**
 - Letter from mayor to every residence
 - Banner at host retailer
 - Flyers all over town
 - "Tuesday Folders"
 - Church bulletins
 - High school football game
 - Flyer added to local hardware store newspaper ad



EXPO Participants

- Darrington Hardware (venue)
- Mayor
- City Council
- Darrington Fire Dept.
- High school science club (air quality data)
- NWPBA
- Zigi Gadmoski (clean burning demonstrations)
- Hearth products dealer
- County PUD
- County Human Services (low income fuel subsidies & weatherization)
- County Asthma Alliance
- Durafume
- Chimney Sweep Institute of America
- Sierra Club (free gas cans)



Lessons Learned

1. Be patient and humble
2. Be an asset
3. Working with a group of community members is a huge asset
4. Seek and develop outside partners that add value
5. Have reasonable expectations
6. Meetings may have a high social factor to them
7. Listen to your town partners
8. Support the town's economy

...and the three most important requirements for a successful small-town wood smoke reduction project are:

1. Listen
2. Listen
3. Listen

Need to Know More?

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