WEBINAR SERIES PART II:
Crafting Remediation and Prevention Plans

Friday, May 15th
10:00am – 11:30am PDT
Webinar provided by the Tribal Healthy Home Network and the Institute for Tribal Environmental Professionals
TODAY’S SPEAKERS:

Mansel Nelson
Institute for Tribal Environmental Professionals

Gillian Mittelstaedt
Tribal Healthy Home Network

Tony Basabe
Swinomish Tribe Air Quality Program

Erin Mader
EPA Region X
DISCLAIMER:
If you are applying for the current HUD grant, please contact them directly for all questions related to the NOFA.

HUD Contact:
Roberta L. Youmans
202-402-3316
Roberta.L.Youmans@hud.gov
HUD Rating Factors: 100 Points Total

- Need/Extent of Problem
- Capacity
- Soundness of Approach
- Leveraging Resources
- Comprehensiveness and Coordination

100 Points Total
- Need/Extent of Problem: 30 points
- Capacity: 33 points
- Soundness of Approach: 17 points
- Leveraging Resources: 17 points
- Comprehensiveness and Coordination: 10 points
1. Detailed plans to implement **long term strategies to permanently remediate mold** in your tribally owned or operated units rather than short term interventions.

2. You are proposing to **permanently address the source of moisture** entering or dispersing in the homes.

3. You have **identified construction materials and techniques** known to resist mold

4. You plan to use and the training and technical assistance you will seek to **educate occupants** of the remediated units on ways to prevent mold from reoccurring.
Part 1: REMEDIATION – Essential Lessons from the Field

Part 2: PREVENTION - Sample Programs, Policies and Practices

Part 3: RESOURCES - Going Forward

Part 4: QUESTIONS
Part 1: REMEDIATION – Essential Lessons from the Field
Lessons from the field...

1. Knowing when to use your own crew and when to hire a contractor
2. Recognizing hidden places
3. Making sure remediation only needs to be done once...addressing the causes versus the symptoms
4. Keeping your crew safe: A word about Personal Protective Equipment
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Figure 2. Conceptual “stack effect” schematic of the neutral pressure level in a single story (bottom panel) and a two-story (upper panel) home. Arrows show the direction of infiltration and exfiltration and the length of the arrows depicts the strength of the flow.
Lessons from the field...

1. Knowing when to use your own crew and when to hire a contractor
2. Recognizing hidden places
3. Making sure remediation only needs to be done once...addressing the causes versus the symptoms
4. Keeping your crew safe: A word about Personal Protective Equipment
Personal Protective Equipment

Small Projects

- Remediation/investigation may disturb mold and mold spores.
- Avoid inhaling spores and skin and eye contact.
- Minimum: N95 respirator mask, goggles with no vent holes, rubber gloves, long sleeves and long pants.
Personal Protective Equipment
Medium Projects

More respiratory protection

• Limited: half or full face purifying respirator with HEPA filter cartridge.

• WARNING: HEPA filters do not provide protection against vapors or gases.

• Should always be approved by NIOSH.

• NOTE: All individuals using half or full face respirators must be trained, have medical clearance and must be fit-tested by a trained professional. The use of respirators must follow a complete OSHA program.
Personal Protective Equipment
Large Projects

More respiratory protection

• Full: Use in situations when high levels of dust or spores are likely or when intense long-term exposures are expected.

• Full-face powered air purifying respirator (PAPR) is recommended.
Personal Protective Equipment

Clothing

- Disposable clothing is recommended during medium or large jobs.
- Limited: disposable paper overalls
- Full: mold-impervious head, body and feet clothing made of breathable material such as TYVEK.
Safety Guidelines & Resources

• To **prevent exposure and assure containment**, critical that maintenance staff employ safety guidelines...

**IICRC S520 – Standard Guide for Professional Mold Remediation**
[www.iicrc.org](http://www.iicrc.org)

**Building Sciences Corporation - RR-0210 Mold Remediation in Occupied Homes**
[www.buildingscience.com](http://www.buildingscience.com)
Safety Guidelines - Occupants

- Prevention and clean-up for small areas (cleaning non-porous surfaces and wood with detergent; repair moisture source; dry material, etc)
- Many people use bleach, which kills mold, but is not a good cleaning agent
  - **Bleach is a strong respiratory irritant**
  - Surfactant (soap) is better
Part 2: PREVENTION
Capacity begins with training...

...but it takes hold when systems are put into place by which staff can put their training knowledge into daily practice and management-supported programs and policies.
Sample Tribal Mold Response Policy

Sample Mold Response Plan for Tribes

**POLICY**

The ___________________ department of the ________________ tribe shall be responsible for the identification of conditions that permit mold growth in tribally owned or operated homes, shall seek to correct and prevent those conditions to the extent feasible, and shall educate residents about actions they can take to protect their health and the condition of the home.

**AUTHORITY AND RESPONSIBILITY**

I. An **Environmental Health and Safety Officer** shall be responsible for:
   a. Conducting walk-through investigations of mold complaint areas;
   b. Determining the presence, location, size, and source of mold growth;
   c. Providing a written report including steps necessary for mold remediation;
   d. Procuring the services of qualified mold remediation contractors, as necessary; and
   e. Supervising employees and contractors during mold remediation and cleanup activities.

II. The **Tribal Housing Department** (or Authority) shall be responsible for:
   a. Notifying the Environmental Health and Safety Officer of any moisture issues, water infiltration or visible mold growth observed during regular inspections or maintenance;
   b. Providing access when an investigation and/or remediation is needed;
   c. Arranging for removal of furniture, equipment, etc. from the affected area prior to the start of remediation; and
   d. Ensuring occupants vacate the area prior to the start of remediation.

III. The Tribal **Maintenance, Construction or Custodial staff, or their Contracted Designee**, shall be responsible for:
   a. Identifying and correcting the source of moisture or water infiltration; and
   b. Performing mold remediation and cleanup activities for small (10 square feet or less) and medium (10 - 50 sf) sized projects, as deemed appropriate by the Environmental Health and Safety Officer.
   c. Performing mold remediation and cleanup activities for medium to large projects, as deemed appropriate by the Environmental Health and Safety Officer.

www.thhnw.org
Sample Mold Prevention Policy for Tribal Housing Residents

Sample Mold Policy for Residents of Tribal Housing

DATE: __________________________
ADDRESS: _______________________
TENTANT: _______________________

It is the goal of the ___________ tribe to maintain our property to the highest quality of living environment for our tenants. We have inspected the dwelling unit prior to the commencement of the lease and have identified no damp or wet building materials and known no mold, mildew or other fungal growth in the dwelling unit. However, mold and mildew spores are present throughout the natural environment and cannot be entirely eliminated from any dwelling place.

In order to reduce the probability of mold, mildew or other fungal growth, protect your health and protect your personal property and the dwelling unit, you, the tenant agree to maintain the premises in a manner that prevents the growth of mold, mildew or other fungi in the dwelling unit by reducing or eliminating the sources of excess moisture. Moisture occurs from the process of breathing, presence of live plants and fish tanks, cooking, bathing, laundry and other moisture-producing activities. Excess moisture builds up when a unit is not properly ventilated.

If the dwelling contains excess moisture due to the tenant’s lifestyle or activities, the tenant may be required to obtain and maintain a product or product(s) that reduce moisture in the unit.

Tenant’s obligations and guidelines for moisture reduction include, but are not limited to the following:

1. To keep the dwelling clean at all times, free of dirt and debris, especially those things that can harbor mold, mildew spores or other fungal growth.
2. To clean bathrooms, kitchen surfaces and walls with products which reduce or inhibit growth of mold, mildew or other fungi.
3. To clean and dry any visible moisture on windows, walls and other surfaces, including personal property, as soon as the condition occurs.

www.thhnw.org
Sample Mold Practices for Tribal Construction and Maintenance Crews

Sample Mold Prevention Practices for Tribal Construction and Maintenance Crews

In order to prevent the health hazards and fiscal strain caused by mold contamination, the _______ tribal construction and maintenance crews, or their designated contractors, shall seek, where feasible, to integrate the following mold prevention practices in the design, construction and maintenance of their tribally owned or operated housing units. This may include, but is not limited to the following:

**Construction Practices (examples):**
- Employ grading practices that ensure the ground slopes away from the building foundation, so that water does not enter or collect around the foundation.
- Include soils and drainage analysis in any pre-construction engineering.
- Store and handle all building products to avoid water exposure during construction, including:
  - Keep stacks of lumber, plywood, oriented strand board (OSB), drywall, and other porous materials in a dry, covered storage area.
  - Before installing the materials, inspect carefully for water damage, swelling, warping, or other signs of mold growth. Discard any such materials immediately.
  - Install a roof or cover the new construction as soon as practical.
- Insulate and condition basements and crawl spaces as follows:
  - Insulate crawl space and basement perimeter walls according to IRC Table N1102.1 or IEC Table 409.1.1.
  - Seal crawl space and basement perimeter walls to prevent outside air infiltration.
  - Provide conditioned air at a rate not less than 1 cfm per 50 sq. ft. of horizontal floor area. If radon-resistant features are required (see Specification 2.12), do not install exhaust ventilation, as described in IRC section R608.8.2.1.
- Procure and use construction materials that meet GreenGuard or IndoorAirPlus standards.

**Maintenance Practices (examples):**
- Clean and repair roof gutters on a ________________ (monthly, seasonal, annual) basis.
- Inspect exterior and perimeter of structure on a ________________ (monthly, seasonal, annual) basis.
- Inspect the vents on all appliances that produce moisture, such as clothes dryers, stoves, or kerosene heaters on a ________________ (monthly, seasonal, annual) basis.
- Inspect exhaust fans on a ________________ (monthly, seasonal, annual) basis.
- Inspect HVAC systems regularly for condensation, keep drip pans clean, flowing properly and unobstructed, on a ________________ (monthly, seasonal, annual) basis.

www.thhnnw.org
Voluntary Health and Housing Assessment Form

Residents: Please note that this information is only being collected to help obtain funding for mold remediation in our tribal housing and as such, we ask you not to include your name or your family’s names. This is a voluntary form and will only be used to show that mold in our tribal housing may be affecting the health of our residents.

Thank you.

1. Have you or anyone in the home had any of these conditions in the last 12 months or since you moved into this house/unit? **Check all that apply.**

- □ Doctor-diagnosed asthma
- □ Asthma symptoms (cough, wheezing, shortness of breath, chest tightness, and phlegm without a cold or respiratory infection)
- □ Chronic bronchitis
- □ Ear infections (three or more)
- □ Eye irritation
- □ Allergies
- □ Frequent headaches or migraines
- □ Hay fever
- □ Respiratory disease
- □ Sinus problems
- □ Skin infection/rash

2. Do any of these symptoms worsen when you enter the house/unit or while you are there?

3. Do they improve after leaving? If yes, please describe.
Example - Procurement Practice

[Image of a stack of Georgia-Pacific Gypsum ToughRock® Mold-Guard Gypsum Wallboard]

CERTIFICATE OF COMPLIANCE

Georgia-Pacific Gypsum
ToughRock® Mold-Guard
Gypsum Wallboard

UL 1818 - 2013 Standard for Chemical Emissions for Building Materials

Products tested in accordance with UL 1818 test method to show compliance to emission limits in UL 1818, Section 3.3.

http://industries.ul.com/environment/certificationvalidation-marks/greenguard-certification-program
Example - Prevention Policy

Adopt the Moisture Control Specifications in EPA’s Indoor Air Plus program

http://www.epa.gov/indoorairplus/technical/moisture/1_4.html
Example - Resident Education Program

Air Matters cue cards and tools on display at a health fair
What is the *air matters* tool kit?

- **Low cost tools and cue cards** that inform and empower residents

- **Preventative home maintenance** = lower cost for housing department and health clinic, better health for residents

- **Kits customized for residents**, with up to **11 different tools** that detect, measure, or prevent contaminants in the home
Protect your family from this invisible, dangerous gas

What it is
Carbon monoxide is the leading cause of poisoning death in the United States. Homes often have many devices that produce carbon monoxide gas. Gas stoves, fireplaces and woodstoves, gas water heaters, charcoal grills and snow machines are examples.

What it does
When it’s breathed in, carbon monoxide replaces oxygen in the lungs. Carbon monoxide poisoning can cause damage to the brain and heart, or even death.

Carbon Monoxide
Carbon Monoxide Detector

What you can do
Start by following the instruction manual. Call your local fire department for help with installation.

- Install a carbon monoxide detector in your home. Place it on the wall close to bedrooms.
- Check the batteries in the detector every month, and replace the detector every five years.
- Seek prompt medical attention if you suspect carbon monoxide poisoning. Symptoms include dizziness, light-headedness and nausea.
- Leave your home immediately if the detector sounds. Call 911 after you’ve exited the house.
- Never use a generator, charcoal grill, camp stove, unvented stove or other fuel-burning device inside the home.
- Don’t idle a car, truck, snow machine or motorcycle inside a garage that’s attached to the home.
- Never heat your home using a gas oven.

Fact
Low levels of carbon monoxide can produce flu-like symptoms.
Keep fires burning efficiently and safely

What it is
A chimney thermometer measures the temperature of the fire in your woodstove. The thermometer attaches magnetically to the flue.

What it does
Under optimal burning conditions, the fire in a woodstove heats your home while producing only small amounts of smoke, ash and creosote. The thermometer helps determine if you are burning within the optimal range.

Wood Burning Stove
Chimney Thermometer

What you can do
Start by attaching the thermometer to the flue pipe or stove top. Seek professional advice if the temperature reads too high or too low.

- Choose the right firewood. Hardwoods are best.
- Avoid burning green or wet wood (you'll have to burn more of it to produce the same heat as dry wood). Firewood should have less than 20 percent moisture content.
- To dry firewood, it should be split, securely covered, and seasoned for at least six months.
- Seasoned wood burns hotter, cuts fuel consumption and reduces the amount of smoke produced.
- Open the damper to raise the flue temperature, close it to lower the flue temperature.
- Never burn trash or treated wood, which puts toxic pollutants into the air inside and around your home.
- Regularly clean ashes from your wood-burning appliance. Ashes can clog the air intake vents, making your stove burn less efficiently.

Fact
Burning green or wet wood is a leading source of indoor and outdoor air pollution, contributing to asthma, heart attack and stroke.
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<td>Carbon Monoxide</td>
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Part 4: RESOURCES
Guidelines on mold... and Healthy Housing - from HUD

HUD’s Office of Lead Hazard Control and Healthy Homes

http://www.hud.gov/offices/lead/hhi/hhiresources.cfm
Guidelines for Remediation from EPA

http://www.epa.gov/mold/preventionandcontrol.html
A Brief Guide to Mold, Moisture, and Your Home

http://www.epa.gov/mold/moldguide.html
Tips for Residences

• Keep Relative Humidity between 30 to 60 percent
• Furniture 6” away from exterior walls
• Do not hang blankets on exterior walls
• Use proper window treatments and open during the day – No blankets
• Run bath fan after each bathing event
• Diligence – watch for problem prone areas
• Take ACTION!
Recommendations for Prevention Plan

• Education for Occupants
  ▫ Modify to local conditions
  ▫ Modify to building structure and occupants

• Motivation for Occupants
  ▫ Occupants are responsible for their actions
  ▫ Occupants need to report mold issues early
  ▫ Consider consequences for not taking action
Going Forward:  
*How can EPA help you?*
EPA and the Indoor Environment

• Unlike building codes or OSHA requirements for workplace safety, EPA has little regulatory authority over the environment inside a home.

• EPA helps to identify and share the best available science, tools, and practices for use in policies and programs at the tribal, local, and state levels.

• EPA funds indoor environments and air quality work, including many tribal environmental programs and technical assistance entities.
EPA’s Web-Based Resources

- Mold website: www.epa.gov/mold
  - Audience-specific guidance documents
  - Outreach tools
  - Training

- To order publications: www.epa.gov/nscep
EPA’s Human Resources

• Headquarters
  ▫ Indoor Environments Division
  ▫ Asthma Program

• Regional Offices
  ▫ Indoor Air Program Staff
  ▫ Tribal Air Program Staff
  ▫ Children’s Health Coordinators
EPA and Your Tribal Partners

- Tribal *environmental or air quality* staff (often EPA-funded)
- Tribal *health care service providers*: tribal 638, urban, Indian Health Service
- Tribal *consortia* from different fields
  - National American Indian Housing Council, tribal housing associations such as NWIHA, National Tribal Air Association, etc.
- Tribal *training and technical support* entities:
  - Tribal Healthy Homes Network
  - Institute for Tribal Environmental Professionals
  - Alaska Native Tribal Health Consortium
  - Tribal Air Monitoring and Support (TAMS) Center
Federal Partners and Funders

- Many other federal agencies help address and/or fund home health and safety work
  - HUD
  - USDA
  - BIA
  - HHS
  - DOE
  - IHS
- Get to know them 😊
Need help finding an EPA resource?

Erin McTigue
EPA Region 10
Tribal Indoor Air Program
mctigue.erin@epa.gov
206-553-1254
Part 4: QUESTIONS
TO NOTE...

After today’s webinar, THHN, ITEP, HUD and EPA can provide:

- Connections to trainers, courses and materials
- Assistance with *healthy housing practices, policies and programs*
TO CONTACT US...

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