

***MAKING WEATHERIZATION WORK FOR THE TRIBES!***

# ***Announcing***

***THE NATIVE AMERICAN WEATHERIZATION PROJECT***

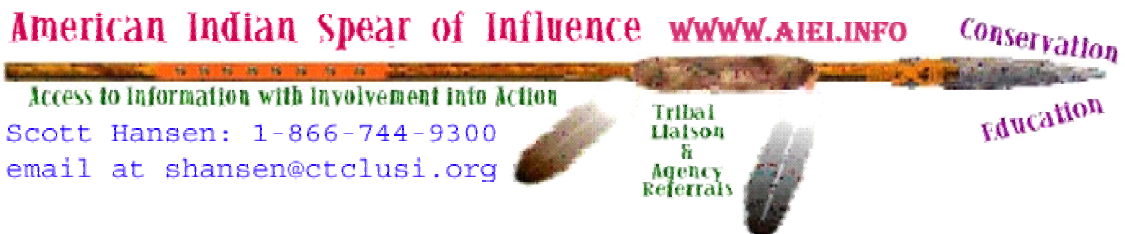
**“Two Seasons of Weatherization Training”**

**Building Tribal Energy Coordinators Capacity**

**Contact: Scott Hansen 1-866-744-9300**

**Residential Weatherization Training Workshops will be presented monthly from May 2004 through September 2004. All workshops will be held in the Eugene, Oregon area.**

**To allow for travel time, the first day of each Workshop will start at 10:00 am and the last day will close at 3:00 pm. Other Workshop days start at 8:00 am and end at 5:00 pm. The Workshop in August will allow time for Residential Weatherization Auditor and Inspector Certification testing.**



**American Indian Spear of Influence** [WWW.AIEL.INFO](http://WWW.AIEL.INFO) Conservation  
Education

Access to Information with Involvement into Action

Scott Hansen: 1-866-744-9300  
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Tribal  
Liaison  
&  
Agency  
Referrals

# ***THE NATIVE AMERICAN WEATHERIZATION PROJECT***

## **WORKSHOP #1: OVERVIEW OF WEATHERIZATION TRAINING**

**May 26 & 27, 2004**

*Eugene Water and Electric Board  
409 High Street, Eugene, Oregon*

Workshop #1 is designed for Tribal Staff that know little about residential weatherization.

### Instructors:

- Tom West, Eugene Electric and Water Board's (EWEB) Residential Energy Management Programs Supervisor
- ❖ Betty Merrill, Oregon Department of Energy (ODOE)
- ❖ Dan Hines, instructor on International Building Code (IBC) for the Bureau of Indian Affairs and various colleges
- ❖ Scott Hansen residential mold presentation

### **May 26:** *Introduction to Weatherization Workshops and Training*

- 10:00 am      Workshop Overview and Round Table Introduction  
Weatherization Program Description and Terminology
  1. Insulation
  2. Windows
  3. Duct Sealing
- 12:00 pm      Guest Speaker: Chuck Dalton, EWEB  
*Lunch will be provided.*
- 1:00 pm      ODOE's Conservation Resource Management Program
- 3:00 pm      Ventilation and Mold: "Finding the Fungus Among Us"
  1. Mold: is it a health risk?
  2. Finding and testing for mold.
  3. Removing and preventing mold.
  4. Ventilation: how important is it? IBC ventilation code: is it enough?
  5. Mold Informational resources handout and online
- 4:30 pm      Questions and Closing Comments

**May 27: Introduction to Weatherization Workshops and Training**

- 8:00 am Building Code and Contractor Licensing; Dan Hines
  1. What are Building Codes?
  2. Why use Building Codes?
  3. Looking up Building Codes
  4. Using the Instructional CD
  
- 10:00 am Contracting Licensing and his home study course
  1. What is a Contractor's License?
  2. Why become a Licensed Contractor?
  3. Using the home study course to pass the license test.
  
- 12:00 pm Guest Speaker  
*Lunch will be provided.*
  
- 1:00 pm Success Stories of Native American Weatherization: Working Together and Independently; Scott Hansen (Native American Weatherization) and Dan Coon (Grand Ronde Housing)
  
- 3:00 pm Questions and Closing Comments; Discussion of June's Workshop

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## **WORKSHOP #2: CONTINUATION OF WEATHERIZATION TRAINING**

**June 8, 9, & 10, 2004**

*Lane Community College, Building 15  
4000 East 30th Avenue, Eugene, Oregon:*

Workshop #2 is designed to build off the residential weatherization concepts presented in Workshop #1.

Instructors:

- ❖ Roger Ebbage, Director Energy Programs, Lane Community College
- ❖ Bruce Manclark, Co-owner, Delta-T Inc.

*Note:* Lunch breaks will be scheduled around noon each day. Lunch will be provided June 8 and June 10. There will be flexibility during the field trips for an open lunch hour. There will be a Guest Speaker for the June 8<sup>th</sup> lunch hour.

### **June 8: *Weatherization Training and Field Work***

- 10:00 am      Construction Overview, Roger Ebbage  
Residential Heat Loss  
Energy Definitions
  1. KWh, Therms, BTUs
  2. Conversion mathHeat Transfer Related to Residential Heat loss  
Noon Lunch Provided and Guest Speaker  
Forms of Energy
  1. Potential
  2. KineticTemperature vs Heat  
Specific Heat  
Related Math  
Heat Loss Methods Introduction
  1. The Envelope
  2. Amount and Type of Openings
  3. House Systems
  4. Use of the House
  5. Conduction/related math
  6. Convection/related math
  
- 4:30 pm      Questions and Overview of June 9

*Lunch will be provided.*

**June 9:** *Weatherization Training and Field Work*

- 8:00 am Heat Loss Calculations (Classroom), Roger Ebbage
- 12:00 pm Lunch **not** provided
- 1:00 pm Heat Loss Calculations (Field Work), Roger Ebbage

**June 10:** *Weatherization Training and Field Work*

- 8:00 am Blower Door and Related Calculations (Classroom), Bruce Manclark
- 12:00 pm *Lunch will be provided and Guest Speaker.*
- 1:00 pm Blower Door and Related Calculations (Field Work), Roger Ebbage
- 3:00 pm Questions and Closing Comments; Discussion of July's Workshop

# ***THE NATIVE AMERICAN WEATHERIZATION PROJECT***

## **WORKSHOP #3: WEATHERIZATION 101**

**July 13, 14, & 15, 2004**

*Eugene Water and Electric Board  
409 High Street, Eugene, Oregon*

Workshop #3: Provides a Weatherization Agency overview and continues at a more intermediate level with the concepts of residential weatherization.

### Instructors:

- ❖ Drew Edwards, Lane County's Housing and Community Service; holds an Energy Management Degree from Lane Community College
- ❖ Tom West, Eugene Water and Electric Board, Energy Services Specialist II (time donated)
- ❖ Dan Elliot, Oregon Housing and Community Services (OHCS) Weatherization Certification Program, Trainer (time donated)

### **July 13: *Weatherization 101***

- 10:15 am      Greeting background and training outline
  1. Instructor introduction
  2. Weatherization interest and background (3 or 4 question survey)
  
- 10:30 am      House as a system and the people who live in it
  1. Weatherization: what it is and why we do it
  2. History of weatherization
  3. The Residential Weatherization Energy Auditor's mission
  4. Benefits and drawbacks of weatherization
  
- 11:00 am      Typical energy consumptions in a home
  1. Utility bill: baseload, heating load, cooling load
  2. People and lifestyles
  3. Heating
  4. Refrigeration
  5. Water Heating
  6. Appliances
  7. Pie charts
  
- 11:30 am      Causes of Inefficiency
  1. People and awareness
  2. Air leakage
  3. Water heating
  4. Cooling
  5. Heat gains
  6. Distribution losses

7. Home appliances
8. Questions?

- 12:00 pm Guest Speaker TBA  
*Lunch will be provided.*
  - 1:00 pm Building types and construction
    1. Site built
    2. Mobile home
  - 1:15 pm Heat loss and the building shell
    1. Attic
    2. Crawl space
    3. Walls
    4. Doors
  - 1:30 pm Weatherization priorities (samples)
    1. Health & safety
    2. Infiltration
    3. Insulation types and values
    4. Windows
- Break
- 1:45 pm Building pressures
    1. Blower door
    2. Infiltration
    3. Duct leakage
    4. Indoor air quality
    5. Baseload opportunities
  - 3:15 pm What does an energy audit / inspection look like (eyes ears nose)
    1. Typical tools of the trade
    2. Typical audit procedure
    3. Inspections and why
  - 4:00 pm Questions

**July 14:** *Weatherization 101*

- 9:00 am Field trip to perform basic audits on (1) site built home and (1) mobile home
- 12:00 pm *Lunch will **not** be provided.*
- 1:00 pm Audit calculations
  1. Recommendations
  2. Economics and savings to investment ratio

- 3:00 pm Questions and tutoring hour for math applications

**July 15:** *Weatherization 101*

- 8:00 am No Cost Energy Savings; Tom West of EWEB
- 10:30 am OHCS Training Program; Dan Elliot of OHC Services  
~ Training Modules & Certification
- 12:00 pm Guest Speaker TBA  
*Lunch will be provided.*
- 1:00 pm Native American Weatherization Stories: Successes and Challenges of the referral system
  1. Finding Qualified Wx Applicants
  2. Referring Qualified Applicants
  3. Follow up and Problem Solving
- 3:00 pm Closing, questions, and discussion of August's Workshop

# ***THE NATIVE AMERICAN WEATHERIZATION PROJECT***

## **WORKSHOP #4: RESIDENTIAL WEATHERIZATION CERTIFICATION WORKSHOP**

**August 2, 3, 4, 5, & 6, 2004**

*Lane Community College, Building 15  
4000 East 30th Avenue, Eugene, Oregon:*

Workshop #4 is designed to prepare Tribal Staff for Residential Weatherization Certification.

Instructors:

- ❖ Roger Ebbage, Director Energy Programs, Lane Community College
- ❖ Bruce Manclark, Co-owner, Delta-T Inc.

### **August 2: Residential Weatherization Certification Workshop**

- 10:00 am Residential Heat Loss Review  
Priorities of Weatherization
  1. Health and Safety
  2. Building Durability
  3. Comfort and Energy SavingsHow Insulation Works
  1. Insulation Density Related Math
  2. Insulation Coverage Related Math
  3. Air barriers and Insulation Related Math
  
- 5:00 pm Closing and Overview of August 3

*Lunch will be at about 12:00 and will be provide with a guest speaker.*

### **August 3: Residential Weatherization Certification Workshop**

- 8:00 am Attic and Crawl Space Ventilation
  1. Purpose
  2. Placement
  3. Driving Forces
  4. Ventilation Related MathBuilding Pressure
  1. What is Pressure? Related Math
  2. Physics of Pressure: High to low Pressure; Related MathTypes of Air Pressure
  1. Static
  2. Velocity
  3. TotalHVAC Fans and Air Movement
  1. Related MathCombustion Appliances  
Multi-story buildings

Attached Garages  
Carbon Monoxide

- 5:00 pm Closing and Overview of August 4

*Lunch will not be provided.*

**August 4:** *Residential Weatherization Certification Workshop*

- 8:00 am Moisture Transport
  1. Air Movement
  2. Diffusion
  3. Capillary
  4. Liquid movementIndoor Air Quality
  1. Biological Pollutants
  2. Pesticides
  3. Combustion Gases
  4. Volatile Organic Compounds (VOCs)
  5. Metals
  6. Minerals
  7. Radiation
  8. SmokingStrategies for Improving IAQ
  1. Source control
  2. Separation
  3. Filtration
  4. Ventilation
- 2:00 pm Bonneville Power Administration Certification Test for Residential Weatherization Auditors (3 hours)
- 5:00 pm Closing and Overview of August 5

*Lunch will be at about 12:00 and will be on your own.*

**August 5:** *Residential Weatherization Certification Workshop*

- 8:00 am Weatherization Specifications
- 5:00 pm Closing and Overview of August 6

*Lunch will be at about 12:00 and will be on your own.*

**August 6:** *Residential Weatherization Certification Workshop*

- 8:00 am Weatherization Specifications
- 1:00 pm Bonneville Power Administration Certification Test for Residential Weatherization Inspector (2 hours)
- 3:00 pm Closing Comments; Discussion of September's Workshop

*Lunch will be at about 12:00 and will provided with a guest speaker..*

## ***THE NATIVE AMERICAN WEATHERIZATION PROJECT***

### **WORKSHOP #5: RESIDENTIAL ENERGY EFFICIENCY AND RENEWABLE RESOURCES**

**September 21, 22, & 23, 2004**

*Eugene Water and Electric Board*

*409 High Street, Eugene, Oregon*

Workshop #5 is designed to introduce Tribal Staff to residential conservation and renewable resource alternatives.

#### Instructors:

- ❖ Jon Miller, Executive Director of OSEIA, promotes solar power through Oregon Solar Energy Industries Association.
- ❖ Allen Van Zuuk, the Energy Outlet Resource Center, a Limited Renewables Technician Apprentice
- ❖ Kathy Grey, Eugene Electric and Water Board's (EWEB) Residential Energy Management Programs Supervisor
- ❖ Diana Enright or TBA, Oregon Department of Energy "Renewables and Conservation"
- ❖ Jan Schaffer or TBA Oregon's Energy Trust (uncommitted at this time).

#### **September 21: Residential Energy Efficiency and Renewable Resources**

- 10:00 am      Workshop Overview, roundtable introductions, workshop materials
- 10:30 am      Our Energy Choices Matter
  - ~ Presentation on current energy use and impacts
  - Renewable Energy Options are available
  - ~ Describing Oregon's abundant and available renewable resources
- 12:00 pm      Guest Speaker Carol Gates, USDOE  
*Lunch will be provided*
- 1:00 pm      Things each of us can do for our sustainable energy future
  - ~ Conserve energy
  - ~ Use energy more wisely (efficient appliances...)
  - ~ Support clean energy through political action
  - ~ Install RE systems that produce clean, local energyOverview of information on RE technology
  - ~ Passive Solar Building Design
  - ~ Solar Hot Water
  - ~ Solar Electric
  - ~ Small wind turbines
  - ~ Micro-hydroelectric systemsSummary
  - ~ Where to get more information

- 3:00 pm Introduction to “The Energy Outlet Resource Center”
  1. Mission and overview of resources
    - ~ Duct Sealing Certification Training
    - ~ Training and Information on The Energy Outlet’s website
  2. Energy Efficiency
    - ~ What is energy efficiency?
    - ~ How to implement energy efficiency measures.
    - ~ Why document the savings?
  
- 4:30 pm Closing, questions, and brief overview of September 22 Field Trip

**September 22:** Residential Energy Efficiency and Renewable Resources

- 8:00 am Field Trip: Travel to Allen Van Zuuk’s home
  
- 9:00 am Introduction to Zero Energy Homes
  1. Architecture
    - ~ Evaluating Sun, Wind and Water Resources
    - ~ Using resources: Wind Energy Atlas, Solar Path Chart and Re
  2. Maximize Free Energy
    - ~ Passive Solar Heating and Cooling
    - ~ Landscaping and Selecting the Right Building Site
    - ~ Thermal Mass and Thermal Swings
    - ~ Superinsulate and Build Tight but Ventilate Right
    - ~ Energy Efficient Home and Indoor Air Quality
  
- 12:00 pm *Lunch will be provided.*
  
- 1:00 pm Practical Examples and Illustrations of Building in Energy Efficiency
  1. Contractor Considerations: Code, Cost, Design and Function
 Renewable Energy: Practical Applications
  1. What Renewables are available at your site?
  2. Construction Challenges and Costs to renewable energy.
  
- 3:00 pm Hands On Demonstrations of above topics
- 4:00 pm Closing Questions and Brief Overview of September 23

**September 23:** Residential Energy Efficiency and Renewable Resources

- 8:00am Overview of EWEB Conservation Programs
  1. Heat Pump Program
  2. Solar Program
    - ~ Solar Hot Water Heater Program
    - ~ Solar Photovoltaic System Program

- 10:00am Overview of ODOE Renewables, Conservation, and Tax Credits
  1. Renewable Energy
    - ~ Solar
    - ~ Wind
    - ~ Biomass and other
  2. Conservation Program
    - ~ Saving energy today and everyday
    - ~ October is Energy Awareness Month
  3. Tax incentives & rebates
    - ~ What are the incentives?
    - ~ What is the pass through credit?
    - ~ Why is it important to Tribal Trust Lands?
    - ~ How to apply for these and other ODOE Programs
    - ~ Quick overview of ODOE Website and contents.
  
- 12:00 pm Guest Speaker Gene Ferguson, BPA  
*Lunch will be provided*
  
- 1:00 pm Overview of Energy Trust and Programs
  1. Home Programs
    - ~ Home Energy Savings
    - ~ Efficient New Homes and Home Products
    - ~ Solar Electric and Solar Water Heating
  2. Renewable Energy
    - ~ Solar Program and Case Studies
    - ~ Small Wind Anemometer Program
    - ~ Open Solicitations and other opportunities
  
- 3:00 pm Questions  
October/November 2004 Training Survey Followup  
Closing