

Makah Air Quality Program

“Clean Air, Healthy Homes Initiative”
Woodstove Change-out Project: Phase I



Dana Sarff; Air Quality Specialist
Sustainable Resources Division
Makah Fisheries Management; Makah Tribe

2002 Makah Emissions Inventory

- Forestry burning
- Open burning
- Woodstove fires
 - 480 homes
 - Estimated 80%, or 400+ homes have woodstoves
 - Burn average of 5 chords wood annually
 - As many as 300 may not be EPA certified

Inversion and Basin Conditions Makah Nation

Ambient Temperature Data Comparison

(Average 24 Hour Except Where Noted)

Cheeka Peak <small>(1,500 ft above mean sea level)</small>			Neah Bay <small>(16 ft above mean sea level)</small>		
January			January		
Date	Temp	PM 2.5	Date	Temp	PM 2.5
1/14/2009 12:00 AM	36.3	2.70	1/14/2009 12:00 AM	42.4	5.10
1/15/2009 12:00 AM	43.0	1.90	1/15/2009 12:00 AM	41.6	6.20
1/16/2009 12:00 AM	44.7	1.80	1/16/2009 12:00 AM	40.9	6.70
1/17/2009 12:00 AM	47.0	2.20	1/17/2009 12:00 AM	45.6	5.00
1/18/2009 12:00 AM	49.0	2.20	1/18/2009 12:00 AM	47.7	4.70
1/19/2009 12:00 AM	46.7	2.40	1/19/2009 12:00 AM	45.0	5.40
1/20/2009-6 Hr.	45.6	2.60	1/20/2009-6 Hr.	42.0	5.30
Note: Sites are approximately 5 miles apart line of sight.					
Temp Inversion					





Project Goal

- Goal of the project is to mitigate the human and environmental health effects of woodstove smoke pollution
 - PM 2.5 (primary concern)
 - CO
 - VOC's/Air Toxics such as benzene

Project Objectives

- Maximize partnership and collaborative opportunities to:
 - leverage funds
 - effectively co-manage
 - maximize number of change-outs (min of 40)
 - outreach and education addressing woodstove burning and resulting air pollution issues.
- Income and cultural issues

How We Did It

- Emissions Inventory information
- Grant opportunity: EPA-“Innovations in Wood Stove Changeouts Study” and residual FY 2007 year end funding
 - Identified Tribal stakeholders that we could partnership with.
 - Housing, Social Services (LIHEAP), Health Clinic, Seniors/Elders Program, community members
 - Applied for and were awarded \$ 100,000 grant funds from residual monies.

How We Did It (con't)

- Formed “Woodstove Change-out Committee”
 - Members
 - Co-management of project-Housing and AQ Program
 - Funding issues-fast track project and scheduling (24% Tribal/ 76% Contract)
 - Contracting
 - Recipient applications
 - Selection of recipients
 - Future funding strategy

How We Did It (con't)

- Contracting Process
 - Determined efficiency of project
 - RFQ's
 - Five submitted/Committee selected top three
 - Bid documents
 - Advertisement for Bids (local/area wide within 100 mile radius)

How We Did It (con't)

- Application/Eligibility
 - Tribal member or spouse of member
 - Not EPA certified stoves
 - Group A: 65 and over are elders by Tribal Resolution
 - Group B: 50-64 are seniors by Tribal Resolution
 - Personal health information requested but not required (if not, low priority status)

How We Did It (con't)

- Outreach and Education
 - Flyers
 - Posters
 - Community portal
 - Events
 - Word of mouth

Outreach and Education



How We Did It (con't)

- Implementation
 - Scheduling
 - Co-managers facilitate
 - Contractor and recipients schedule and coordinate
 - 3 trips with 15-20 appointments each
 - Staging
 - Storage container at central location
 - Access to forklift
 - Installations in groups

Storage/Staging



Installation



Installation (con't)



Installation (con't)



Installation (con't)



Installation (con't)



Installation (con't)



Before/After



Before/After



Successful Project Outcomes

- Co-management
- Fast track project implementation
- 44 woodstove/1 fireplace insert
- 10 non-EPA certified woodstoves serviced
- Developed infrastructure and capacity for future change-out phases.

Challenges/Lessons Learned

- One staff Air Quality Program
- No strategic plan, proposal, or funding strategy in place.
 - Grant proposal/application strategy only
 - Committee can assist here

Challenges/Lessons Learned

Strategy and Planning!

- Project strategy
 - Identify other Tribal stakeholders that can partnership with you.
 - Housing, Social Services (LIHEAP), Health Clinic, Seniors/Elders Program, community members
 - Form “Woodstove Change out Committee”
 - Develop strategic project proposal

Challenges/Lessons Learned

- Conduct inspection of all woodstoves in homes in project area and assess first level of eligibility
 - Tribal members? Home ownership?
 - EPA certified?
- Establish second level of eligibility
 - Age, Health issues
 - Income
 - Etc.
- Recipient candidates-application process

Challenges/Lessons Learned

- Funding strategy
 - Position yourselves to maximize leverage opportunities
 - Identify simultaneous and overlapping grant opportunities within same fiscal year or funding cycle
- Outreach and education
- Implementation
 - Scheduling
 - Staging
 - Installation

Project Funding

- EPA: “Innovations in Wood Stove Changeouts Study” and residual year end funding
- HUD
- DOE
- USDA
 - Section 534: Housing Preservation Grant (HPG)
 - Section 504: Home Repair Loans and Grants
- LIEHEAP

Thanks!

- EPA and the Makah Tribe for their support!!!
- Jim Woods: Sustainable Resources Division Coordinator (2004-Winter, 2008)
- Dana Sarff: Sustainable Resources/Air Quality Specialist
- Barbara Taylor: Housing Energy Program Coordinator
- Maureen Sones: Elder/Senior Program Manager
- Lyda Shaw: LIEHEAP Program Coordinator
- Volunteer Elders/Seniors
- THURMAN'S, Port Angeles, WA