

# Exploring a Smoke Ready Communities Program

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Smoke Management in the Northwest  
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# Wildfire Smoke Response

During a wildfire, the public wants information related to smoke to better inform their health decisions

The focus has been providing information on how to protect yourself from smoke and where to find smoke-related information *during a wildfire*



Air Resource Advisors (ARAs) provide on-the-ground coordination for smoke communications

Communications materials and cooperative partnerships must be in place beforehand



# Smoke Ready Communities

## “Addressing Public Health Concerns *before* a Wildfire Smoke Event”

OAQPS and ORD, along with our partners in the US Forest Service, recognized a gap in the important information available *before* a wildfire smoke event

We needed to learn more from our stakeholders on what’s been done and what will be effective in a voluntary Smoke Ready Communities program

### Main Questions

What would a *Smoke Ready Community* look like to you?

What are the key components that would make a community *Smoke Ready*?

How is air quality information currently being shared and disseminated?

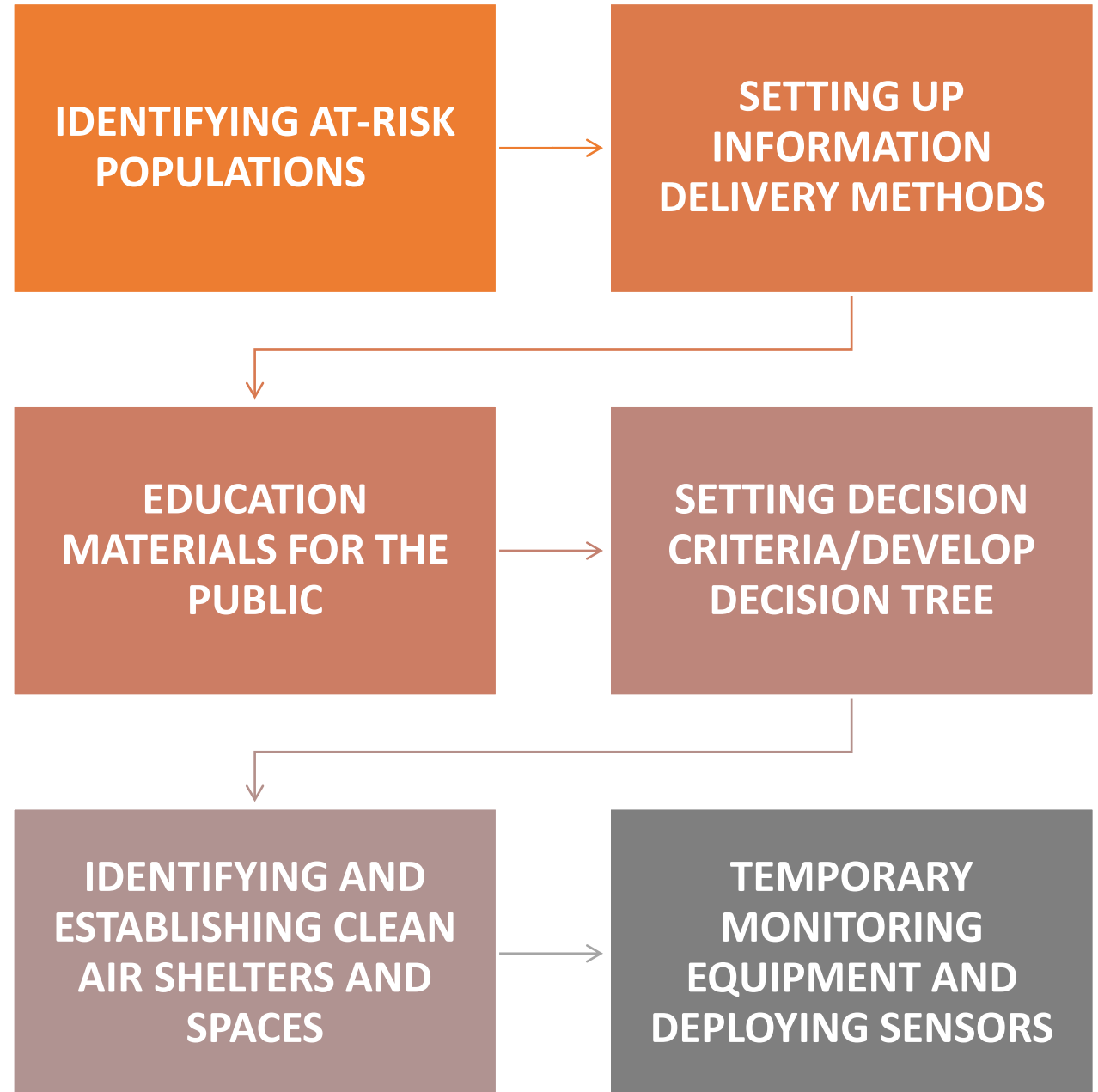
### *Are you a Smoke Ready Community?*



# Key Concepts in Becoming a Smoke Ready Community

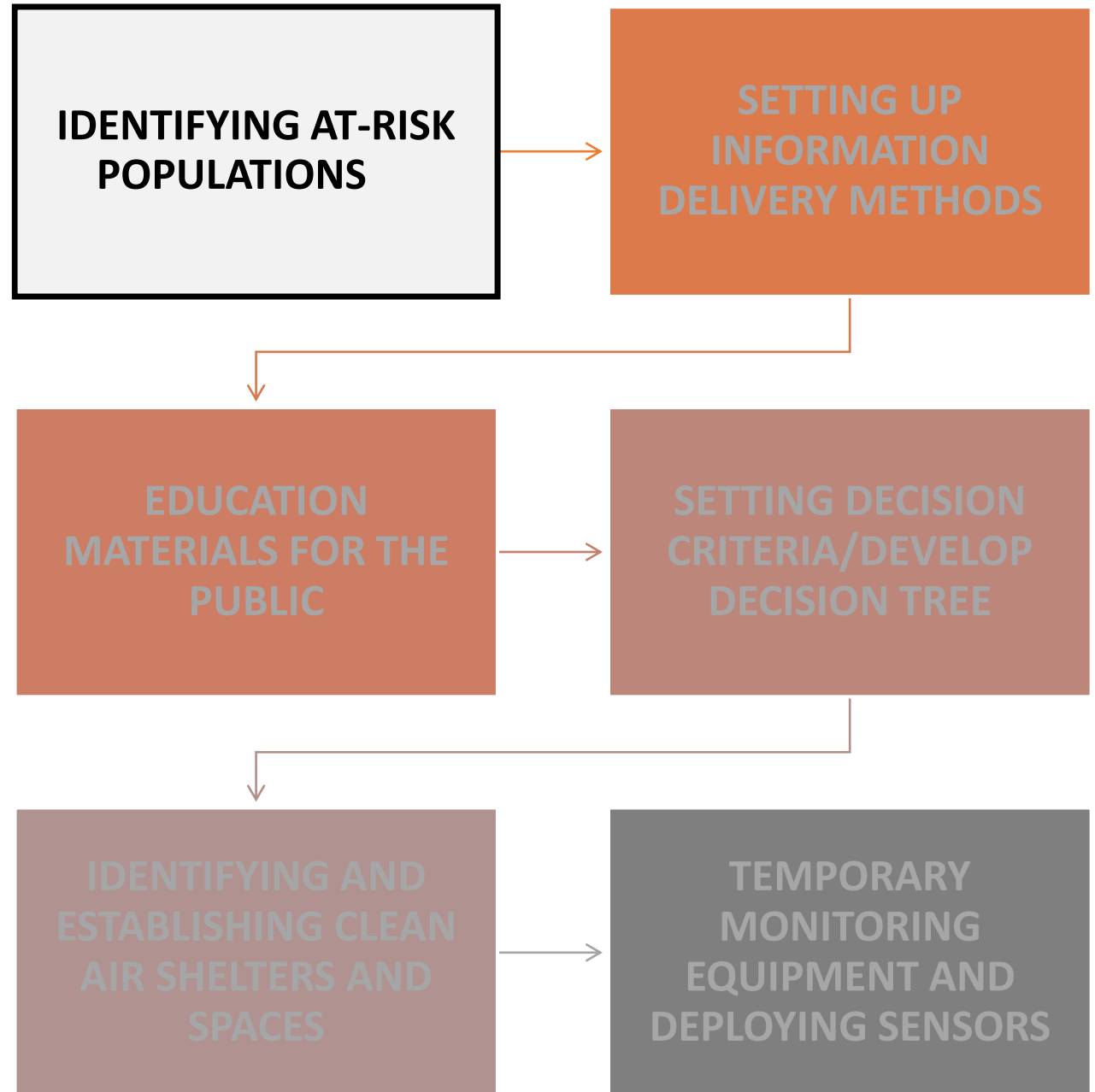


Credit: SF Gate

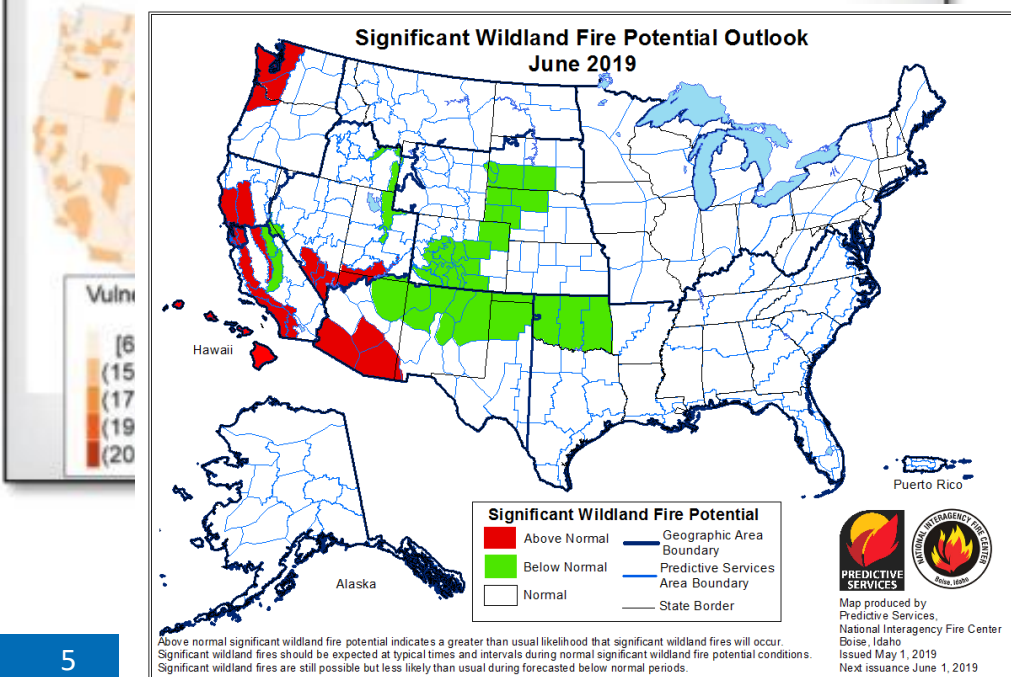


# Who are most vulnerable to the smoke?

# What assistance will be needed?



National map of community-health vulnerability index and air pollution awareness to adverse health effects



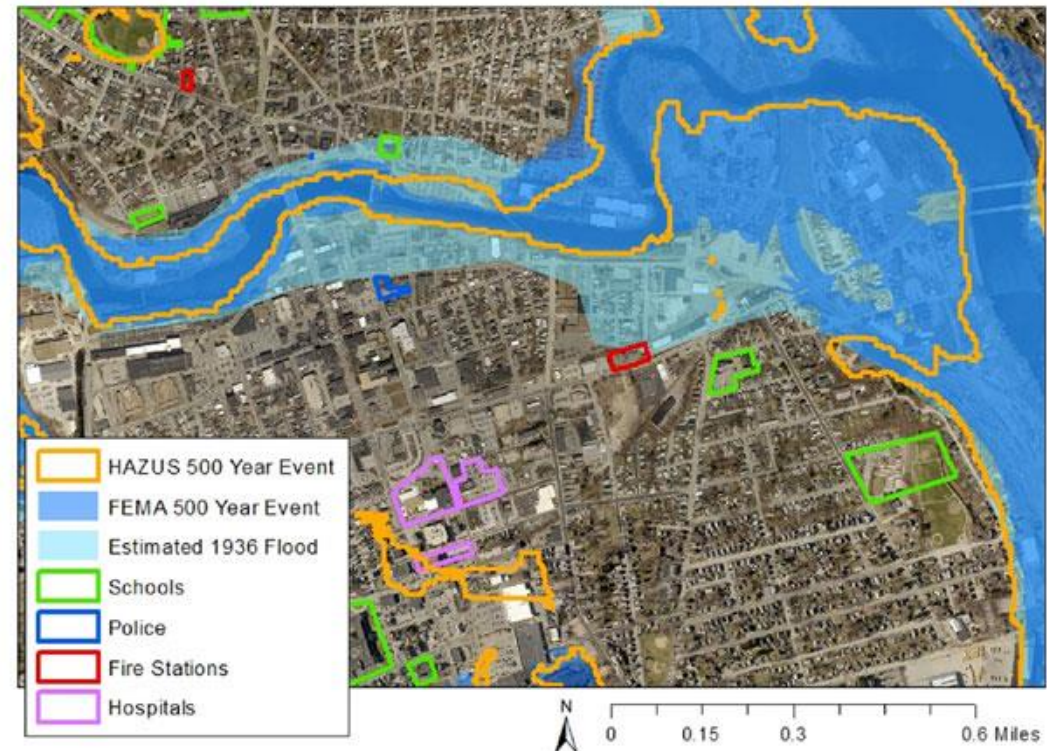
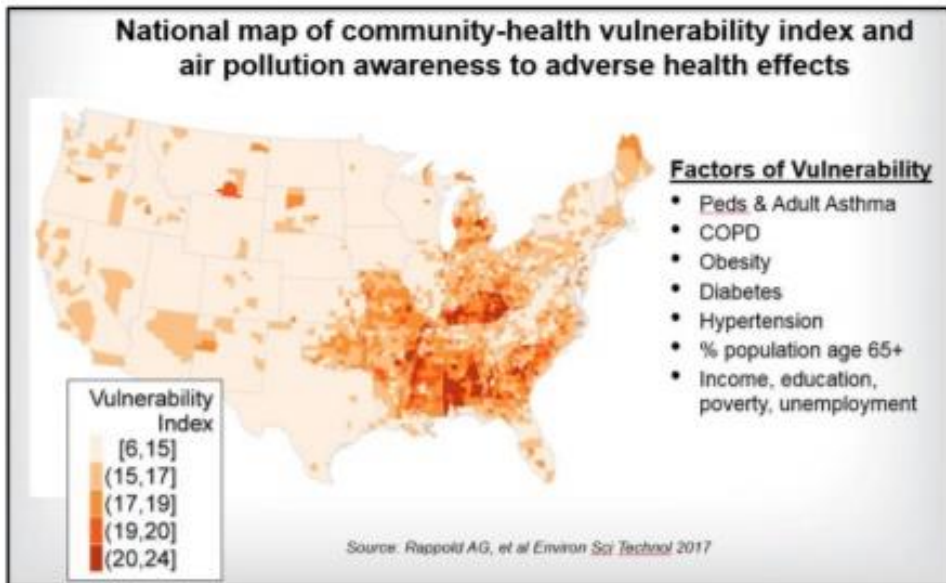


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to the smoke?

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**IDENTIFYING AT-RISK  
POPULATIONS**

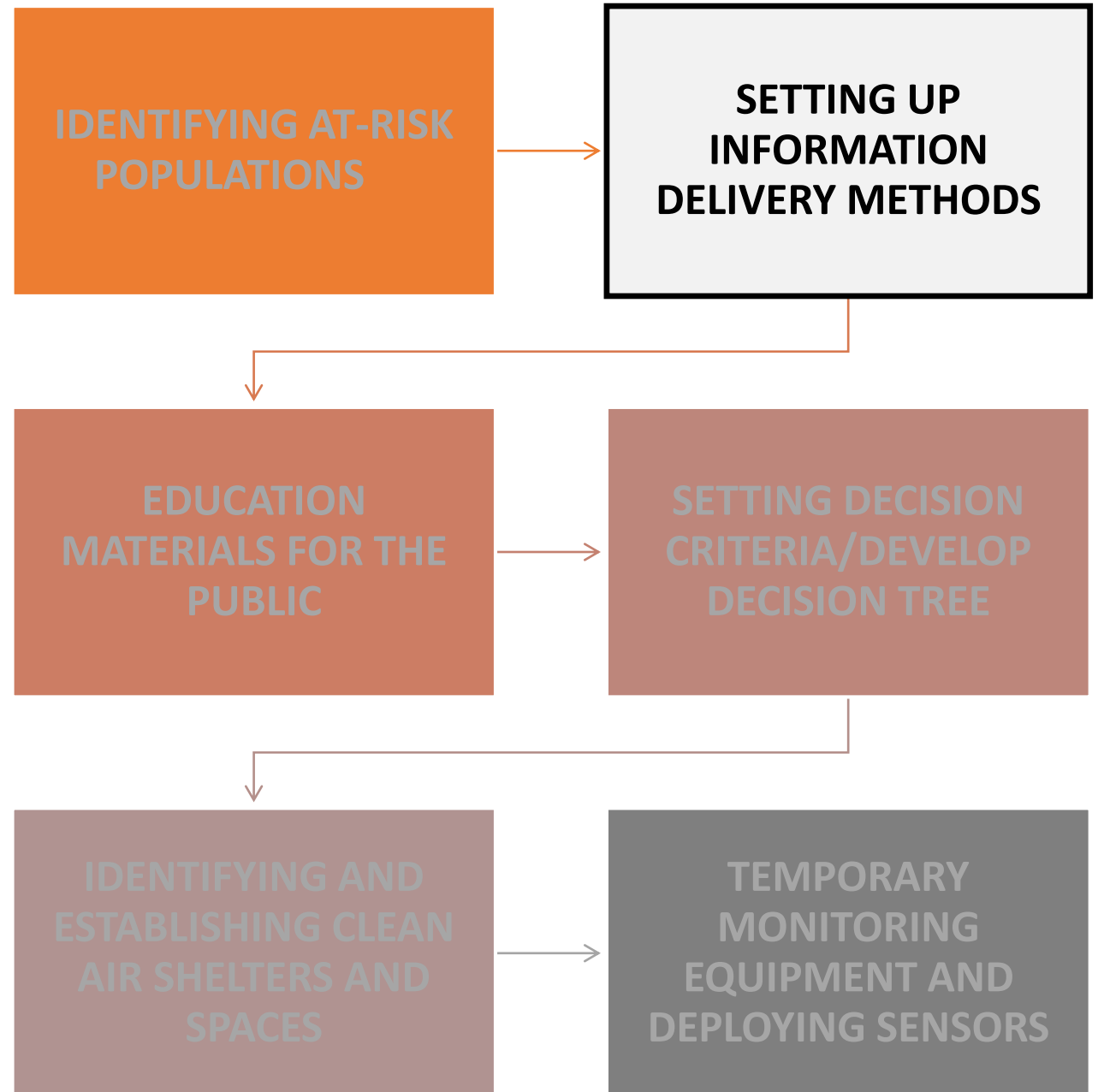
Schools  
Hospitals  
Assisted Living  
Retirement Communities



<http://nasec.org/>

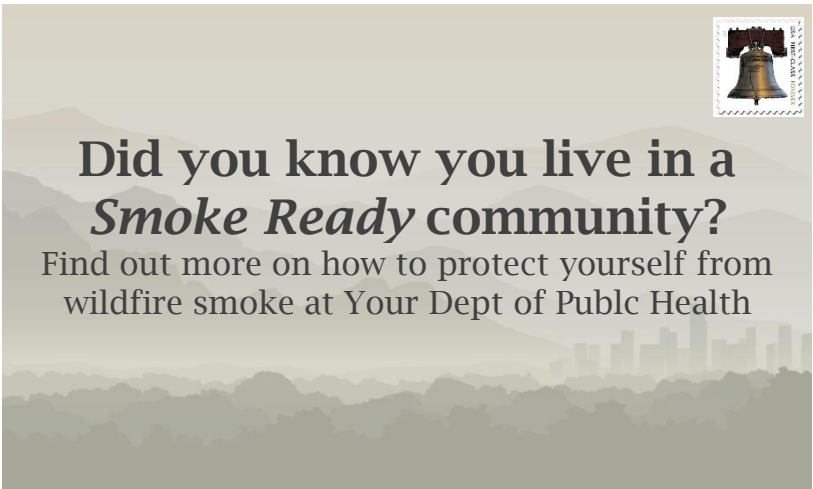
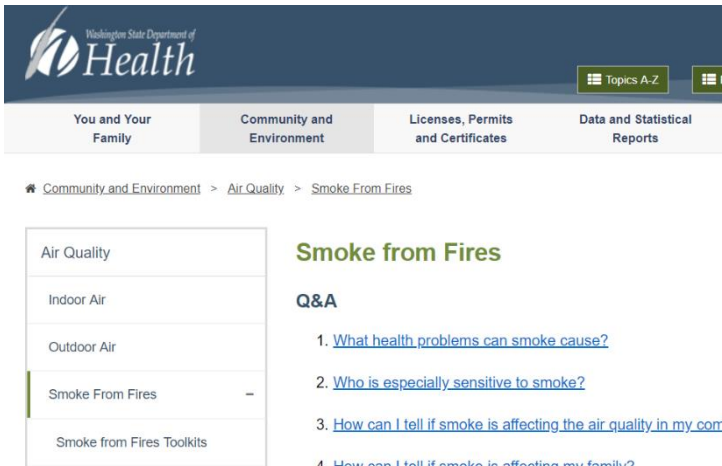
Who is the trusted voice in the community to deliver the messages?

Determine how the information will be received



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Determine how the information will be received





# Prepare and distribute existing information ahead of time

## WILDFIRE SMOKE FACTSHEET

### Prepare for Fire Season

If you live in an area that is regularly affected by smoke or where the wildfire risk is high, take steps to prepare for fire season. Know how to get ready before a wildfire. Know how to protect yourself from smoke exposure during a wildfire.

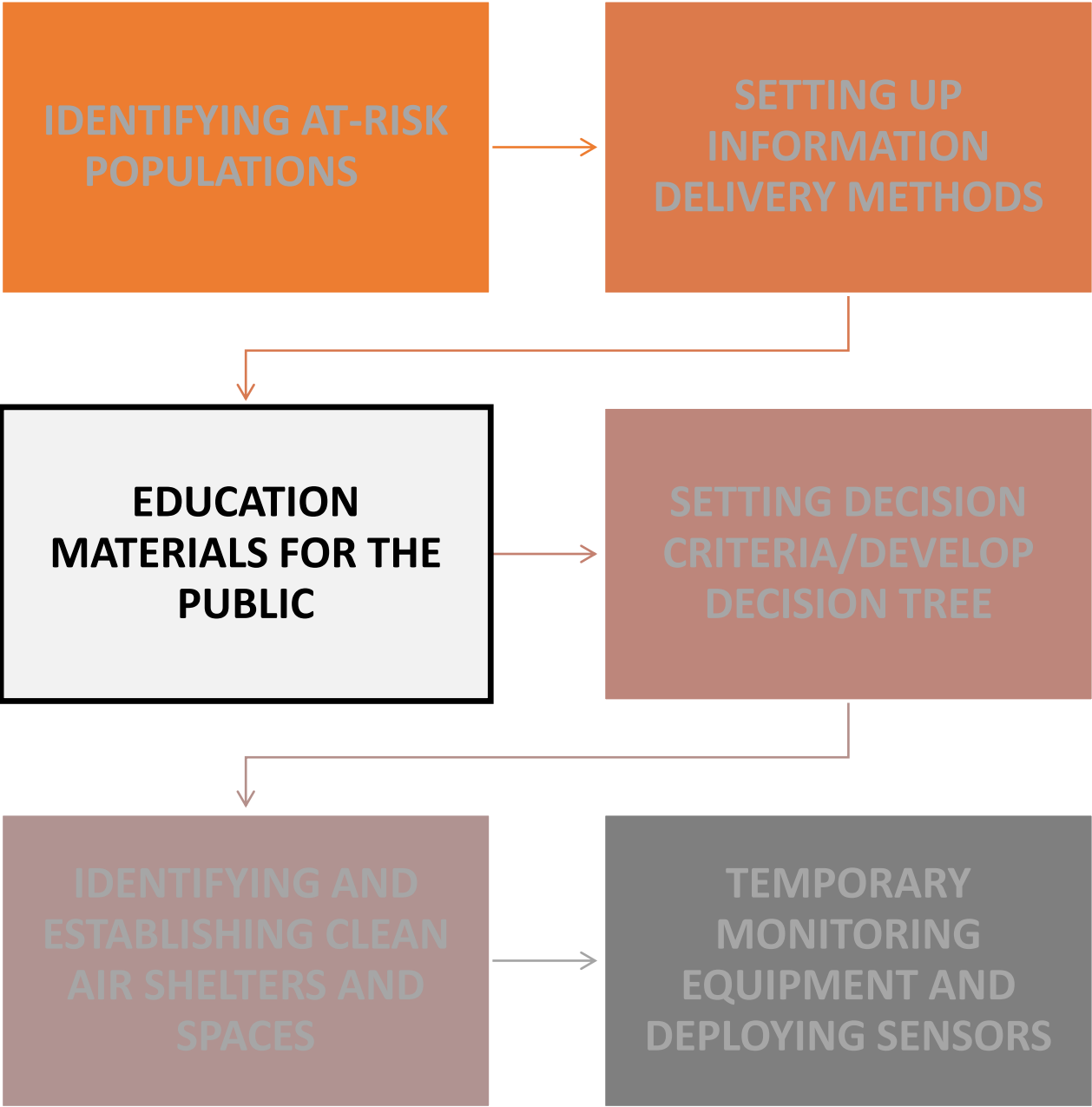
Being prepared for fire season is especially important for the health of children, older adults, and people with heart or lung disease.

#### Prepare Before a Wildfire

- Stock up** so you don't have to go out when it's smoky. Have several days of medications on hand. Buy groceries that do not need to be refrigerated.
- Create a fire plan.** Choose a route out of your home as well as a portable shelter. Identify sources of clean air.
- Buy a portable air purifier.** A smoke evictor (HEPA) filter can help reduce smoke exposure.
- Understand your health.** Health and public officials can help you understand your health and the health of your community.

**Be Ready! Wildfires**

- Windows/Vents:** Close all windows, doors, vents, and attics before smoke arrives.
- Smoke Detector:** Install a smoke detector in each bedroom and on each level of your home. Test monthly and change the batteries at least once each year.
- Flame/Smoke:** Smoke from wildfires is a mixture of gases and fine particles. Smoke can irritate your eyes, irritate your respiratory system, and worsen chronic heart and lung diseases. Listen and watch for air quality reports and health warnings about smoke. You can suffer from smoke even if you are not in the direct path of the wildfire.
- Radio:** Use a radio to listen for updates on wildfire status for information and instructions from local officials. IF ADVISED TO EVACUATE, DO SO IMMEDIATELY.
- Firewood:** Stack firewood away from your home.
- Vegetation:** Clean gutters, take leaves, and remove dead limbs from around your home.
- Water:** If there is the threat of a wildfire, you can use your hose or sprinkler to wet your roof and eaves around your home.
- Go-Kit:** Have a disaster supply kit ready to take with you.
- Escape Route:** Mark a route out of your home. Do not use your car as an escape route.



# Smoke Ready Toolbox

<https://www.epa.gov/smoke-ready-toolbox-wildfires>

Environmental Topics
Laws & Regulations
About EPA


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## Smoke-Ready Toolbox for Wildfires


Smoke from wildfires in the United States is adversely affecting air quality and potentially putting more people at health risk from smoke exposure. EPA and the U.S. Forest Service (USFS) are partnering to identify ways the public can prepare to reduce their health risk *before* a wildfire. Public health officials and others can use the resources in the Smoke-Ready Toolbox to help educate people about the risks of smoke exposure and actions they can take to protect their health.

### Smoke & Your Health




- [AirNow](#)
- [Smoke Advisories](#)
- [Fires and Your Health](#)
- [Frequent Questions](#)
- [Smoke Sense App](#)
- [Prepare for Natural Disasters and Recovery](#)
- [Wildfires and Indoor Air Quality](#)

### Current Fires




- [Current Fires](#)
- [Current Fire Incident Information System](#)
- [NOAA Smoke Forecast Tool](#)
- [NOAA's Fire Weather Outlook](#)
- [GEOMAC Wildland Fire Support](#)
- [MODIS Active Fire Mapping](#)
- [National Interagency Coordination Center](#)
- [National Interagency Fire Center](#)

### For Health Professionals



### Other Resources



#### Featured Resources

New resource en español now available:

- [Caja de herramientas "Smoke Ready" \(Listo para el humo\) para incendios forestales](#)
- [Blog: Using the Smoke Sense App During the Camp fire in California](#)

## Wildland Fire Research Fact Sheets

- [Fact Sheet on Smoke Sense App](#)
- [Community Health Vulnerability Index](#)
- [Wildland Fire Research to Protect Health and the Environment](#)

## Other Federal Government Resources

- [Wildfires and Indoor Air Quality](#)
- [Create a Clean Room to Protect Indoor Air Quality](#)
- [Particulate Matter \(PM\) Pollution](#)
- [EPA Wildland Fire Research](#)
- [U.S. Forest Service Wildland Fire and Air Quality Response Program](#)
- [Centers for Disease Control and Prevention Wildfires webpage](#)
- Agency Technical Contacts
  - EPA Technical Contact: Ali Kamal, [kamal.ali@epa.gov](mailto:kamal.ali@epa.gov)
  - USFS Technical Contact: Pete Lahm, [peter.lahm@usda.gov](mailto:peter.lahm@usda.gov)

## State Government Resources

- [California Certified Air Cleaning Devices](#) EXIT
- [Santa Barbara County Air Pollution Control District](#) EXIT
- [California Air Resources Board](#) EXIT
- [Oregon Health Authority: Wildfires and Smoke](#) EXIT
- [Oregon Wildfire Risk Explorer](#) EXIT
- [New Mexico Fire Information](#) EXIT

[Contact Us](#) to ask a question, provide feedback, or report a problem.

# Repackage and distribute existing information ahead of time

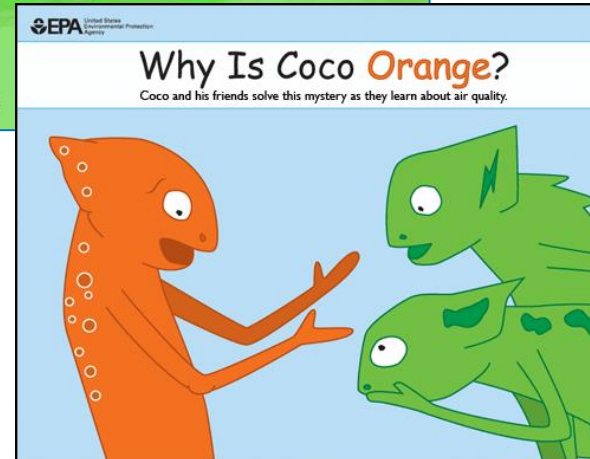
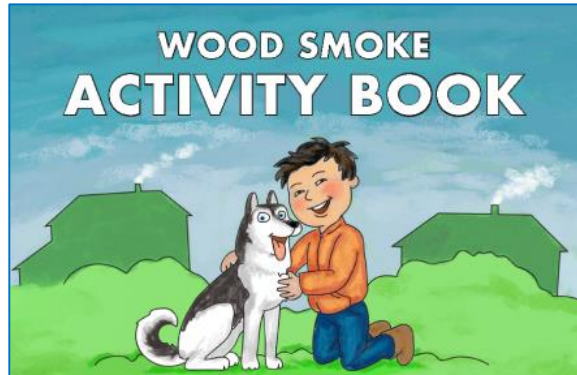
## WILDFIRE SMOKE FACTSHEET

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#### Prepare Before a Wildfire

- **Stock up** so you don't have to go out when it's smoky. Have several days of medications on hand. Buy groceries that do not need to be refrigerated or cooked, because cooking can add to indoor particle levels.
- **Create a "clean room"** in your home. Choose a room with as few windows and doors as possible, such as a bedroom. Use a portable air cleaner and avoid indoor sources of pollution.
- **Buy a portable air cleaner** before there is a smoke event. High-efficiency particulate air (HEPA) filter air cleaners, and electrostatic precipitators that do not produce ozone, can help reduce indoor particle levels.
- **Understand** how you will receive alerts and health warnings, including air quality reports and public service announcements, from local officials.
- **If you have heart or lung disease**, check with your doctor about what you should do during smoke events.
- **If you have asthma or another lung disease**, update your respiratory management plan.
- **Have a supply of N95 masks** and learn how to use them. They are sold at many home improvement stores and online.
- **Organize** your important items ahead of time and know where to go in case you have to evacuate.



**DO YOU KNOW YOUR ROLE?**  
Learn what you can do to help your community become fire adapted.

**Visit [FireAdapted.org](https://fireadapted.org)**

CIVIC LEADERS	DEVELOPERS AND BUSINESS OWNERS	FIRST RESPONDERS	LAND MANAGERS	HOMEOWNERS
<ul style="list-style-type: none"> <li>Require defensible space around structures</li> <li>Don't allow development in high risk areas</li> <li>Follow safety codes to regulate building materials &amp; locations</li> </ul>	<ul style="list-style-type: none"> <li>Don't build in high risk areas</li> <li>Make sure developments have adequate defensible space</li> <li>Use non-combustible building materials</li> </ul>	<ul style="list-style-type: none"> <li>Use the Ready, Set, Go! program</li> <li>Educate your jurisdiction about fire adapted communities</li> <li>Create a fire plan with other emergency responders</li> </ul>	<ul style="list-style-type: none"> <li>Treat hazardous fuels to reduce risk from wildfire</li> <li>Identify &amp; assess wildfire risk on the land you manage</li> <li>Work collaboratively to reduce risk on the land you manage</li> </ul>	<ul style="list-style-type: none"> <li>Become a Firewise Community</li> <li>Create 100 feet of defensible space</li> <li>Keep roof &amp; gutters clean</li> </ul>

Nearly 70,000 communities are at risk from wildfires and billions are spent each year to fight them. Reduce your risk by creating and implementing a Community Wildfire Protection Plan.

**Burn Wise**  
Program of U.S. EPA

**WOOD SMOKE AND YOUR HEALTH**

Wood smoke may smell good but it's not good for you. With a few simple steps you can help reduce wood smoke to protect your health and the air we breathe.

**DID YOU KNOW?**  
One old, inefficient wood stove can emit as much air pollution as 5 dirty old diesel trucks.

**Tiny particles in wood smoke can affect your health**

HEART IMPACTS	LUNG IMPACTS	WHO IS AT GREATER RISK?
Increases the risk of heart attack, irregular heartbeat, heart failure, stroke and early death.	Triggers asthma attacks and aggravates other lung diseases and damages children's lungs.	Older adults Children and teens People with heart or lung disease

**Four easy steps to reduce wood smoke**

1. Burn dry, seasoned wood that has been split, stacked, covered and stored.
2. Test wood with a moisture meter (20% moisture or less is best).
3. Use a cleaner-burning gas or wood stove.
4. Provide sufficient air to the fire; never let it smolder.

Learn more at [www.epa.gov/burnwise](https://www.epa.gov/burnwise)



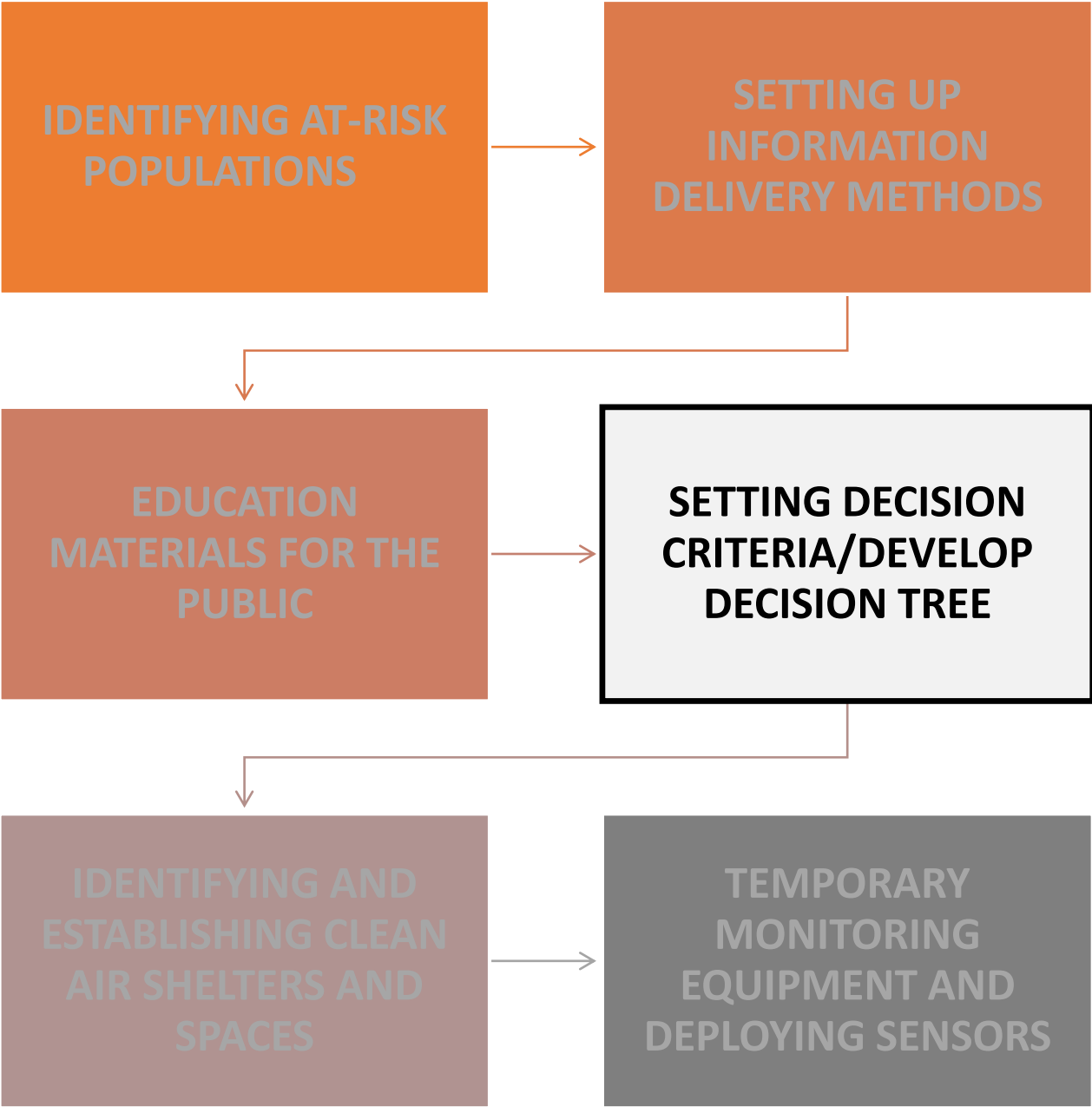
# Every community will need set its own decision points and response plan



## Public Health Guidance: School Outdoor Activities During Wildfire Events

Check the local Air Quality Index (AQI) online (<http://www.deq.state.or.us/aqi/>) and do a visual inspection outside.\* Compare the AQI and visibility test to determine the air conditions in your community. Then, use the guide below to determine activity level for your students.\*\*

Air Quality Index	Visibility Scale	Recess (15 min)	P.E. (1 hr)	Athletic events and practices (2-3 hrs)
Good	> 5 miles with no noticeable haze in the air	Great day to be active outdoors!	Great day to be active outdoors!	Great day to be active outdoors!
Moderate	5-15 miles with noticeable haze in the air	It is a good day for students to be active outside. • Watch students who are unusually sensitive to air pollution for symptoms of shortness of breath or coughing.	• Watch students who are unusually sensitive to air pollution. • Look for symptoms of shortness of breath or coughing. • Monitor symptoms and reduce or cease activity if symptoms arise.	• Watch students who are unusually sensitive to air pollution. • Look for symptoms of shortness of breath or coughing. • Increase rest periods and make substitutions for these students as needed. • Monitor symptoms and reduce or cease activity if symptoms arise.
Unhealthy for sensitive groups	3-5 miles	It is an OK day for students to be active outside. • Allow students who are unusually sensitive to air pollution to stay indoors if they'd like.	• Move activities indoors for students sensitive to air pollution. • Limit other students to light outdoor activities or move the activities indoors. • Increase rest periods and make substitutions. • Monitor symptoms and reduce or cease activities if symptoms arise.	• Move activities indoors for students sensitive to air pollution. • Limit other students to light outdoor activities or move the activities indoors. • Increase rest periods and make substitutions. • Monitor symptoms and reduce or cease activities if symptoms arise.
Unhealthy	1-3 miles	• Consider keeping all students indoors or allowing only light outdoor activity. • Move activities indoors for students sensitive to air pollution.	• Move activities indoors for students sensitive to air pollution. • Consider moving all activities indoors. • Limit all students to light activities. • Increase rest periods and make substitutions.	Consider any of the following: • Cancel the event. • Move the event indoors. • Postpone the event. • Move the event to an area with "good" air quality.





Every community will  
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Oregon  
Health  
Authority



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## WHEN SHOULD WE....

...tell people to prepare for smoke prior to wildfire season?

...send out alerts on approaching smoke?

...cancel outdoor festivals, sports practices and games?

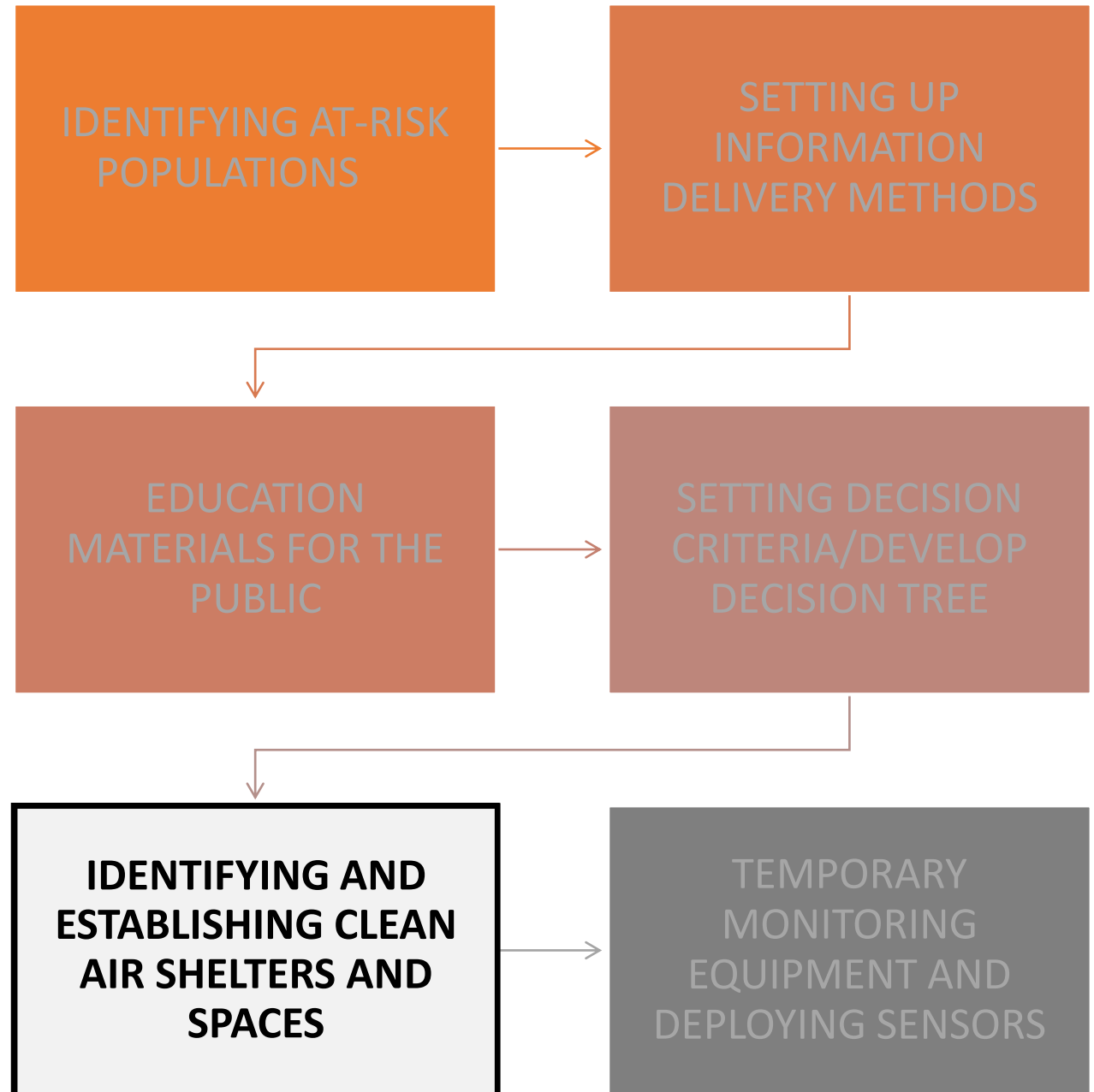
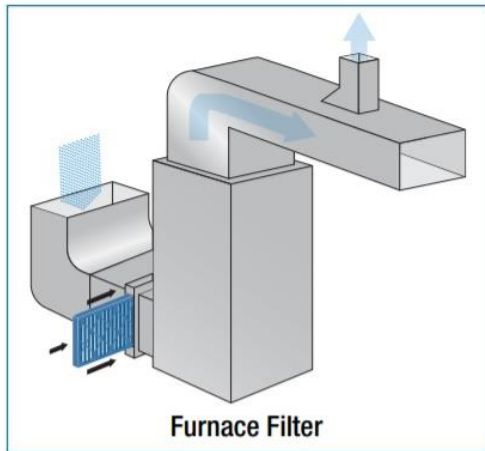
...send kids home from school?

...cancel summer camps?

...open cleaner air shelters?

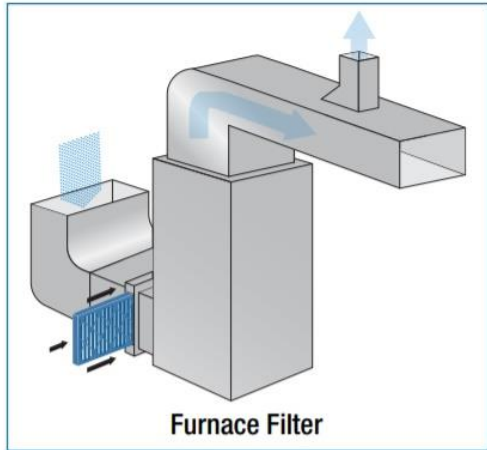
Know what it takes to be  
a clean air shelter and  
where is safe for most  
vulnerable populations

Education materials on  
in-home filtration



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## COMMUNITY-LEVEL CLEAN AIR SHELTER

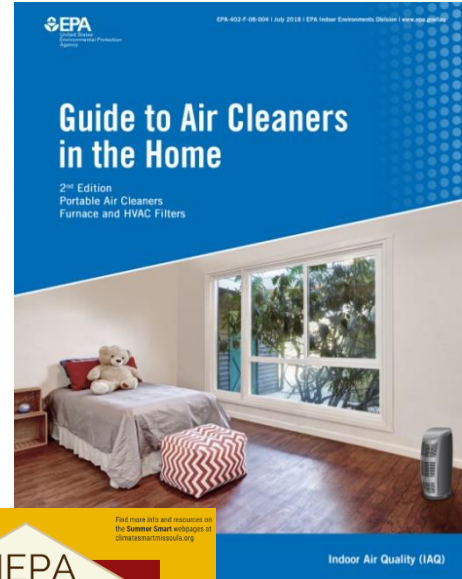
Equipping Schools,  
Libraries, Community  
Centers, etc. with  
adequate protection from  
wildfire smoke

## IDENTIFYING AND ESTABLISHING CLEAN AIR SHELTERS AND SPACES

## Guidelines

Recommended Practices for

Filtration for Schools



## IN-HOME CLEAN AIR SPACES

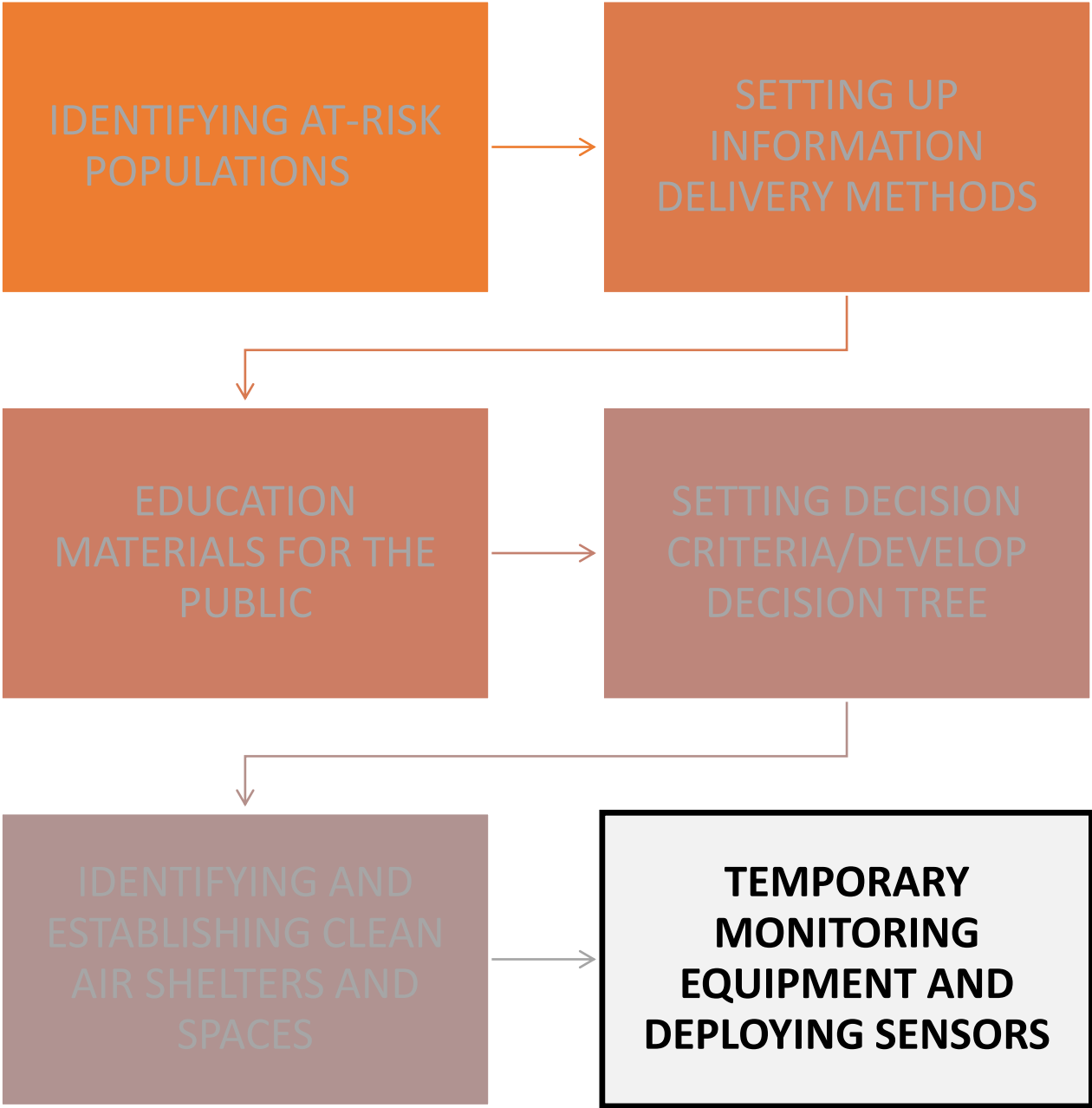
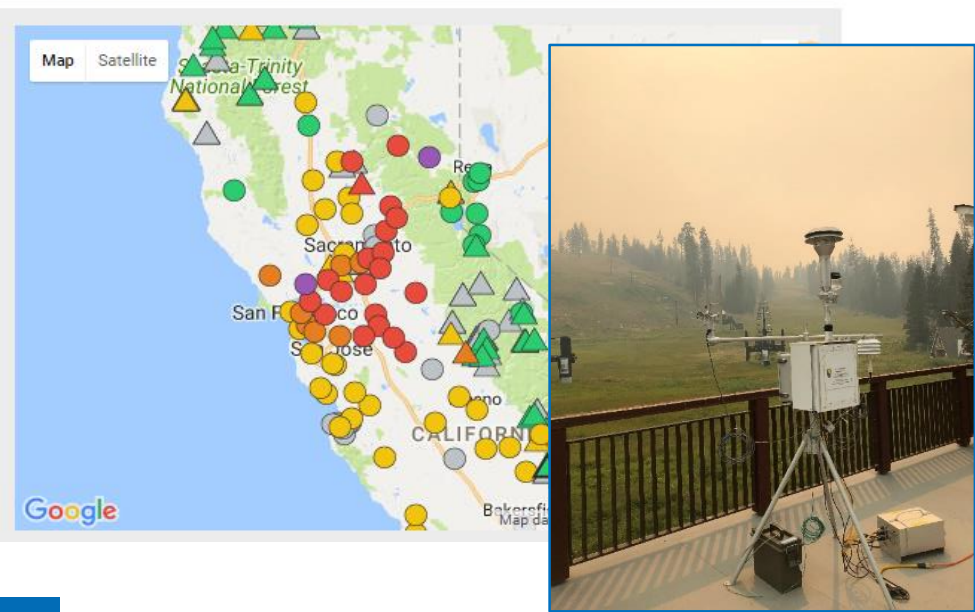
- Educational materials on HVAC filters and Indoor Air Cleaners
- Identifying funds to purchase and dispense to those in need

Coordinate with ARAs when possible

Know how to message communities on sensors



Last Updated      AIRSIS: 19:13 on 10/11    WRCC: 19:17 on 10/11    AirNow: 19:27 on 10/11





# Next Steps

## As we move forward....

Any suggested action plans we recommend must acknowledge the cultural sensitivities and financial realities across the diverse communities we are trying to reach

We can't do this alone!  
We need partnerships and support from the local community leaders, tribal leaders, State officials and the EPA Regional offices.

## How we move forward....

Reach out to Federal Agencies, State/Local/Tribal Groups and find partners

Identify programs to model or partner with to effectively reach communities

Start talking on the concepts and find a pilot community



# Thank you!

## Questions?

Ali Kamal – US EPA  
Kamal.Ali@epa.gov

[epa.gov/smoke-ready-toolbox-wildfires](https://epa.gov/smoke-ready-toolbox-wildfires)  
[wildlandfiresmoke.net](https://wildlandfiresmoke.net)







# Sensor Challenge



Evaluate and “challenge” less-expensive measurement equipment (sensor nodes) that can fill the spatial gaps during wildfire events