

AVIAQ

Alaska Village Indoor Air Quality Program

Your Guide to Indoor Air Quality in Alaska



The Alaska Village Indoor Air Quality Program (AVIAQ)

What is it?

Indoor Air Quality is an issue that affects much of Alaska. Our long, cold winter and reduced daylight hours mean that we must heat our homes, and keep the lights on, for extended periods. Past AmeriCorps members have found indoor air quality to be a common concern in villages across the state. In blocking out the winter, we've sealed ourselves shut at home. The use of combustible heating devices and toxic cleaning products, in addition to smoking indoors has increased that concern. The Alaska Village IAQ program will increase the awareness of, and help address, some of the current IAQ issues.

Each year, RurAL CAP has worked through its RAVEN AmeriCorps members to reduce household hazardous wastes. Now, through Alaska Village Indoor Air Quality program, we are able to combine our efforts to reach more households than ever. Both BIRCH and RAVEN AmeriCorps members will be participating in contributing to community health and awareness by conducting Indoor Air Quality education events and distributing green cleaning kits and other IAQ supplies and educational materials, including installation of carbon monoxide alarms, to community members who have indicated their interest and demonstrated their need.

Many of the products used in rural Alaskan homes for cleaning are not only costly, but often toxic and harmful if used or disposed of in the wrong way. Many homes also have issues with mold due to tightly sealed homes. Information will be shared with homeowners about reducing and preventing mold. You will also be provided with a moisture tester and humidity gauge with which to help residents. Carbon monoxide is also a common issue - due to the frequent use of combustion devices in the home, such as woodstoves, kerosene space heaters, etc. By installing CO monitors, replacing batteries in existing alarms, and providing educational materials, residents will have the ability to address CO in their homes. AmeriCorps members will be given a carbon monoxide detector that can be used to pinpoint the cause of CO problems. Environmental Tobacco Smoke also causes IAQ problems. Residents will be provided with educational materials, a Smoke Free Pledge and tobacco cessation information/contacts. We hope that the information included in this manual can be used as a simple educational tool and resource to provide your community with indoor air quality awareness.

RurAL CAP's Indoor Air Quality program also provides you with a green cleaning kit. The Green Cleaning kit showcases an array of effective alternatives to common toxic chemicals. It is filled with non-toxic, environmentally friendly (and kid, pet, wildlife friendly) cleaning supplies.

RurAL CAP receives funding from the Environmental Protection Agency (EPA) Region X Office of Air Quality for this project. This funding is used to purchase supplies for AmeriCorps members, who then go to community homes, provide educational materials and install supplies.

What does RurAL CAP do?

- RurAL CAP staff will provide an introduction to IAQ at AmeriCorps Orientation.
- RurAL CAP staff will purchase supplies for AmeriCorps members and ship supplies to communities.
- We will be available at our 1-800 number or through e-mail to answer your questions about IAQ and the AVIAQ Project. You should contact your Program Coordinator (Alison = BIRCH, Nils = RAVEN) with questions.
- We will also try to connect you to IAQ resources across the state, and additional trainings if available.

What are the expectations of AmeriCorps members?

AmeriCorps members will:

- 1. Attend IAQ training at Orientation**
- 2. Introduce the AVIAQ to their communities by:**
 - Talking with the local store about carrying these supplies
 - Going to a tribal/city council meeting and telling them about the program
 - Posting info at community centers (posters, fliers, pamphlets) such as the tribal council, post office, school, clinic
 - Talking about IAQ at a public meeting
 - Having kids/youth design IAQ posters
 - Announce IAQ home visits on the VHF
- 3. Do a community IAQ education event**
 - At the school, a council meeting, church gathering, or another get together, provide IAQ information to community members and tell them about Home Visits. Have people sign-up if they want a visit.
 - Hand out educational materials (but not supplies).
 - Keep a tally sheet about the number of people who attend.
- 4. Conduct Home Visits to 25 homes**
 - Make a list of households you will visit – especially homes that have elders, young children, or people who have told you they are interested
 - Call Nils and request materials for the number of households you will visit (should be around 25). Fill out the attached home visit worksheet and fax it in.
 - Call each household you will visit and set-up a time to go.
 - Go to each home and conduct a Home Visit (see below).
 - Fax Home Visit Waivers to Nils as soon as they are finished.
- 5. Do follow-up surveys with those you visited.**
 - All participants in the Home Visits must agree to do a quick follow-up survey within three months.
 - Call or visit homes again and ask them the questions on the survey.
 - Send surveys to Nils.

How do we do Home Visits?

1. Call in advance and schedule a time to visit. Bring blank copies of the AVIAQ Home Visit Waiver.
2. Introduce yourself and the AVIAQ Project to the residents at the home
3. Fill out the section marked “Resident information”
4. Have the head of the household **sign** the Home Visit Worksheet (must be over 18).
5. Make sure to get **a phone number** for your follow-up survey (we will not give out phone number/ mailing address information to others)
6. No one can receive IAQ supplies without signing the form and providing a phone number.
7. Go over all six topics listed under “Indoor Air Quality Education” and give residents related handouts:
 - a. AVIAQ brochure
 - b. Environmental Tobacco Smoke
 - c. Smoke-free Pledge
 - d. Carbon Monoxide Poisoning – Are you safe in your home?
 - e. Introduction to Molds
 - f. Mold in your home (EPA Booklet)
 - g. What is Household Hazardous Waste?
 - h. Household Hazardous Materials Inventory (Our Land Speaks)
 - i. Quick and Easy Green Cleaning
8. Check for a Carbon Monoxide alarm
 - a. If they do not have one, install one.
 - i. Take CO monitor out of the box, install the battery
 - ii. Use double-sided tape to hang CO monitor on or near the ceiling, 6” away from walls or corners, in the hallway near furnaces and heaters (but not right next to them or in the garage).
 - b. If they do have a CO monitor, see if it is working and install a new battery
9. If the residents say they have a problem with mold:
 - a. Provide them with a humidity gauge and talk to them about what they can do to improve ventilation and keep humidity low
 - b. Talk to them about ways to clean-up or avoid mold.
 - c. Use your moisture tester to test soft furniture or exposed insulation for dampness to pinpoint problems.
10. Tell residents about Green Cleaning and IAQ problems related to toxic commercial cleaners. Show them the Green Cleaning instructions and give examples of how to use supplies.
11. Let residents know you will call back in 3-6 months to follow-up.

Program Guidelines

- This is an installation program, not a give-away program.
- All materials are to be installed according to instructions found in the box.
- Include indoor air quality and green cleaning information with every visit.
- Follow-up surveys should be done on homes with installations after 3 months.
- For the safety of the volunteers and the project, home assessment and installation are done in teams of two
- Residents allowing you in the home are at least 18 years of age or older.
- Please advertise as much as possible to increase program participation.
- Materials must be returned to RurAL CAP if not used. RurAL CAP reserves the right to make a case by case determination based on plans to use the materials within one year.

Special notes:

1. Not every household will need or get every supply. Try and provide supplies to those who need them most (for example, someone with asthma may need a Green Cleaning Kit more than someone who is not very interested. Someone with a mold problem will need a humidity gauge more than someone who does not have mold).

2. Get your community involved!

Let the community know that indoor air quality information/green cleaning products will be coming.

- Place flyers at the local post office, washeteria, grocery store, senior center, school children, day care centers, church bulletins, local clinics and other local business offices
- Radio announcements
- Local news for the newspaper or community newsletter (community event listings are usually free)

3. Recruit volunteers to help you!

- Get the local fire department or health clinic involved, they are your natural partners.
- Sometimes, starting the project off an Indoor Air Quality Fair for the community gets everyone involved, especially families with young children.
- You can also involve the youth group in installation, education and home visits. You should get parental permission, depending on the situation.

4. Schedule the event to occur over a period of time such as:

- Every Saturday for one month, or,
- Two evenings (6-8:30 PM) and all day Saturday for one or two weeks

Please note:

- Try to visit between 10am and 8pm.
- Break your day up into 2-3 hour segments while visiting homes.

- Visit during daylight hours—this may be difficult during the winters in Alaska.
- Pay attention to signs that say “no trespassing”.
- Never have volunteers put themselves in danger from household pets or guard animals.
- Be sure all volunteers know to shut gates when going in and out so that animals and small children do not leave a home’s yard.
- For the protection of the volunteer, have people go out in teams of two. Teams should try to stay together inside the home, or at least within eyesight or hearing range. This allows there to be a witness to all activities in a home.

Using volunteers from the local community will help the success of the project in small communities where people know each other. If local fire departments are helping with the program, wearing an identifying sweatshirt or t-shirt often increases the likelihood of residents wanting to have their smoke alarms checked. Wear your AmeriCorps sweatshirt while performing home surveys and installations!

The project brochure is provided for you to give to people in their home and to help you give them some basic indoor air quality tips. Talk briefly about those topics that apply and mark on the home installation form those topics that you went over.

A lot of the people you visit will know most of the tips. You might say “You probably know most of this; I just want to briefly go over them to remind you.” Saying something like that often puts people at ease and they will know that the tip reminders are part of your job.

Be sure to ask for questions. If the information is new, spend more time on it. The safety tips will take a small amount of time so plan how you will present them and how you will include the information that you need to. We suggest that you go over the information much like how it was presented to you.

Filling out the Home Visit Waiver

**The form needs to be filled out with an older person in the home, preferably the owner (at least 18 years of age and older), who is able to agree to a home visit.

The waiver information may be read out loud to make sure the owner hears it.

Have the adult sign the waiver before you begin the installation. You may print their name for them to make sure there is a name that can be read and that spelling is correct. Their name will only be used for follow-up and no other purpose. There can be no installation without a signature, and waiver filled out. Sign and date the form yourself.

Make sure you mark what materials are left with the homeowner – green cleaning kit, temperature/humidity gauge, etc.

After the Form is Completed:

After every home visit, fax a copy to RurAL CAP, and keep the original for your records. Check over the forms to make sure they have been filled out correctly, and that either the writing is legible or that a translation of the writing is accurate before they get sent to the Anchorage office.

RurAL CAP will enter the data into a database. The numbers of communities served, materials installed, and homes enrolled are collected to report on to the granting agency that funds the program. Your community numbers will be reported back to you. The information is useful when making reports to other community businesses or your local tribal or city council.

Follow-Up:

Follow-up is required. All participants are expected to fill out follow-up surveys as part of the program. The preferred time frame is 3 months after your visit.

The Follow-Up Form is scripted for both home visits and telephone calls. Please attempt to follow up three different times and on different days. The three attempts may be all by telephone, home visit, or a combination of tries. Once three attempts have been made the follow-up is completed for that home whether or not there has been success in making contact.

If contact is made on any of the three attempts and the resident (adult, 18 years of age or older and preferably the one who filled out the installation form) refuses to participate, the follow-up is complete and “refused” is marked.

Alaska Village Indoor Air Quality Program

Home Visit Waiver

I understand the purpose of this program is to provide me with indoor air quality (IAQ) materials and information. I agree RurAL CAP is giving me information and free IAQ equipment to promote clean indoor air.

I understand RurAL CAP does not say or promise these brands of equipment are the best. I also know RurAL CAP is not the seller, manufacturer, or dealer of this equipment.

When I accept the free supplies, equipment and the indoor air quality information, I agree not to make any claim or to file any lawsuits against RurAL CAP for any present or future injuries, damages of costs claimed to have resulted from the IAQ education program. I will read and follow the manufacturer's instructions, which are included with the equipment.

I will allow RurAL CAP to return to my home within six (6) months to check on the installed equipment.

***** **Resident Information** *****

Resident Printed Name _____ Date: _____

AmeriCorps name (or volunteer name) _____

Resident Signature: _____ Resident Phone Number: _____

Resident Address: _____ City: _____ Zip: _____

Are there children under the age of 14 in the home? Yes No If yes, how many? _____

Are there adults over the age of 65? Yes No If yes, how many? _____

Other adults? Yes No How many? _____

***** **Indoor Air Quality Education** *****

Did you get information on the following home safety issues:

AVIAQ brochure: Yes No Household Hazardous Waste: Yes No

Environmental Tobacco Smoke: Yes No Mold/Humidity: Yes No

Carbon Monoxide Poisoning: Yes No Green Cleaning: Yes No

***** **IAQ Materials** *****

Is there an existing carbon monoxide alarm in the home? Yes No

Installation of new materials:

Please list which items were installed in the home.

Humidity gauge _____	CO Alarm _____	Batteries _____	Green Cleaning Kit _____
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Tips for Home Visits

Take safety items with you:

- Gloves
- Dust mask
- Eye protection

Watch for children in the house:

- Do you know where they are at all times?
- Do they understand that some of the equipment may be dangerous?
- Are their parents/guardians adequately supervising them?
- If a child is out of control or putting themselves in danger, it is ok to reschedule your visit

When you enter a new house, look around for:

- Breathing hazards
- Walking hazards
- Ceiling hazards

Are there things that might make it hard to breathe?

- Is there a lot of dust in the room?
- Are there open containers or bags that you cannot identify?
- Are there any visible wet areas in the room?

Making it safe from breathing hazards:

- To make it safe in an area that you are unsure of, wear a dust mask or breathing protection.
- Always wear heavy gloves if you are unsure of what is in the room.

Is the floor solid?

- Are there cracks or holes in the floor?
- Are tiles loose?
- Is the floor coming apart?
- Is there glass or nails on the floor?
- Be especially careful in attics or where there are only thin sheets of plywood to walk on!

Is the ceiling together?

- Are parts of the rood caving in?
- Are there ceiling tiles on the floor?
- Is there insulation or foam on the floor?
- If there are loose tiles on the ceiling, do not put the smoke alarm there.
- If unsure, be cautious. Don't put yourself in harm's way.

Follow-up Survey

AmeriCorps member _____

Community _____

Homeowner/resident name _____

Methods (telephone, home visit):

Number of tries: 1. _____ 2. _____ 3. _____

Follow up—Ask to speak to someone who is older than 18, preferably someone who was there when the home visit occurred.

1. **Did you receive a green cleaning kit?** Yes (go to 1a – 1c) No (go to question 2)
 - a. **Have you begun using non-toxic cleaning supplies?** Yes No
 - b. **Does your village store carry similar supplies?** Yes No
 - c. **Has there been a decrease in the incidence of mold?** Yes No

2. **Did you receive a CO Alarm or batteries?** Yes (go to 3) No (go to 5)

3. **Is your CO monitor working?** Yes No
 - a. **Have you tested it?** Yes No
 - b. **Does your store carry CO monitors?** Yes No

4. **Has your CO monitor gone off?** Yes (go to 4a, 7b) No (go to 5)
 - a. **What was the cause?** _____
 - b. **What did you do?** _____

5. **If you smoke, has there been a decrease in smoking inside the home since you have learned more about indoor air quality?**

Don't smoke Yes No Have always smoked outside

6. **Do you feel that your understanding of indoor air quality concerns has increased?**
Yes No

7. **Do you feel that your ability to fix indoor air quality concerns has increased?**
Yes No

Indoor Air Quality in Your Home

What Causes Indoor Air Problems?

Indoor pollution sources that release gases or particles into the air are the primary cause of indoor air quality problems in homes. Inadequate ventilation can increase indoor pollutant levels by not bringing in enough outdoor air to dilute emissions from indoor sources and by not carrying indoor air pollutants out of the home. High temperature and humidity levels can also increase concentrations of some pollutants.

Pollutant Sources

There are many sources of indoor air pollution in any home. These include combustion sources such as oil, gas, kerosene, coal, wood, and tobacco products; building materials and furnishings as diverse as deteriorated, asbestos-containing insulation, wet or damp carpet, and cabinetry or furniture made of certain pressed wood products; products for household cleaning and maintenance, personal care, or hobbies; central heating and cooling systems and humidification devices; and outdoor sources such as pesticides, and outdoor air pollution.

The relative importance of any single source depends on how much of a given pollutant it emits and how hazardous those emissions are. In some cases, factors such as how old the source is and whether it is properly maintained are significant. For example, an improperly adjusted gas stove can emit significantly more carbon monoxide than one that is properly adjusted.

Some sources, such as building materials, furnishings, and household products like air fresheners, release pollutants more or less continuously. Other sources, related to activities carried out in the home, release pollutants intermittently. These include smoking, the use of un-vented or malfunctioning stoves, furnaces, or space heaters, the use of solvents in cleaning and hobby activities, the use of paint strippers in redecorating activities, and the use of cleaning products and pesticides in housekeeping. High pollutant concentrations can remain in the air for long periods after some of these activities.

Amount of Ventilation

If too little outdoor air enters a home, pollutants can accumulate to levels that can pose health and comfort problems. Unless they are built with special mechanical means of ventilation, homes that are designed and constructed to minimize the amount of outdoor air that can "leak" into and out of the home may have higher pollutant levels than other homes. However, because some weather conditions can drastically reduce the amount of outdoor air that enters a home, pollutants can build up even in homes that are normally considered "leaky."

Stoves, Heaters, Fireplaces, and Chimneys

In addition to environmental tobacco smoke, other sources of combustion products are un-vented kerosene and gas space heaters, woodstoves, fireplaces, and gas stoves. The major pollutants released are carbon monoxide, nitrogen dioxide, and particles. Un-vented kerosene heaters may also generate acid aerosols.

Combustion gases and particles also come from chimneys and flues that are improperly installed or maintained and cracked furnace heat exchangers. Pollutants from fireplaces and woodstoves with no dedicated outdoor air supply can be "back-drafted" from the chimney into the living space, particularly in weatherized homes.

Health Effects of Combustion Products

Carbon monoxide (CO) is a colorless, odorless gas that interferes with the delivery of oxygen throughout the body. At high concentrations it can cause unconsciousness and death. Lower concentrations can cause a range of symptoms from headaches, dizziness, weakness, nausea, confusion, and disorientation, to chronic fatigue in healthy people and episodes of increased chest pain in people with chronic heart disease. The symptoms of carbon monoxide poisoning are sometimes confused with the flu or food poisoning. Fetuses, infants, elderly people, and people with anemia or with a history of heart or respiratory disease can be especially sensitive to carbon monoxide exposures.

Nitrogen dioxide (NO²) is a colorless, odorless gas that irritates the mucous membranes in the eye, nose, and throat and causes shortness of breath after exposure to high concentrations. There is evidence that high concentrations or continued exposure to low levels of nitrogen dioxide increases the risk of respiratory infection; there is also evidence from animal studies that repeated exposures to elevated nitrogen dioxide levels may lead, or contribute, to the development of lung disease such as emphysema. People at particular risk from exposure to nitrogen dioxide include children and individuals with asthma and other respiratory diseases.

Particles, released when fuels are incompletely burned, can lodge in the lungs and irritate or damage lung tissue. A number of pollutants, including radon and benzo(a)pyrene, both of which can cause cancer, attach to small particles that are inhaled and then carried deep into the lung.

Reducing Exposure to Combustion Products in Homes

Take special precautions when operating fuel-burning un-vented space heaters.

Consider potential effects of indoor air pollution if you use an un-vented kerosene or gas space heater. Follow the manufacturer's directions, especially instructions on the proper fuel and keeping the heater properly adjusted. A persistent yellow-tipped flame is generally an indicator of maladjustment and increased pollutant emissions. While a space heater is in use, open a door from the room where the heater is located to the rest of the house and open a window slightly or turn on a vent fan.

Install and use exhaust fans over gas cooking stoves and ranges and keep the burners

properly adjusted.

Using a stove hood with a fan vented to the outdoors greatly reduces exposure to pollutants during cooking. Improper adjustment, often indicated by a persistent yellow-tipped flame, causes increased pollutant emissions. Ask your gas company to adjust the burner so that the flame tip is blue. If you purchase a new gas stove or range, consider buying one with automatic ignition because it does not have a pilot light that burns continuously. Never use a gas stove to heat your home. Always make certain the flue in your gas fireplace is open when the fireplace is in use.

Keep woodstove emissions to a minimum. Choose properly sized new stoves that are certified as meeting EPA emission standards.

Make certain that doors in old woodstoves are tight-fitting. Use aged or cured (dried) wood only; follow the manufacturer's directions for starting, stoking, and putting out the fire in woodstoves. Chemicals are used to pressure-treat wood; such wood should never be burned indoors.

Have central air handling systems, including furnaces, flues, and chimneys, inspected annually and promptly repair cracks or damaged parts.

Blocked, leaking, or damaged chimneys or flues release harmful combustion gases and particles and even fatal concentrations of carbon monoxide. Strictly follow all service and maintenance procedures recommended by the manufacturer, including those that tell you how frequently to change the filter. If manufacturer's instructions are not readily available, change filters once every month or two during periods of use. Proper maintenance is important even for new furnaces because they can also corrode and leak combustion gases, including carbon monoxide.

Environmental Tobacco Smoke (ETS)

Environmental tobacco smoke (ETS) is the mixture of smoke that comes from the burning end of a cigarette, pipe, or cigar, and smoke exhaled by the smoker. It is a complex mixture of over 4,000 compounds, more than 40 of which are known to cause cancer in humans or animals and many of which are strong irritants. ETS is often referred to as "secondhand smoke" and exposure to ETS is often called "passive smoking."

Health Effects of Environmental Tobacco Smoke

In 1992, EPA completed a major assessment of the respiratory health risks of ETS (Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders EPA/600/6-90/006F). The report concludes that exposure to ETS is responsible for approximately 3,000 lung cancer deaths each year in nonsmoking adults and impairs the respiratory health of hundreds of thousands of children.

Infants and young children whose parents smoke in their presence are at increased risk of lower respiratory tract infections (pneumonia and bronchitis) and are more likely to have symptoms of respiratory irritation like cough, excess phlegm, and wheeze. EPA estimates that passive smoking annually causes between 150,000 and 300,000 lower respiratory tract infections in infants and children under 18 months of age, resulting in between 7,500 and 15,000 hospitalizations each year. These children may also have a build-up of fluid in the middle ear, which can lead to ear infections. Older children who have been exposed to secondhand smoke may have slightly reduced lung function.

Asthmatic children are especially at risk. EPA estimates that exposure to secondhand smoke increases the number of episodes and severity of symptoms in hundreds of thousands of asthmatic children, and may cause thousands of non-asthmatic children to develop the disease each year. EPA estimates that between 200,000 and 1,000,000 asthmatic children have their condition made worse by exposure to secondhand smoke each year. Exposure to secondhand smoke causes eye, nose, and throat irritation. It may affect the cardiovascular system and some studies have linked exposure to secondhand smoke with the onset of chest pain. For publications about ETS, contact EPA's Indoor Air Quality Information Clearinghouse (IAQ INFO), 800-438-4318 or (703) 356-4020.

Reducing Exposure to Environmental Tobacco Smoke

Don't smoke in the home or permit others to do so. Ask smokers to smoke outdoors.

The 1986 Surgeon General's report concluded that physical separation of smokers and nonsmokers in a common air space, such as different rooms within the same house, may reduce - but will not eliminate - non-smokers' exposure to environmental tobacco smoke.

Increase ventilation in the area where smoking takes place if smoking indoors cannot be avoided.

Open windows or use exhaust fans. Ventilation, a common method of reducing exposure to indoor air pollutants, also will reduce but not eliminate exposure to environmental tobacco smoke. Because smoking produces such large amounts of pollutants, natural or mechanical ventilation techniques do not remove them from the air in your home as quickly as they build up. In addition, the large increases in ventilation it takes to significantly reduce

exposure to environmental tobacco smoke can also increase energy costs substantially. Consequently, the most effective way to reduce exposure to environmental tobacco smoke in the home is to eliminate smoking there.

Do not smoke if children are present, particularly infants and toddlers.

Children are particularly susceptible to the effects of passive smoking. Do not allow baby-sitters or others who work in your home to smoke indoors. Discourage others from smoking around children. Find out about the smoking policies of the day care center providers, schools, and other care givers for your children. The policy should protect children from exposure to ETS.

Household Hazardous Waste

What is Household Hazardous Waste?

Some jobs around the home may require the use of products containing hazardous components. Such products may include certain paints, cleaners, stains and varnishes, car batteries, motor oil, and pesticides. The used or leftover contents of such consumer products are known as “household hazardous waste.”

Americans generate 1.6 million tons of household hazardous waste per year. The average home can accumulate as much as 100 pounds of household hazardous waste in the basement or garage and in storage closets. When improperly disposed of, household hazardous waste can create a potential risk to people and the environment. This page describes steps that people can take to reduce the amount of household hazardous waste they generate and to ensure that those wastes are safely stored, handled and disposed of.

What Are the Dangers of Improper Disposal?

Household hazardous wastes are sometimes disposed of improperly by individuals pouring wastes down the drain, on the ground, into storm sewers, or putting them out with the trash. The dangers of such disposal methods may not be immediately obvious, but certain types of household hazardous waste have the potential to cause physical injury to sanitation workers; contaminate septic tanks or wastewater treatment systems if poured down drains or toilets; and present hazards to children and pets if left around the house. While households do not have to separate household hazardous waste from trash under federal law, some states have special requirements. Call local or state solid waste officials to learn what requirements apply to households or small businesses in your area.

Move to Reduce and Recycle

One way to reduce the potential concerns associated with household hazardous waste is to take actions that use nonhazardous or less hazardous components to accomplish the task at hand. Individuals can do this by reducing the amount and/or toxicity of products with hazardous components, and use only the amount needed. Leftover materials can be shared with neighbors or donated to a business charity, or government agency, or given to a household hazardous waste program. Excess pesticide might be offered to a greenhouse or garden center, for example, and theater groups also need surplus paint. Some communities have even organized waste exchanges where household hazardous waste can be swapped or given away.

Recycling is an economical and environmentally sound way to handle some types of household hazardous waste, such as used automobile batteries and oil. Auto parts stores and service stations frequently accept used automobile batteries, and 80 percent of these batteries are currently recycled. In addition, hundreds of local governments working with civic organizations and private firms have implemented successful used oil recycling programs. Many service stations have begun collecting used oil as a service to their customers. Check with local solid waste officials to find out if a used oil recycling program is operating in your area.

Safe Management Methods

Because of the potential risks associated with household hazardous wastes, it is important that people always use, store, and dispose of materials containing hazardous substances

safely:

Tips:

- Use and store products containing hazardous substances carefully to prevent any accidents at home.
- Never store hazardous products in food containers.
- Keep products containing hazardous materials in their original containers and never remove the labels. Corroding containers, however, should be repackaged and clearly labeled. This will prevent accidental ingestion and also can help protect sanitation workers.
- When leftovers remain, never mix household hazardous waste with other products.
- Incompatibilities may react, ignite, or explode; contaminated household hazardous waste may become unrecyclable.
- Follow any instructions for disposal and use provided on the label.
- Take household hazardous waste to a local collection program, if available.

Carbon Monoxide (CO)

Carbon monoxide gas (CO) is an odorless, tasteless, and invisible gas that is produced whenever anything containing carbon is burned. This includes virtually all common fuels like wood, propane, natural gas, gasoline, and oil.

All Alaskans need to safeguard their homes against dangerous and potentially lethal indoor air pollutants. Strategies include:

- Install CO detectors with an audible alarm in your home. Place detectors close to sleeping areas and replace batteries annually.
- Never start your car's engine or leave the motor running in a closed garage.
- Do not use gas ovens to heat your home.
- Do not burn charcoal inside an enclosed space.
- Do not operate gasoline-powered engines in confined areas.
- Have your heating system inspected and cleaned annually.
- Make sure that your furnace is properly vented.
- Make sure that appliances are properly installed and operated according to manufacturers' instructions; select vented appliances whenever possible.

Breathing low levels of carbon monoxide can cause fatigue and increased chest pain in people with chronic heart disease. Breathing higher levels of carbon monoxide causes flu-like symptoms such as headaches, dizziness, and weakness in healthy people. It also causes sleepiness, nausea, vomiting, confusion, and disorientation. At very high levels, it causes loss of consciousness and death.

Any fuel-burning appliance that is not adequately vented and maintained can be a potential source of carbon monoxide, including: gas appliances (furnaces, ranges, ovens, water heater, clothes dryers, etc.); fireplaces, wood and coal stoves, space heaters; charcoal grills, automobile exhaust fumes, camp stoves, gas-powered lawn mowers, and power tools.

Green Cleaning

The Green Cleaning Kit provides you with an effective alternative to toxic chemicals. It is filled with non-toxic, environmentally friendly (and kid, pet, wildlife friendly) cleaning alternatives

Included in the Green Cleaning Kit are a

- 100% cotton towel
- Sponge with non-scratch abrasive
- Vinegar
- Baking Soda
- Lemon Juice
- Dr Bronner's All Purpose Castile Soap
- Rubber gloves and;
- **Clean and Green: The Complete Guide to Non-Toxic and Environmentally Safe Housekeeping** by Annie Bethold-Bond.

Several other books are great resources for more information about Green Cleaning and will be provided to the AmeriCorps member:

Vim & Vinegar: Moisten Cakes, Eliminate Grease, Remove Stains, Kill Weeds, Clean Pots & Pans, Soften Laundry, Unclog Drains, Control Dandruff, Season Salads by Melodie Moore

Baking Soda: Over 500 Fabulous, Fun, and Frugal Uses You've Probably Never Thought of by Vicki Lansky and Martha Campbell

Quick and Easy Green Cleaning Recipes

General Cleaner

Liquid Castile Soap

Use a wet washcloth, rag, or other 100% cloth. Rinse well to avoid film.

Toilet Cleaner

Baking Soda and Liquid Castile Soap

Sprinkle baking soda in toilet. Add drops of soap. Scrub with toilet brush. Use a rag or paper towel and baking soda for outside surface.

Laundry Aid

White Vinegar and Baking Soda

Add ½ cup baking soda and ½ cup white vinegar to laundry machine while water is coming in. Add laundry soap – but about ¾ of what you normally use. Let enough water come in to mix with ingredients before adding clothes. Vinegar smell will disappear by the time the load is finished and will help neutralize any smell from dirty clothes.

Tub and Sink

Baking Soda and Liquid Castile Soap

Use baking soda and a scouring pad or brush to scrub away mildew, soap scum, and dirt.

Add castile soap for additional cleaning and foam.

Furniture Polish

3 T Olive Oil, 1 T White Vinegar, 1 qt. Warm Water and Mineral Oil

Mix ingredients. Apply to wooden furniture with cotton cloth. Vinegar scent was disappear in a few minutes (when dry).

Oven Cleaner

Baking Soda and Water

Mix 1 cup baking soda with enough water to make a thick paste. Apply to oven surface or stove top and let stand. Use a scouring pad or scrubbing pad to clean. Use a spatula to clean off large items. Clean more regularly to keep on top of the build-up.

Drain Cleaner

Baking Soda, Vinegar, Boiling Water, Plunger

Do not try this if sink/tub is full of water, must have water at or below drain level.

This will help with minor clogs or slow draining. Pour ½ cup baking soda down the drain. Follow with ½ cup vinegar. Let fizz. Pour pot of boiling water down the drain. Use a plunger on the drain to remove stubborn clog. Repeat if necessary. This will not eat through pipes as commercial clog removers do.

Window/Glass/Mirror Cleaner

Vinegar and Water

Put ¼ cup vinegar in a spray bottle. Add 1 cup warm water. Spray on window. Use a cotton cloth to dry – lint free is best. Newspaper may work well too. If windows/glass are very dirty, try castile soap and a sponge first.

Mold

Introduction to Molds

Molds produce tiny spores to reproduce. Mold spores waft through the indoor and outdoor air continually. When mold spores land on a damp spot indoors, they may begin growing and digesting whatever they are growing on in order to survive. There are molds that can grow on wood, paper, carpet, and foods. When excessive moisture or water accumulates indoors, mold growth will often occur, particularly if the moisture problem remains undiscovered or un-addressed. There is no practical way to eliminate all mold and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture.

Ten Things You Should Know About Mold

1. Potential health effects and symptoms associated with mold exposures include allergic
2. reactions, asthma, and other respiratory complaints.
3. There is no practical way to eliminate all mold and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture.
4. If mold is a problem in your home or school, you must clean up the mold and eliminate sources of moisture.
5. Fix the source of the water problem or leak to prevent mold growth.
6. Reduce indoor humidity (to 30-60%) to decrease mold growth by: venting bathrooms, dryers, and other moisture-generating sources to the outside; using air conditioners and de-humidifiers; increasing ventilation; and using exhaust fans whenever cooking, dishwashing, and cleaning.
7. Clean and dry any damp or wet building materials and furnishings within 24-48 hours to prevent mold growth.
8. Clean mold off hard surfaces with water and detergent, and dry completely. Absorbent materials such as ceiling tiles, that are moldy, may need to be replaced.
9. Prevent condensation: Reduce the potential for condensation on cold surfaces (i.e., windows, piping, exterior walls, roof, or floors) by adding insulation.
10. In areas where there is a perpetual moisture problem, do not install carpeting (i.e., by drinking fountains, by classroom sinks, or on concrete floors with leaks or frequent condensation).

Molds can be found almost anywhere; they can grow on virtually any substance, providing moisture is present. There are molds that can grow on wood, paper, carpet, and foods.

Basic Mold Cleanup

The key to mold control is moisture control. It is important to dry water damaged areas and items within 24-48 hours to prevent mold growth. If mold is a problem in your home, clean up the mold and get rid of the excess water or moisture. Fix leaky plumbing or other sources of water. Wash mold off hard surfaces with detergent and water, and dry completely. Absorbent materials (such as ceiling tiles & carpet) that become moldy may have to be replaced.

Moisture Control

Water in your home can come from many sources. Water can enter your home by leaking or

by seeping through basement floors. Showers or even cooking can add moisture to the air in your home. The amount of moisture that the air in your home can hold depends on the temperature of the air. As the temperature goes down, the air is able to hold less moisture. This is why, in cold weather, moisture condenses on cold surfaces (for example, drops of water form on the inside of a window). This moisture can encourage biological pollutants to grow.

There are many ways to control moisture in your home:

- Fix leaks and seepage. If water is entering the house from the outside, your options range from simple landscaping to extensive excavation and waterproofing. (The ground should slope away from the house.) Water in the basement can result from the lack of gutters or a water flow toward the house. Water leaks in pipes or around tubs and sinks can provide a place for biological pollutants to grow.
- Put a plastic cover over dirt in crawlspaces to prevent moisture from coming in from the ground. Be sure crawlspaces are well-ventilated.
- Use exhaust fans in bathrooms and kitchens to remove moisture to the outside (not into the attic). Vent your clothes dryer to the outside.
- Turn off certain appliances (such as humidifiers or kerosene heaters) if you notice moisture on windows and other surfaces.
- Use dehumidifiers and air conditioners, especially in hot, humid climates, to reduce moisture in the air, but be sure that the appliances themselves don't become sources of biological pollutants.
- Raise the temperature of cold surfaces where moisture condenses. Use insulation or storm windows. (A storm window installed on the inside works better than one installed on the outside.) Open doors between rooms (especially doors to closets which may be colder than the rooms) to increase circulation. Circulation carries heat to the cold surfaces. Increase air circulation by using fans and by moving furniture from wall corners to promote air and heat circulation. Be sure that your house has a source of fresh air and can expel excessive moisture from the home.
- Pay special attention to carpet on concrete floors. Carpet can absorb moisture and serve as a place for biological pollutants to grow. Use area rugs which can be taken up and washed often. In certain climates, if carpet is to be installed over a concrete floor, it may be necessary to use a vapor barrier (plastic sheeting) over the concrete and cover that with sub-flooring (insulation covered with plywood) to prevent a moisture problem.
- Moisture problems and their solutions differ from one climate to another. In the U.S., The Northeast is cold and wet; the Southwest is hot and dry; the South is hot and wet; and the Western Mountain states are cold and dry. All of these regions can have moisture problems. For example, evaporative coolers used in the Southwest can encourage the growth of biological pollutants. In other hot regions, the use of air conditioners which cool the air too quickly may prevent the air conditioners from running long enough to remove excess moisture from the air. The types of construction and weatherization for the different climates can lead to different problems and solutions.