



Columbia River Gorge Community Response Plan

Prepared by: Oregon State University Extension Service

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Table of Contents

Thank You to our Partners, Reviewers, and Subcontractors.....	3
Executive Summary	4
Introduction and Background.....	6
Air Pathways through the Gorge	8
State of Oregon Required Components of a Community Response Plan	10
Timeline of Columbia River Gorge Community Response Plan for Wildfire Smoke & Related Smoke Work	11
Analysis of Fire, Smoke, and Air Quality.....	12
Air Quality Index (AQI).....	13
Pile Burning and Prescribed Burns	17
Descriptions of Smoke-Vulnerable Populations in the Gorge	18
Impacts to Local Industries During Smoke Events.....	28
Community Input on the Community Response Plan (CRP)	32
Means of Communication and Notification to the Public About Fire, Smoke Impacts, and Air Quality	37
Community Response Plan Detailed Protocol.....	41
Website and Facebook Links Referred to in Community Response Plan:.....	46
Additional and Adjacent Air Quality and Smoke Work	47
Alternatives to Burning.....	48
Conclusion	48
References and Sources Cited:	49
Appendix 1: Organizations Representing Smoke-Sensitive/Vulnerable Populations in the Columbia River Gorge	55
Appendix 2: Air Quality Guide for Particle Pollution	57
Appendix 3: OHA Air Quality and Outdoor Activity Guidance for Infants, Children and Youth.....	59
Appendix 4: How to Build a Low-Cost Air Filter	61
Appendix 5: Combined Results of the Community Response Plan for Columbia Gorge Region:	63
Appendix 6: Results of the Community Response Plan by County: Hood River	63
Appendix 7: Results of the Community Response Plan by County: Wasco.....	63
Appendix 8: Results of the Community Response Plan by County: Sherman	63
Appendix 9: Results of the Community Response Plan by County: Klickitat	63
Appendix 10: Results of the Community Response Plan by County: Skamania.....	63

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Executive Summary

In the spring of 2023, the Columbia Gorge completed its Smoke Management Community Response Plan with grant funding from the Oregon Department of Environmental Quality (DEQ). The community response plan will help protect the health of people in the Columbia Gorge from smoke impacts while building wildfire resilience through prescribed burning. The county's plan followed recommendations from DEQ and the Oregon Department of Forestry (ODF) and complies with OAR 629-048-0180. The plan also addresses the Smoke Sensitive Receptor Area (SSRA), as a community that experiences smoke events - as described in OAR 629-048-0140. The Oregon Department of Forestry and the Oregon Department of Environmental Quality have recommended that communities that are Smoke Sensitive Receptor Areas and have experienced repeated smoke events and/or intrusions in the past collaboratively develop a community response plan (CRP) and program.



Figure 1-Map of Columbia Gorge Region

This document includes:

1. Analyses of fire, smoke, and air quality in the Columbia River Gorge (“Gorge”)
2. A description of smoke-vulnerable populations in the Gorge
3. The different means of communication and notification to the public about fire, smoke impacts, and air quality. This description includes the various communication practices, and when possible, identifies implementation and action steps with examples. Its scope includes the general population as well as those in smoke sensitive and vulnerable groups
4. A suggested communication plan between entities conducting prescribed fires, the local public health authority, and the community’s public and vulnerable populations who may be impacted by smoke
5. Additional options to protect the health of vulnerable populations and their short-term exposure to smoke
6. A series of “action items” that the cities and counties in the Gorge may consider for implementation.

The goals of the Columbia Gorge Community Response Plan are to:

- Provide information and mitigation strategies for those in the community who are adversely affected by smoke to cope during planned short-term smoke events and wildfire events,
- Promote communication between the entities that conduct prescribed fire, the local public health authority, vulnerable populations, and the public
- Develop an efficient and effective communication and notification system for residents in the Columbia River Gorge who are impacted by short-term smoke events, particularly the smoke-vulnerable populations,
- Clarify the actions people can take to mitigate the health impacts of smoke exposure,
- Emphasize smoke readiness and preparation,
- Address and mitigate increasingly frequent and severe wildfires, and
- Increase the health and safety of the community.

Introduction and Background

The Columbia River Gorge (“Gorge”) and greater Pacific Northwest have experienced some of the highest smoke levels in the world in recent years. Historically, the Gorge, along with other eastside fire regimes, has experienced frequent, low-severity fire events caused by lightning strikes and Indigenous tribal burning practices (Haugo et al., 2019). Naturally occurring fire events like lightning strikes and low-severity intentional burning create adapted forests that are more resilient to fire and have prevented dangerous and high-severity fire events from happening. Traditionally, indigenous tribes in the area conducted prescribed burns in order to maintain healthy forests and grasslands, a tradition that has since been lost after colonization and the forced removal of tribal communities (Haugo et al., 2019). Today, millions of hectares of forest in the eastside Cascades of Oregon and Washington have accumulated excessive fuel and undergone structural stand alteration over the past century, priming them for uncharacteristically severe wildfires (Reilly et al., 2022 & Haugo et al., 2019). And where there are fires, there is also smoke. For much of our recent history, residents of the Gorge have not had to worry too much about wildfire smoke. However, the last 5-10 years have begun to shift our perspective, and a late summer ‘smoke season’ is unfortunately becoming expected.

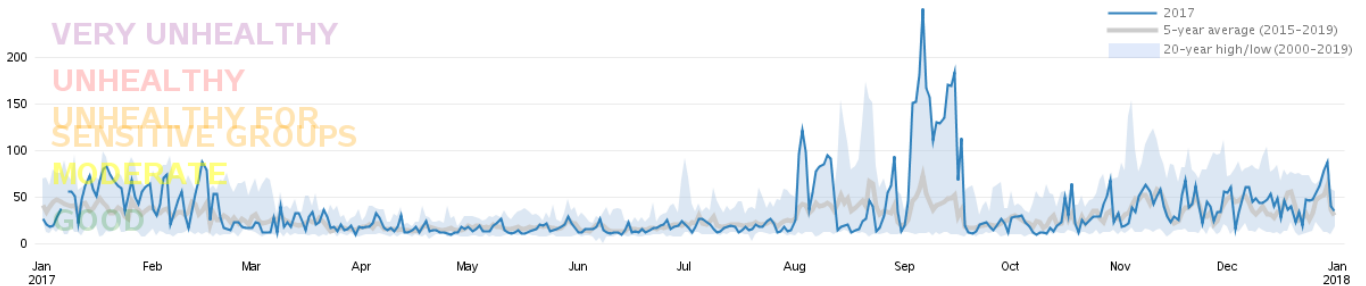
Our first collective experience with extreme smoke in the Gorge began on September 2, 2017, when a 15-year-old boy launched a smoke bomb firework into a dry ravine on the Eagle Creek Trail, just west of the community of Cascade Locks.

“By September 4, east winds and excessive heat pushed the rapidly growing blaze west across the ridges of the National Scenic Area. In the days that followed, it became a 48,000-acre conflagration that rained ash down on Portland, smoldered near the city's water supply at Bull Run, and closed transportation arteries through the only sea-level route in the Cascades Mountain Range - Interstate 84, the Union Pacific railroad, and even the Columbia River.” (Eagle Creek Fire Story & Data, n.d.)

The **Eagle Creek Fire** blanketed the Gorge in smoke for weeks and was not 100% contained until November 30th, 2017, a full three months after it started. The air quality monitoring station in The Dalles, 40 miles east of the fire’s epicenter, recorded 15 days of unhealthy air quality levels resulting from the smoke. This event was the first catastrophic wildfire and severe smoke event the area had seen in recent history. Long-term trend data for air quality in the area show no wildfire smoke in the region until 2013, and then it was only for 2-3 days at a time. Air Quality Indices (AQI) in the weeks following the Eagle Creek Fire set new records for 20-year highs as illustrated by the graph on the following page from The Dalles monitoring station showing PM2.5 Daily AQI Values. Note the significant peaks for the weeks in September 2017 where air quality reached “Very Unhealthy” levels.

PM2.5 Daily AQI Values

The Dalles, OR



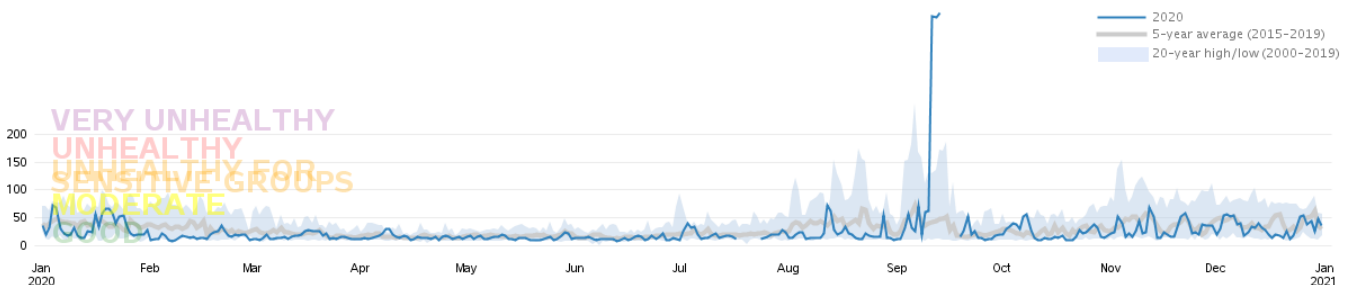
Source: U.S. EPA AirData <<https://www.epa.gov/air-data>>
Generated: February 28, 2023

Three years later, communities across Oregon and Washington faced another tragedy: the record-breaking **2020 Labor Day Fires**. The 2020 conflagration of Labor Day wildfires burned almost as much forest west of the Cascade Mountain crest (“the westside”) in 2 weeks (~340,000 ha) as in the previous five decades combined. (~406,00 ha) (Reilly et al., 2022). “The wildfires...were striking in their scale, speed, and severity, as well as their devastating societal impacts.” The fires killed 11 people and burned more than 1,000,000 acres (400,000 ha) of land and destroyed thousands of homes. About 40,000 people were evacuated, with about 500,000 people in evacuation warning areas. The cities of Phoenix, Talent, Detroit, and Gates were destroyed by the Almeda Drive and Santiam Fires respectively (Crombie, 2023). Western Oregon experienced some of the worst air quality in the world for almost 2 weeks (Reilly et al., 2022). Many residents of the Pacific Northwest experienced extreme stress, trauma, and mental health challenges as wildfires and smoke compounded the stress of the pandemic (Bulkeley, 2020; Braverman et al., 2025).

In the Gorge, our community suffered like much of the rest of the region, though fortunately we experienced no large-scale local fires. People experienced loneliness and isolation as they attempted to escape the smoky outdoor air and stay indoors. Outdoor workers, farm workers, and fishers were forced to keep working as the fall harvest and fishing seasons were in full swing. Many workers experienced such strong acute effects from the smoke that local organizations rallied to provide free eye-drop donations to farmworkers while distributing more masks. In the Gorge, an area known for world-class recreation, residents, athletes, and tourists struggled to find outlets for safe outdoor activities as the days of poor air quality turned into weeks. The smoke once again set records, and monitoring stations across the region were reporting AQIs never recorded, maxing out above the 500-point scale into levels simply known as “Hazardous” and dwarfing the trend lines set in 2017.

PM2.5 Daily AQI Values

The Dalles, OR



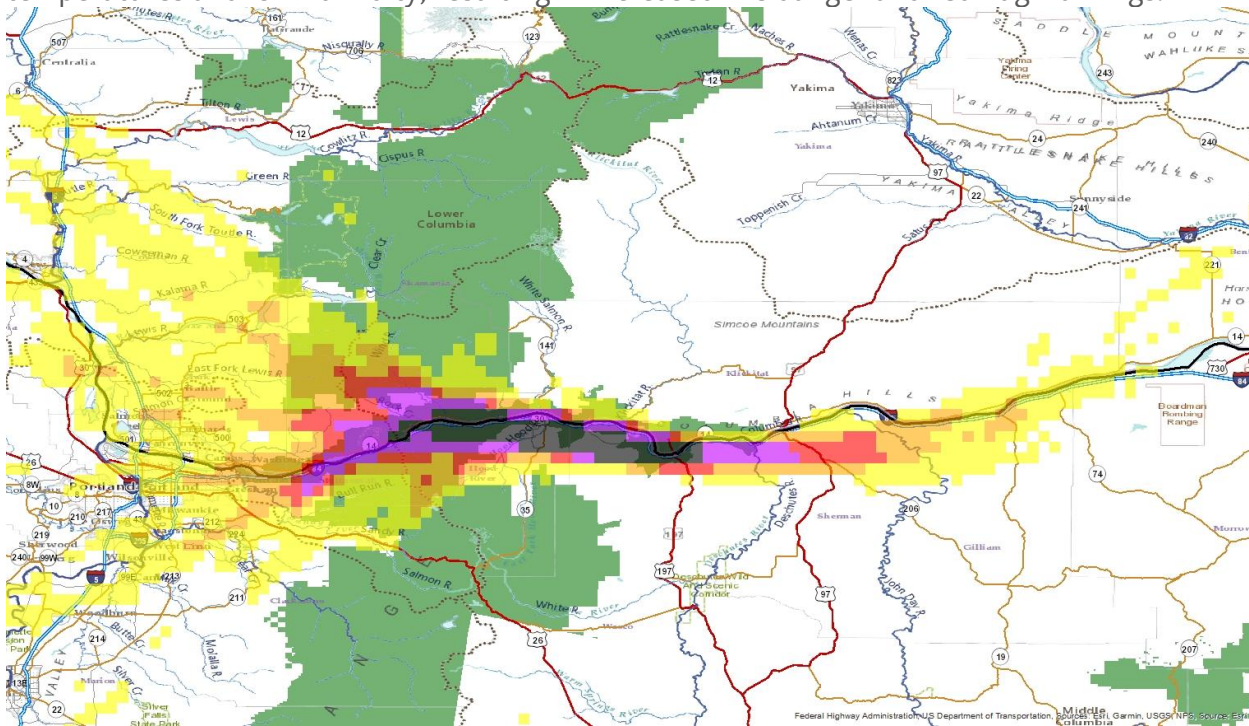
Source: U.S. EPA AirData <<https://www.epa.gov/air-data>>
Generated: February 28, 2023

Oregon experienced record-breaking hazardous air quality in 2020. The Oregon Department of Environmental Quality (DEQ) began monitoring air quality in Portland, Eugene, Medford and Bend in the 1980's, The Dalles in 2000, and Hood River in August of 2020. According to recent data from DEQ, AQI records for hazardous air quality were broken in all areas across the state on Sept 12-13, 2020, with sensors recording the most hazardous air quality to date in Oregon (The Fire Story, n.d.). According to data from the EPA (2026), air quality monitoring stations at the Madras Westside School in Madras, Oregon registered 1135, while in Deschutes County, the Sisters Forest Service Station registered 1099. The Medford AQI monitor reached a peak of 900 and Multnomah County reached a high of 779 at the SE Lafayette monitor. The Dalles monitor topped out at 599.

Wildfire smoke impacts were particularly bad in 2020, but a report from Oregon DEQ (2025) on the historical trends of wildfire smoke show that impacts are increasing across the state on a longer timescale. The most significant impacts are in Southern Oregon, but throughout the state, smoke impacts have increased since around 2012. According to same the DEQ report (2025), Oregonians should expect an increasing number of unhealthy or hazardous air quality days in upcoming summers.

Air Pathways through the Gorge

The map below shows the frequent air pathways into the Gorge during August and September. The Gorge generally has strong west winds during the summer months with the occasional east wind. Unsurprisingly, during the wildfire months when the Gorge experiences a lot of smoke, it is most likely carried into the region from the western end of the Gorge. However, the wind can often create a funneling effect, moving smoke through the region and keeping the air clear. In recent years, an east wind or stalled wind allows for smoke to settle in the region, often paired with extremely high temperatures and low humidity, resulting in increased fire danger and red flag warnings.



The Dalles Map; Source: Rick Graw, USDA-USFS, 2023.

The causes of smoke events in the Gorge are not limited just to wildfires. Other human activities have caused hazardous air quality in the area, like the oil train derailment in 2016, when a train carrying crude oil derailed and caught on fire in the town of Mosier. Residents in the area just east of Portland (almost 60 miles away) reported seeing lots of smoke, and although nobody was reported injured, four of the train cars burned harmful chemicals into the air for hours. The large and intense fire events we see so frequently today were extremely rare in the Gorge’s history. A combination of large-scale logging and forced removal of tribes, limiting their beneficial prescribed burning practices, has made forest areas in the Gorge more susceptible to large fire incidents (Haugo et al., 2019).

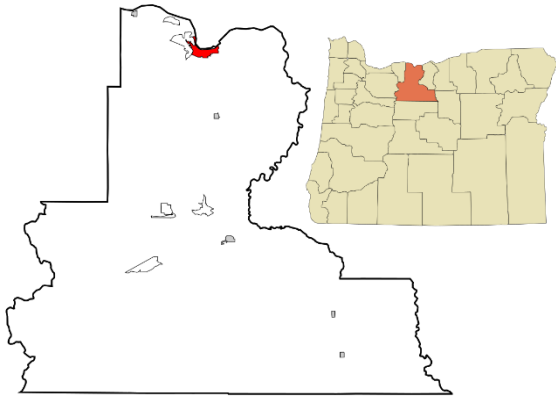
With rising temperatures and droughts related to climate change, these smoke events are not only happening more frequently, but they are becoming more of a threat to public health. The air quality rapidly declines during smoke events, and many people do not have the resources and proper education to know how to protect themselves. The Gorge has been designated as Smoke Sensitive Receptor Areas, or SSRAs, according to the State of Oregon. An SSRA is “an area designated by the board, in consultation with DEQ, which is provided the highest level of protection under the Smoke Management Plan. This is due to its history of smoke incidents, the density of population, or other special legal status related to visibility.” A community response plan is necessary for an SSRA like the Gorge in order to protect the public from frequent and large smoke events.



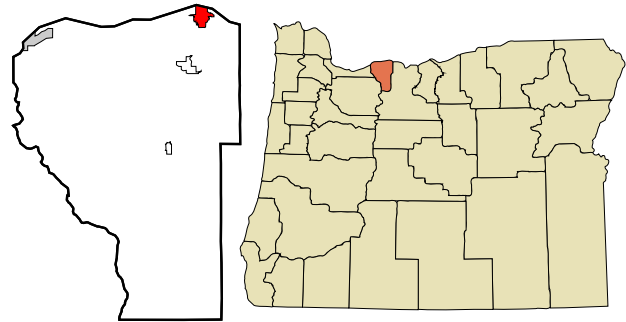
Photo of the Eagle Creek Fire Tristan Fortsch/KATU-TV via AP

The communities that make up the Gorge may be more vulnerable to smoke events compared to other communities in Oregon. Hood River and Wasco Counties are home to thousands of acres of fruit orchards along with other agricultural products. With so much of the land dedicated to orchards and farms, a large percentage of the population are migrant and seasonal farm workers who must work outdoors. This group is constantly exposed to smoke during wildfire events and often is not equipped with smoke shelters, indoor resting areas with air filtration, or N95 masks (MacMurdo et al.,

2025; Liu et al., 2015; Holmes, 2013; US EPA, 2025). In addition, much of the migrant farmworker population does not speak or read English as a first language. This makes communicating about smoke alerts, smoke shelters, and emergency situations more complicated. Latino/a/x/e community members make up 32% of the total population in Hood River County and 21% in Wasco County, both of which are significantly more than the state percentage of 14%. Compared to the statewide percentage of 15%, more residents speak a language other than English at home in Wasco (16%) and Hood River (30%) counties.



Map of Wasco County



Map of Hood River County

The health and safety of the communities across the Gorge is vitally important. Increasing the amount of prescribed fire will protect the forests from much larger wildfire events and protect the community from poor air quality and residual health effects. Therefore, the overall intent of the CRP is to provide a community plan that allows for more prescribed fire to take place, while mitigating health effects to smoke vulnerable populations during short-term smoke events.

“Therefore, the overall intent of the CRP is to provide a community plan that allows for more prescribed fire to take place, while mitigating health effects to smoke vulnerable populations during short-term smoke events.”

State of Oregon Required Components of a Community Response Plan

The Oregon Smoke Management rules state that a community response plan should be tailored to the unique needs of the community it serves. According to OAR*** 629-048-0180 2(a), the plan at a minimum must include:

- A description of populations in an SSRA community that are vulnerable to the health effects of short-term smoke,
- Adequate means by which the public, especially vulnerable populations in the SSRA community, will be notified in a clear and reliable way of anticipated smoke impacts in a timely manner,
- Adequate options for protecting the health of vulnerable populations (or helping such populations to protect themselves) from short-term exposure to smoke, and

- A plan and program for communications between the entities that conduct prescribed fire, the local public health authority, and the community’s public and vulnerable populations who may be impacted by smoke.

The Columbia Gorge encompasses a large area of incorporated and unincorporated communities. For this Community Response Plan, our scope includes Hood River and Wasco Counties. However, our survey was also inclusive of Sherman County in Oregon and Klickitat and Skamania Counties in Washington, which collectively make up the 5-county Gorge region. Data for the other towns and counties is available for those local leaders, policymakers, and community organizations if they wish to have it.

Timeline of Columbia River Gorge Community Response Plan for Wildfire Smoke & Related Smoke Work

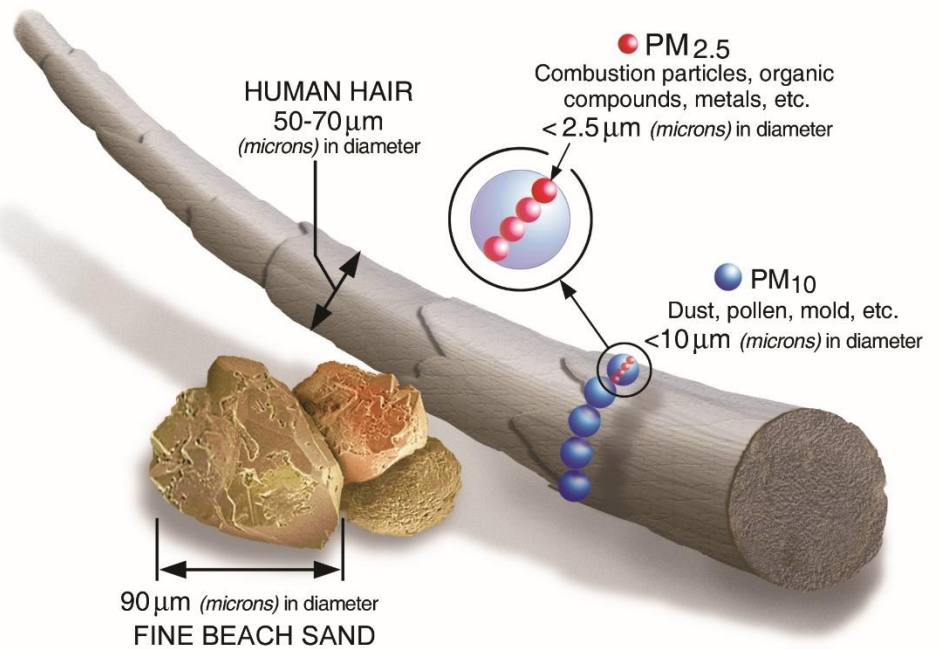
Following the Labor Day Fires in 2020, Oregon State University Extension Associate Professor of Practice and Regional Extension Faculty, Lauren Kraemer, began leading an effort to improve future smoke responses in our region. Several different funding sources were pursued to best undertake this work and a timeline of those efforts is detailed below.

- **September 2021**, Application submitted to Knight Cancer Foundation, \$10,000 Awarded to purchase initial batch of 10 air quality monitors that were installed at area schools and orchard sites. Partnered with e::Space Labs for initial monitor purchase.
- **December 2021**, Application submitted to Oregon Department of Environmental Quality (DEQ) for Community Response Plan Grant for Hood River and Wasco Counties in the Columbia River Gorge Smoke Sensitive Receptor Area (SSRA). \$80,000 Awarded **June 2022**. Funding covered project management, coordination, translation and plain language adaptation, participant incentives for focus groups, survey response raffle and promotion, paid ads, hosting tabletop disaster drill, website development for SmokeReadyGorge.org, additional indoor and outdoor air quality monitors purchased from PurpleAir.
- **January 2023**, Community Response Plan Survey Launches via Qualtrics and with paper copies at offices of six local community partners. Qualtrics link shared via 19 different community newsletters, Facebook pages, and other promotional strategies.
- **February and March 2023**, Focus Groups (n=5) with Older Adults (2, n=26), Parents of Young Children (2, n=7), Migrant and Seasonal Farm Workers (1, n=8).
- **March 10th, 2023**, Community Response Plan Survey Closes, 764 responses collected from across Hood River (n=326), Wasco (n=252), Sherman (n=12), Klickitat (n=71) and Skamania (n=28) counties.
- **April 8th, 2023**, Tabletop Disaster Drill with 40+ community partners from across the Columbia Gorge hosted at The Dalles Readiness Center focusing on mock wildfire smoke event.
- **May 2023**, Close out of DEQ CRP Grant
- **December 2023**, Application submitted to OSU ASPIRE Center, \$40,000 awarded **March 2024**. Funding covered additional PurpleAir air quality monitors for 19 area K-12 schools, outreach materials including stickers, magnets, brochures, and signage promoting SmokeReadyGorge.org, web hosting fees, materials for DIY Air filters including MERV filters and 20” Box Fans.
- **March 2025**, Close out of OSU ASPIRE Center Grant

Analysis of Fire, Smoke, and Air Quality

Some common causes of smoke in our area include summer and fall wildfires, agricultural burning of orchard waste in spring and fall, public and private forest slash burning and prescribed burns in fall, wood stove burning in winter, smudge pots in the spring, and household debris and garbage burning. Given all these sources, it is not uncommon to have some type of smoke year-round in the Gorge. Smoke is a mixture of gases and fine particles produced when wood and other materials burn.

“PM2.5 (particulate matter of 2.5 microns in diameter or less) is the label for fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller. To give perspective on how small 2.5 micrometers is, think about a single hair from your head. The average human hair is about 70 micrometers in diameter – making it 30 times larger than the largest fine particle. PM stands for particulate matter (also called particle pollution), a mixture of solid particles and liquid droplets found in the air. PM2.5 is the most dangerous type of particle for human health (The Fire Story, n.d.)”









PM 2.5 is the greatest health concern because of its size. These small particles can easily make their way through the lungs and cause irritation, inflammation, and shortness of breath, and can worsen existing lung and heart diseases. The known health effects of exposure to wildfire include increased respiratory morbidity, including respiratory infections, asthma, chronic obstructive pulmonary disease, and increased all-cause mortality (Grant & Runkle, 2021; Holm et al., 2021; CDC 2023a; US EPA 2025; Foo et al., 2024).

“Short-term and Long-term Exposure to PM2.5 carries health effects. For PM2.5, short-term exposures (up to 24 hours duration) have been associated with some adverse health effects primarily in infants, children, and older adults with preexisting heart or lung diseases. Long-term (months to years) exposure to PM2.5 has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children (The Fire Story, n.d.)”

Air Quality Index (AQI)

AQI is the U.S. Environmental Protection Agency’s (US EPA) tool for communicating air quality. It uses color-coded categories and provides statements for each category that tell people about air quality in their area, which groups may be affected, and steps they can take to reduce their exposure to air pollution. It can be helpful to think of AQI as a yardstick that runs from 0 to 500. The higher the AQI value, the greater the level of air pollution and concern for public health. For example, an AQI value of 50 or below represents good air quality, while an AQI value over 300 represents hazardous air quality (The Fire Story, n.d.; US EPA, 2025).

The AQI chart below from the IQ Air Website does illustrate the AQI level along with the associated PM 2.5 being measured in the air as well as the associated Health Recommendations. AQI is calculated based on a 24-hour exposure amount. The “Descriptions of Smoke Vulnerable Populations in the Gorge” section of this report on page 19 will discuss which groups fall into the category of “Sensitive Groups,” however it is important to note the lower threshold of smoke exposure at which individuals in this category will start to feel and experience the impacts of PM2.5 like wildfire smoke. An AQI level of 151 and greater is considered unhealthy for everyone in the general population.

	US AQI Level	PM2.5 (µg/m³)	Health Recommendation (for 24 hour exposure)
WHO PM2.5 (µg/m³) Recommended Guidelines as of 2024: 0-5.0			
	Good 0-50	0-9.0	Air quality is satisfactory and poses little or no risk.
	Moderate 51-100	9.1-35.4	Sensitive individuals should avoid outdoor activity as they may experience respiratory symptoms.
	Unhealthy for Sensitive Groups 101-150	35.5-55.4	General public and sensitive individuals in particular are at risk to experience irritation and respiratory problems.
	Unhealthy 151-200	55.5-125.4	Increased likelihood of adverse effects and aggravation to the heart and lungs among general public.
	Very Unhealthy 201-300	125.5-225.4	General public will be noticeably affected. Sensitive groups should restrict outdoor activities.
	Hazardous 301+	225.5+	General public at high risk of experiencing strong irritations and adverse health effects. Should avoid outdoor activities.

Air Quality Index Chart from IQ Air Website.

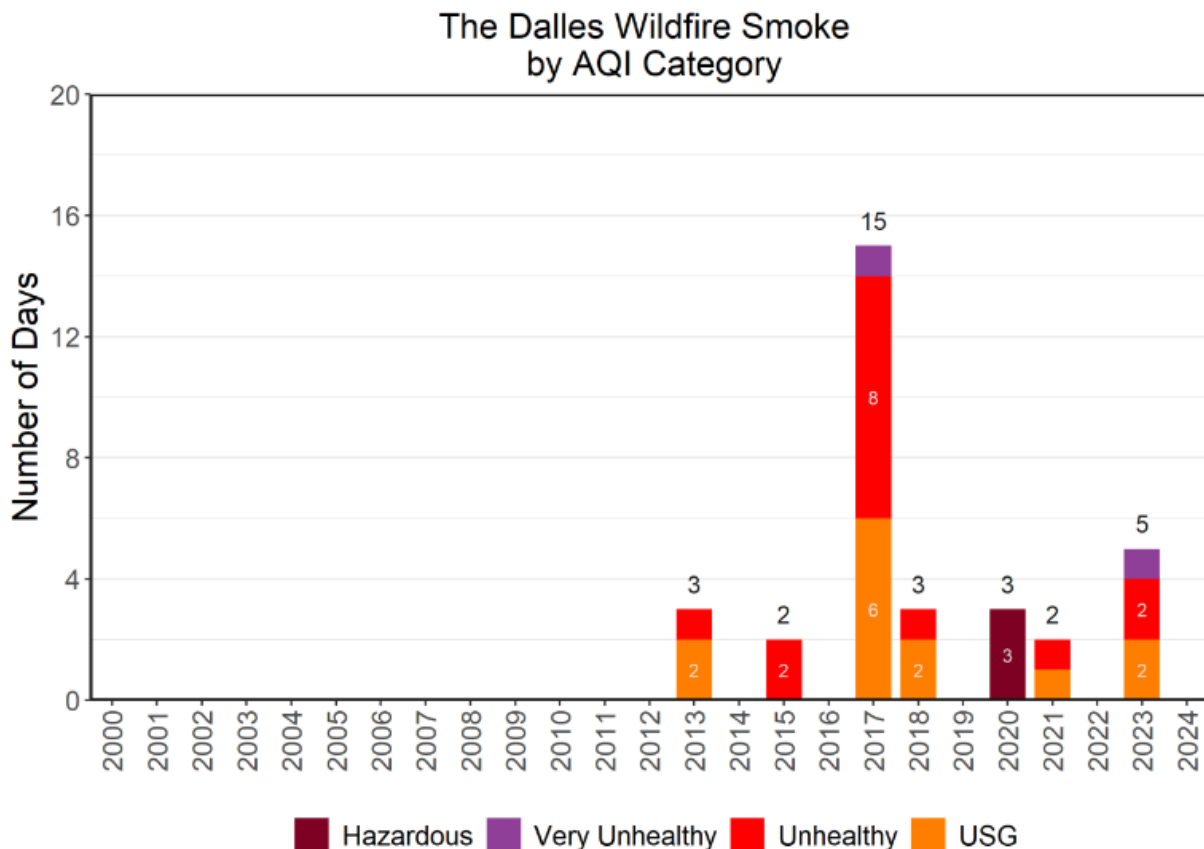
The Environmental Protection Agency (EPA) also publishes AQI information on their website as well as smart phone applications (apps) which utilize a gauge, as seen in the image on the facing page, illustrating changes in AQI across a single August day in 2023 in Medford, Oregon. Note how the AQI

gauge shows worsening air quality across the day, going from 197 (Unhealthy) at 6:00pm, to 277 (Very Unhealthy) at 7:00pm, to 380 (Hazardous) at 8:00pm.



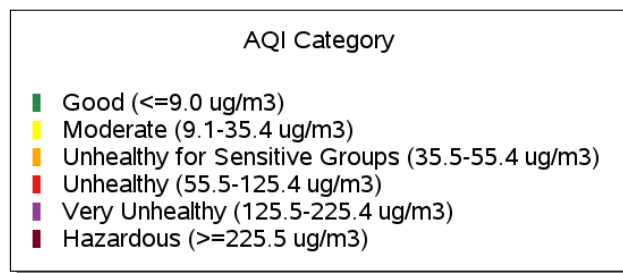
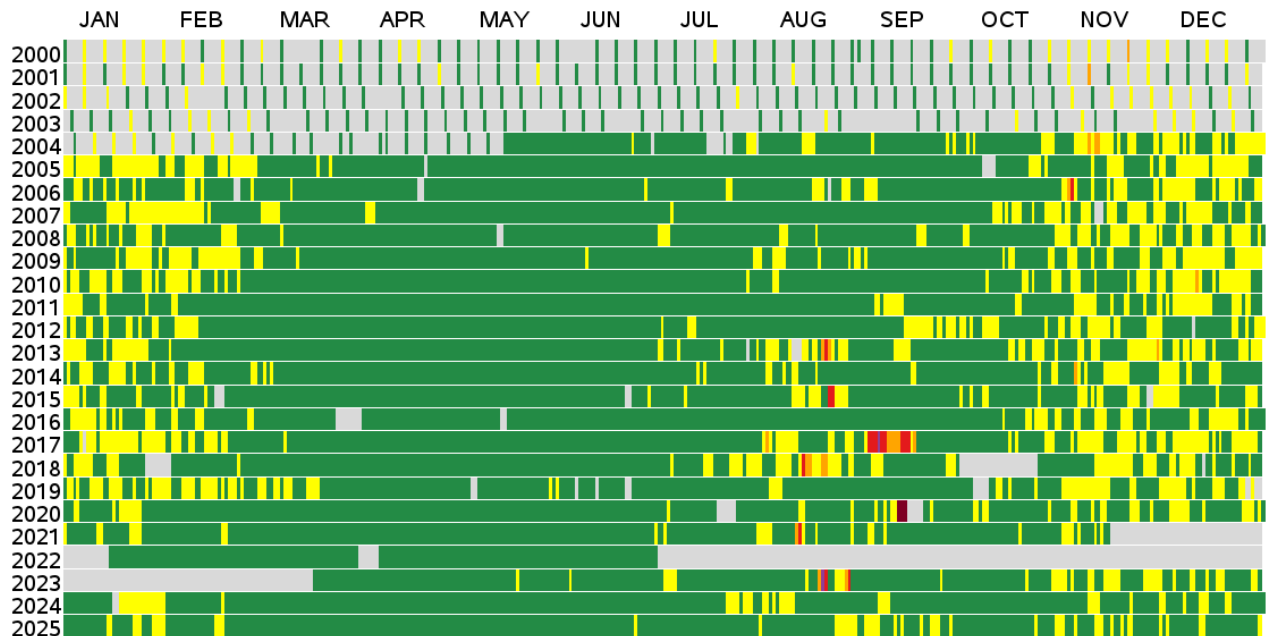
Image from Jackson County Public Health, 2023

There are many ways to visualize the data of our own region’s worsening air quality overtime. The bar graph below from Oregon DEQ ([July, 2025](#)) shows the number days since 2000 that The Dalles air quality monitoring station recorded AQIs considered unhealthy for sensitive groups (USG) in orange, unhealthy in red, very unhealthy in purple and hazardous in maroon. The spikes in very unhealthy and hazardous air in 2017 and 2020 can be tied to specific wildfire and smoke events like the Eagle Creek and Labor Day fires. The bar graph clearly illustrates a growing trend of poor air quality over time. Over the last decade, fire season has increased by over 80 days (Westerling, 2016; Dahl, 2023).



The tile plot below presents the same 25 years of AQI trend data for the air quality monitor in The Dalles with the addition of readings from nearly every day over the past two and a half decades. As with the previous bar graph, the orange, red, and maroon color blocks in 2017 and 2020 can be tied to specific wildfire and smoke events like the Eagle Creek and Labor Day fires. The yellow periods indicate days of poorer air quality with moderate AQI that are related to inversions, wood stove burning, prescribed burns, and pile burns. Gray color days are when monitoring data is not available. From January 2000 to May 2004, only weekly readings were recorded.

PM2.5 Daily AQI Values, 2000 to 2025 The Dalles, OR



Source: U.S. EPA AirData <<https://www.epa.gov/air-data>>
Generated: January 27, 2026

The [National Ambient Air Quality Standards \(NAAQS\)](#) were officially updated May 6th, 2024, in recognition of our growing understanding about the harms of poor air quality, especially at the moderate level. The updates included changing several of the breakpoints at which AQI switches from one category to the next. EPA updated the breakpoint between Good and Moderate to reflect the updated annual standard of 9 micrograms per cubic meter, this reflects a drop from 12.1 to 9.1. EPA updated the breakpoints at the upper end of the unhealthy (dropped from 150.4 to 125.4), very unhealthy (dropped from 250.4 to 225.4), and hazardous (dropped from 350 to 225.4) from categories based on scientific evidence about particle pollution and health. The Agency also combined

Community Response Plan for the Columbia River Gorge | 15

two sets of breakpoints for the Hazardous category into one. Hazardous is now any AQI above 225.5 micrograms per cubic meter. See the table below for a comparison of the AQI category breakpoints before and after the NAAQS updates. Taken from [EPA's Air Quality Index for Particulate Matter Fact Sheet and Common Questions](#).

2024 AQI for Fine Particle Pollution
(Breakpoints are in micrograms per cubic meter)

AQI Category and Index Value	Previous AQI Category Breakpoints	Updated AQI Category Breakpoints	What changed?
Good (0 – 50)	0.0 to 12.0	0.0 to 9.0	EPA updated the breakpoint between Good and Moderate to reflect the updated annual standard of 9 micrograms per cubic meter
Moderate (51 – 100)	12.1 to 35.4	9.1 to 35.4	
Unhealthy for Sensitive Groups (101 – 150)	35.5 to 55.4	35.5 to 55.4	No change, because EPA retained the 24-hour fine PM standard of 35 micrograms per cubic meter.
Unhealthy (151 – 200)	55.5 to 150.4	55.5 to 125.4	EPA updated the breakpoints at the upper end of the unhealthy, very unhealthy, and hazardous categories based on scientific evidence about particle pollution and health. The Agency also combined two sets of breakpoints for the Hazardous category into one.
Very Unhealthy (201 – 300)	150.5 to 250.4	125.5 to 225.4	
Hazardous (301+)	250.5 to 350.4 and 350.5 to 500	225.5+	

Pile Burning and Prescribed Burns

The Columbia Gorge is home to many farms and orchards that participate in pile burning throughout the year. Pile burning is when orchardists and private landowners burn piles of yard waste, tree debris, trimmings, and more to remove waste from their properties. Because we live in an area where pile burning is utilized widely, we hope to explore more methods for notification and communication regarding smoke from pile burning. We are also looking into possible regulations to limit pile burning to days where air quality impacts would be minimized, such as days with no inversion. Communities like Pendleton, Oregon, and Oakridge, Oregon have seen success with incorporating a “Stop Light” system of green, yellow, and red days that designate when burning is allowed, moderated, or prohibited.

Orchardists as well as private residents are required to obtain a permit to burn at the beginning of the year. If residents have a burn permit, all burning is subject to general requirements, prohibitions, and weather conditions in accordance with Division 264 Rules For Open Burning. Any allowable open burning must occur during daylight hours between 7:30 a.m. and two hours before sunset. The [Outdoor and Open Burning page](#) on the Oregon Department of Environmental Quality website has information on burning restrictions based on local weather conditions.

In two focus groups that we conducted, participants, who were orchardists or private landowners, were asked if they would consider notifying the local fire department and their neighbors before burning. The majority of participants said yes, with a couple indicating that they would not do so, explaining that they fear government control and restrictions on their burning practices. When participants were asked if they would consider not burning on days with low cloud cover or inversions, the majority again said yes. They expressed that they would have no problem changing burning days but would also like to see more resources available for picking up yard waste so that they don't have to burn it in their yards. A couple of participants indicated that they would not change their burning schedule. Multiple survey respondents added in the comment section that they were more concerned about smoke from slash and pile burning in their communities rather than smoke from wildfires.

Prescribed burns are intentional, controlled fires that are set by the Forest Service or other landowners and agencies to control and manage forest growth. The Forest Service will burn away low brush to clear the forest of extra debris that would make a wildfire much more dangerous. Prescribed burns do not happen often throughout the year, though the federal government has recently given more funds for prescribed burns to happen over the next few years. This may enhance the ability of the Forest Service to do prescribed burning in Hood River and Wasco Counties.

Unlike wildfires and other harmful smoke events, prescribed burns in the Gorge do not usually affect the air quality in a dangerous or serious way, given the many restrictions in place that limit prescribed burns. We can see from the air quality monitors installed throughout the community that in the case of pile burning and prescribed burns, the air quality index does not increase to unhealthy numbers. Therefore, the public should not fear prescribed burns. Rather, these burns are beneficial in keeping forests healthy and managed, making them less likely to burn uncontrollably during wildfire events. Many community members indicated that they would like to receive communication regarding prescribed burns.

Descriptions of Smoke-Vulnerable Populations in the Gorge

Certain groups of people are more vulnerable to smoke and may experience more serious impacts from particle pollution. The CDC, EPA, and Oregon Health Authority identify the following groups as “sensitive groups,” or smoke-vulnerable populations:

- Children under the age of 21
- Pregnant people
- Older adults (65+)
- Outdoor workers
- People with respiratory or cardiovascular diseases
- Low-income people
- Unhoused people

According to Carol Trenga, PhD, Oregon Health Authority Epidemiologist, taken together, these smoke sensitive groups can make up 60-70% of the population. This is noteworthy given smoke sensitive status may connote a minority population, when in fact, the groups make up the majority of the population.

The CDC identifies people with asthma, Chronic Obstructive Pulmonary Disease (COPD) or heart disease, as well as children and pregnant women especially at risk, further noting that breathing in smoke can affect even healthy adults, possibly causing:

Respiratory symptoms and effects including:

- Coughing
- Wheezing
- Increased phlegm
- Difficulty breathing
- Reduced lung function
- Increased risk of asthma exacerbation
- Increased risk of emergency room visits and hospital admissions

Cardiovascular effects including:

- Heart failure
- Heart attack
- Stroke
- Increased risk of emergency room visits and hospital admissions

On the following pages, we will highlight further details and evidence for why each group is particularly sensitive to the impacts of smoke and elevated PM2.5.

Children

Children under the age of 21 are uniquely vulnerable for a variety of reasons, both physical and social. Holm et al. (2020), document four factors that contribute to the uniquely vulnerable state of children during wildfire smoke events: 1) behaviors and preferences that **increase exposure**, 2) differences in physiology such as metabolism and excretion that **increase dose**, 3) **unique windows of development** meaning they are more susceptible and have a longer lifespan in which to experience symptoms or develop poor health outcomes, and 4) **less ability to control** their environments. Children generally spend more time outside compared to adults, are more physically active, take in more air relative to their size, and have cardiovascular and respiratory systems that are still developing. This makes them more vulnerable to toxins, and exposure may affect their growth and development, which can lead to other health issues later in life. Additionally, lung development is in process through roughly the age of 21, placing all people under 21 at greater risk of poor health outcomes during smoke events.

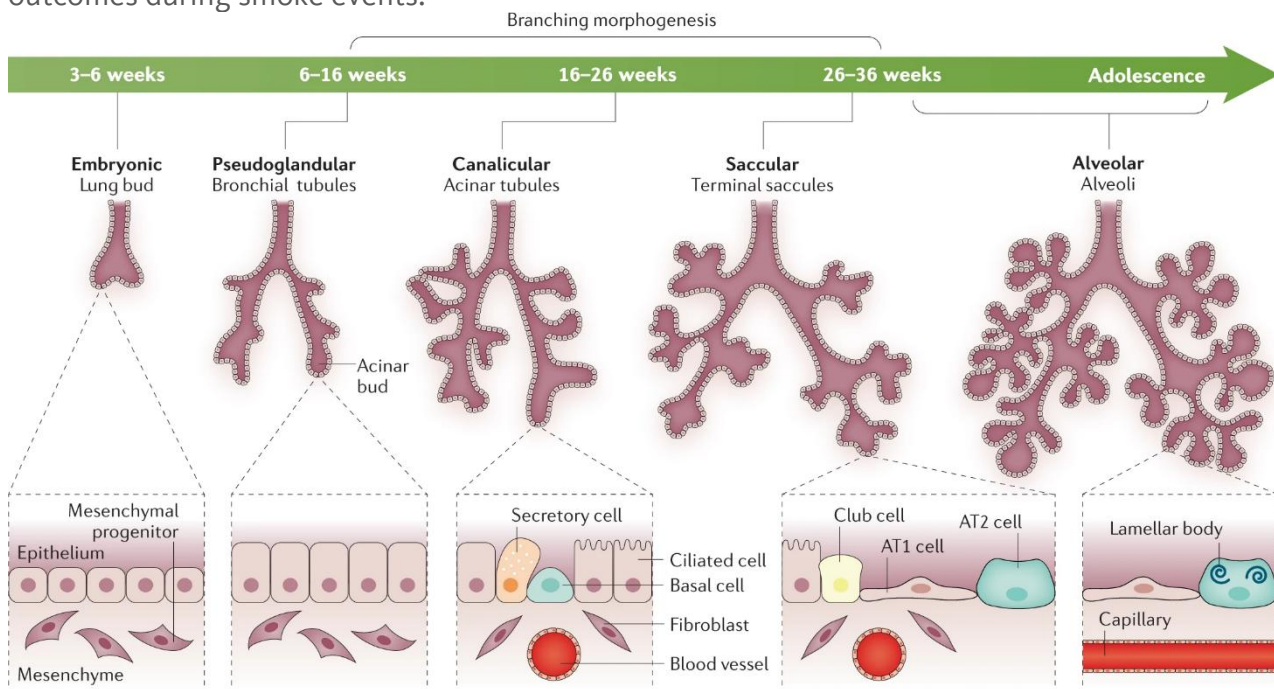


Image of the stages of lung development from lung formation from the embryonic stage through adolescence. Image credit: <https://www.nature.com/articles/s41572-019-0127-7/figures/4>

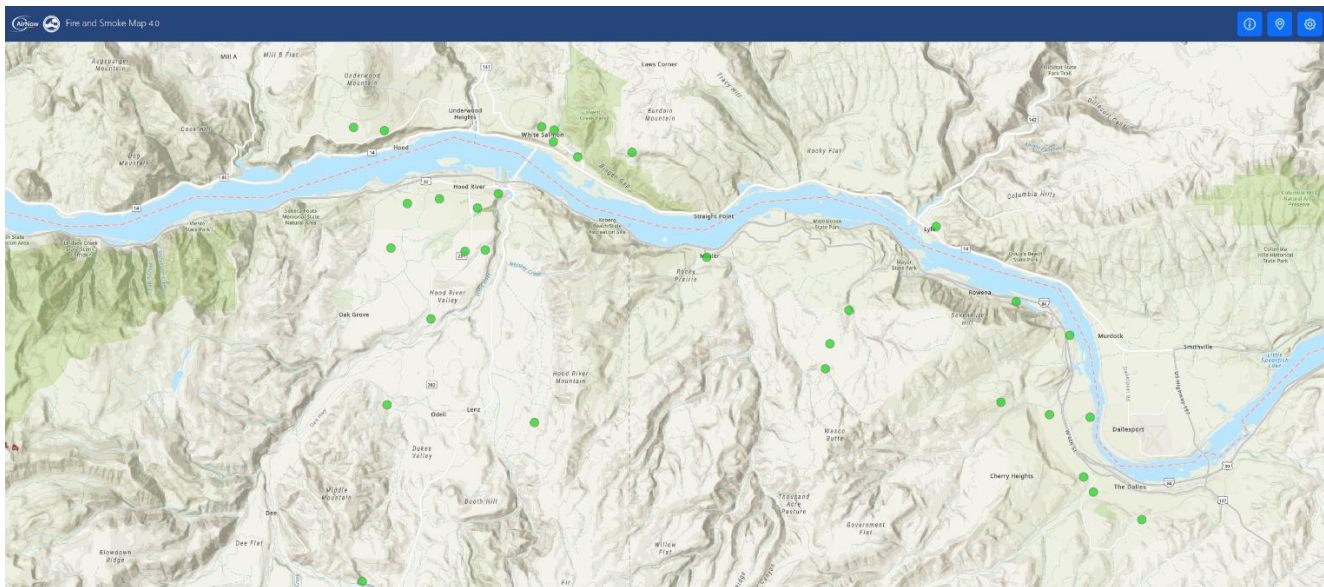
Across the Gorge, children under the age of 21 make up over 25% of the total population. Adults are responsible for protecting young children from smoke exposure, since children cannot make these decisions for themselves. Many of the smoke sensors installed around the Gorge were placed at schools to increase the accuracy of local data and to promote communication between local public health officials, school staff, children and their families. With grant funding from Oregon DEQ, Oregon Health Sciences University (OHSU) Knight Cancer Institute, and Oregon State University ASPIRE Center, every K-12 School in Hood River and Wasco County have access to both an outdoor and indoor PurpleAir brand monitor, as well as two tabletop mobile Temtop Monitors. The data from the indoor and outdoor PurpleAir monitors is available for viewing on the [PurpleAir website](#). Outdoor monitors can be viewed on the [EPA Fire and Smoke Map](#). Hood River County School District, North Wasco County School District, South Wasco County School District, and Dufur School District have all partnered in this monitoring program. After all monitors are installed, we will have a total of 33 new

outdoor monitors and 22 indoor monitors in place across our region in geographically dispersed locations. Additionally, a handful of e:Space labs monitors (n=10) whose data can be accessed via the website: <https://aqi.espacelabs.us/> are located at various orchard sites across the region.



Monitors located at area schools will assist staff and administrators to make data-driven decisions about whether it is safe for students to have outdoor recess and after-school activities outdoors. On site monitors will also enable school personnel to utilize tools like the [Oregon School Activities Association \(OSAA\) Air Quality Guidelines for Schools](#). Historically schools had to rely on visibility indices, often distilled down to asking, “Can we see across the street, or across the Columbia River today?” With local monitors sited directly on their buildings, student and staff health will be prioritized and protected.

Image of the outdoor, indoor, and tablet mobile monitors provided to schools in May 2024.



This screenshot from EPA’s Fire and Smoke Map highlights where several of our new K-12 school-based PurpleAir monitors are located across the Columbia River Gorge.

Pregnant People

Fetuses and pregnant people are also affected by smoke exposure. Studies have shown higher rates of premature birth and infants being born smaller (low birth weight) following wildfire smoke exposure in utero (Basilio et al., 2022; Foo et al., 2024; Kumagai et al., 2004; Holstius et al., 2012; Abdo et al., 2019). During pregnancy, physiological changes—such as increased respiratory rates and expanded blood and plasma volumes—can increase a pregnant person’s vulnerability to environmental exposures, including air pollution (US EPA, 2025). Additionally potential impacts related to psychosocial stress experienced during wildfire events can impact the developing fetus (Basilio et al., 2022; Foo et al., 2024; Kumagai et al., 2004; Holstius et al., 2012).

While a limited, but growing body of research has specifically examined the health effects of wildfire smoke exposure on pregnancy outcomes, evidence from related combustion-related air pollutants—such as cigarette smoke and indoor biomass smoke—demonstrates increased risks for adverse birth outcomes (Pope et al., 2010; Stieb et al., 2012). Moreover, a large but inconsistent body of literature on prenatal exposure to ambient air pollution, particularly fine particulate matter (PM2.5), provides evidence of elevated risks for adverse birth and obstetrical outcomes, including decreased infant birth weight and preterm birth, associated with chronic maternal exposure (EPA, 2025).

Adults Over 65

As adults age, immune function declines, making it more difficult to fight infections and recover from environmental stressors (CDC, 2024). Older adults are at increased risk for wildfire-related health effects because they experience higher rates of chronic respiratory and cardiovascular disease compared to younger populations (US EPA, 2023a; US EPA 2023b; Reid et al., 2016). Older adults are particularly vulnerable to short-term exposures to wildfire smoke due to the higher prevalence of pre-existing lung and heart disease, as well as age-related declines in key physiological and defense mechanisms (US EPA, 2023a; CDC, 2024). Epidemiologic studies have consistently reported increased risks of emergency department visits, hospital admissions, and mortality associated with short-term exposure to fine particulate matter (PM2.5) among older adults (US EPA, 2023a; US EPA 2023b; Liu et al., 2017).

Older adults also face higher rates of loneliness and social isolation, which are recognized risk factors for poor physical and mental health outcomes (National Academies of Sciences, Engineering, and Medicine [NASEM], 2020). During periods of heavy wildfire smoke, when individuals are advised to remain indoors to protect their health, experiences of isolation and limited social connection may be further exacerbated for older adults (CDC, 2023a; Humphreys et al., 2022; Brooks et al., 2020; Eisenman & Galway, 2022).

Additionally, according to the U.S. Department of Health and Human Services (US HHS) **emPOWER** dataset, many older adults rely on electricity-dependent durable medical and assistive equipment—such as ventilators and oxygen concentrators—to live independently in their homes (US HHS, 2024). In Wasco County, there are 6,568 Medicare beneficiaries, 248 of whom have health conditions that place them at increased risk and require electrically powered medical equipment to support breathing. In Hood River County, there are 4,737 Medicare beneficiaries, 116 of whom are dependent on electrically powered medical equipment (US HHS, 2024).

These individuals are not only vulnerable to wildfire smoke due to age and underlying health conditions, but their dependence on electricity to operate life-sustaining medical equipment places them at particular risk during wildfire season due to Public Safety Power Shutoffs (PSPS). PSPS are a fire prevention strategy increasingly used by electric utilities during Red Flag Warning periods to reduce the risk of power lines igniting wildfires (Oregon Public Utility Commission, 2023). Pacific Power, which serves much of Oregon and Washington, provides information about PSPS events, including maps of potentially affected areas that are updated during wildfire season and periods of elevated fire risk (Pacific Power, 2024). Both Hood River and Wasco Counties are identified as having a higher risk of catastrophic, fast-spreading wildfires, increasing the likelihood of PSPS events and associated impacts on electricity-dependent residents (Pacific Power, 2024).

Outdoor Workers

Hood River and Wasco Counties have high concentrations of migrant and seasonal outdoor workers due to the orchard and farming industries. Peak harvest periods for orchard and specialty crops often overlap with late summer and early fall wildfire season, increasing the likelihood that farmworkers will experience repeated smoke exposures during critical work periods. During wildfire smoke events, many of these workers continue to work outdoors, either because work is not halted by employers or because economic pressures make it difficult for workers to refuse shifts or reduce hours (Navarro, 2020; Becerra, 2025; MacMurdo et al., 2025; Oregon OSHA, 2022). Language barriers, fear of retaliation or job loss, lack of paid sick leave, and concerns related to immigration status may further limit workers' ability to advocate for safer working conditions or to access health care when symptoms occur (Castillo et al., 2021; Soto et al., 2023; Holmes, 2013).

Working outdoors during periods of wildfire smoke exposure can result in a range of adverse health effects, depending on the intensity and duration of exposure and the worker's underlying health status. Documented health effects of wildfire smoke exposure include eye, nose, and throat irritation; coughing and shortness of breath; headaches; nausea; and exacerbation of chronic respiratory conditions such as asthma and chronic obstructive pulmonary disease (COPD), as well as increased risk of cardiovascular events (US EPA, 2023a; Reid et al., 2016). Physically demanding labor increases breathing rates, which can lead to greater inhalation of fine particulate matter (PM_{2.5}) and increased internal dose of harmful pollutants.



Image: Farm worker in California smoke. Image credit: Tim Mossholder on Unsplash

During the 2020 Labor Day wildfires, thousands of agricultural workers across Oregon continued working in hazardous smoke conditions. Farmworker advocacy organizations reported widespread accounts of workers experiencing headaches, nausea, dizziness, loss of appetite, respiratory symptoms, and extreme fatigue, along with reports of pressure to continue working despite visibly unhealthy air quality and worsening symptoms (PCUN, 2020; York et al., 2020).

In addition to direct smoke exposure, outdoor workers face several compounding challenges during smoke events. These include limited access to appropriately fitted respiratory protection, lack of training on wildfire smoke hazards, insufficient access to clean indoor rest areas or filtered air, and inadequate access to drinking water and rest breaks when smoke exposure is combined with heat stress (EPA, 2023). Transportation barriers may prevent workers from avoiding smoke exposure before and after work, particularly when carpooling or employer-provided housing lacks air filtration. Crowded or substandard housing conditions may also limit workers' ability to reduce cumulative smoke exposure during non-working hours, increasing overall health risk during prolonged smoke events (Navarro, 2020; Becerra, 2025; MacMurdo et al., 2025; OHA, 2021).

People with Respiratory or Cardiovascular Disease

People living with respiratory or cardiovascular diseases are more susceptible to wildfire smoke-related symptoms and adverse health outcomes than the general population (Reid et al., 2016; US EPA, 2023a; Humphreys et al., 2022). Exposure to wildfire smoke can worsen asthma and other chronic respiratory conditions, trigger chronic obstructive pulmonary disease (COPD) exacerbations, and increase the risk of cardiovascular events, including heart attacks, arrhythmia, and stroke (EPA, 2023a; Liu et al., 2017; CDC, 2023).

According to [Oregon Health Authority Chronic Conditions and Risk Factors](#) data, approximately 1,500 adults (8.8%) in Hood River County have asthma, 800 adults (3.6%) have COPD, and 700 adults (3.2%) have experienced a heart attack. In Wasco County, approximately 2,600 adults (10.8%) have asthma, 1,600 adults (6.6%) have COPD, and 800 adults (3.0%) have experienced a heart attack (OHA, 2024). These conditions place a substantial portion of the adult population at elevated risk during wildfire smoke events.

While many healthy adults may tolerate short-term smoke exposure at Air Quality Index (AQI) levels above 150 without immediate or obvious symptoms, individuals with underlying respiratory or cardiovascular disease often experience symptoms at much lower AQI levels (EPA, 2023a). The AQI categorizes air quality levels above 101 as “unhealthy for sensitive groups,” explicitly identifying people with heart or lung disease as populations at increased risk (EPA, 2023a; CDC, 2024).

In addition to heightened physiologic sensitivity, individuals with respiratory or cardiovascular disease face several compounding challenges during smoke events. These include difficulty accessing appropriate medications or refills during prolonged smoke events, increased reliance on rescue inhalers or oxygen therapy, and heightened anxiety related to breathing difficulties or fear of symptom escalation (CDC, 2023; Reid et al., 2016). Some individuals may delay seeking medical care due to transportation barriers, cost concerns, or fear of overwhelming health systems during wildfire emergencies (York et al., 2020).

People with chronic heart and lung conditions may also struggle to reduce exposure in their homes, particularly if they lack access to high-efficiency particulate air (HEPA) filtration, live in older or poorly sealed housing, or reside in multifamily or rental units where modifications are limited (EPA, 2023a). For individuals who must continue working or caregiving during smoke events, the need to balance exposure reduction with daily responsibilities can further increase health risks. Additionally, prolonged smoke exposure may lead to cumulative effects, resulting in worsening baseline disease control even after smoke conditions improve (Liu et al., 2017).

People with Low-Income

Wasco County has a higher proportion of residents experiencing poverty than the statewide average. According to 2020 U.S. Census data, 12.4 percent of Wasco County's population lives below the federal poverty level (U.S. Census Bureau, 2020). Across Wasco County and Hood River County combined, an estimated 568 families are living in poverty (U.S. Census Bureau, 2020). Poverty is a well-established social determinant of health and is associated with higher rates of chronic disease, reduced access to health care, and increased vulnerability during environmental emergencies, including wildfire smoke events (Braveman et al., 2011; Reid et al., 2016).

Community survey data from Wasco County further illustrates the material barriers faced by low-income residents during smoke events. When survey participants were asked what would be most helpful in preparing for wildfire smoke, 363 respondents (48%) indicated that access to a low-cost air purifier and 234 respondents (31%) indicated that free respirator masks would significantly improve their ability to protect their health (Community Response Plan Survey, 2023). These findings align with broader evidence showing that cost is a major barrier to adopting recommended protective behaviors during smoke events (US EPA, 2023b).

Low-income residents may lack the financial resources needed to purchase protective equipment such as N95 respirator masks, portable HEPA air purifiers, replacement filters, or weatherization improvements that help reduce indoor smoke infiltration. As a result, they may experience higher cumulative smoke exposure and greater risk of smoke-related health effects compared to higher-income populations (Reid et al., 2016; EPA, 2023). Chronic poverty is also associated with poorer baseline health status, which further amplifies the health impacts of smoke (Braveman et al., 2011).

In addition to financial barriers, low-income individuals often face compounding challenges during wildfire smoke events. These include living in older, poorly sealed housing or rental units where residents have limited ability to make structural improvements, limited access to air-conditioned or filtered indoor spaces, and greater likelihood of needing to continue working—often in outdoor or high-exposure jobs—despite hazardous air quality (Navarro, 2020; Becerra, 2025; MacMurdo et al., 2025; York et al., 2020). Transportation barriers may restrict the ability to access cleaner air spaces, medical care, or community distribution sites for masks and air purifiers.

Low-income households may also face competing basic needs during prolonged smoke events, such as choosing between purchasing protective equipment and paying for food, rent, utilities, or medications. Limited access to timely information, internet service, or culturally and linguistically appropriate messaging may further hinder protective decision-making during rapidly changing smoke conditions (EPA, 2023; York et al., 2020). Together, these factors contribute to inequitable smoke exposure and disproportionate health impacts among low-income populations.

Unhoused Population

Results from the January 2022 Point-in-Time (PIT) Count indicate a preliminary 50 percent increase in the number of people experiencing houselessness across Wasco, Hood River, and Sherman Counties compared to 2020 data (Mid-Columbia Community Action Council [MCCAC], 2022). Increases in houselessness reflect a combination of limited affordable housing availability and the economic and social impacts of the COVID-19 pandemic across the region (Oregon Housing and Community Services [OHCS], 2022). Improved coordination among culturally specific service providers and social service agencies also contributed to more comprehensive outreach and enumeration, resulting in a more accurate understanding of the scope and characteristics of houselessness in these communities (MCCAC, 2022).

Both Wasco and Hood River Counties have substantial numbers of unhoused individuals with limited or no access to indoor environments with clean, filtered air during wildfire smoke events. People experiencing houselessness are often continuously exposed to poor air quality, with few opportunities to reduce exposure or recover during prolonged smoke episodes (US EPA, 2023a; Reid et al., 2016). Unlike housed residents, unhoused individuals cannot shelter in place, seal indoor spaces, or use air filtration systems, resulting in higher cumulative exposure to PM_{2.5} during smoke events.

In addition to continuous exposure, people experiencing houselessness face several compounding challenges during wildfire smoke events. These include limited access to smoke shelters or clean air spaces, lack of transportation to reach available shelters, and restrictive shelter policies that prevent individuals from bringing personal belongings, pets, or partners, factors that often discourage shelter use due to concerns about theft, safety, or separation (Cronley et al., 2024; York et al., 2021). Past smoke events in the region have shown that some unhoused individuals avoided available smoke shelters because they were unable to bring their belongings inside and feared losing essential personal items.

People experiencing houselessness also have disproportionately high rates of chronic respiratory disease, cardiovascular disease, mental health conditions, and substance use disorders, all of which increase vulnerability to wildfire smoke exposure (Baggett et al., 2013; Reid et al., 2016). Limited access to health care, medications, masks, and timely health information, particularly information that is culturally appropriate and available in multiple languages, can further exacerbate health risks during smoke events. Prolonged smoke exposure may also worsen mental health outcomes, including anxiety, stress, and trauma, particularly for individuals already experiencing housing instability and chronic stress (OHA, 2024; York et al., 2020; CDC, 2023a).

Tourists

The Columbia River Gorge is a popular year-round tourist destination, attracting thousands of visitors from across Oregon and throughout the United States who come to participate in outdoor recreation and tourism activities, including hiking, mountain biking, windsurfing, sightseeing, and agri-tourism (Travel Oregon, 2023). While tourists are not typically classified as a sensitive population in wildfire smoke guidance, they may face elevated exposure risks due to limited situational awareness and a strong emphasis on outdoor activities (US EPA, 2023a).

Communicating wildfire smoke and air quality information to visitors from outside the region presents a significant challenge, as tourists are unlikely to be enrolled in local emergency alert systems or to regularly monitor regional air quality forecasts and public health advisories (CDC, 2023b). As a result, visitors may unknowingly spend prolonged periods outdoors during poor air quality conditions, increasing their exposure to PM2.5, particularly during physically strenuous activities that increase breathing rates (EPA, 2023b; Reid et al., 2016).

Tourists may also be unfamiliar with the Air Quality Index (AQI), the health implications of different AQI levels, and the designation of “sensitive groups,” which can delay protective decision-making during smoke events (EPA, 2023a). In addition, visitors may not recognize visible smoke as a health hazard or may underestimate its potential health impacts, especially if they are accustomed to cleaner air in their home communities (CDC, 2023b).

In the event of a wildfire-related evacuation, tourists may face additional challenges due to unfamiliarity with local geography, evacuation routes, road closures, and alternate travel corridors. Limited cellular service in parts of the Gorge can further hinder access to real-time evacuation information and navigation tools. Visitors staying in short-term rentals, campgrounds, or dispersed recreation areas may not receive timely evacuation notices or guidance from hosts or land managers.

Additional challenges during smoke events include language barriers for international visitors, limited access to indoor spaces with clean, filtered air while recreating, and lack of access to protective equipment such as respirator masks. Smoke events may also disrupt planned travel itineraries, leading to congestion on major highways such as Interstate 84 and State Highway 14 during periods of poor visibility or evacuation activity, increasing safety risks for unfamiliar drivers.

To address these challenges, informational handouts have been developed for distribution in hotels, vacation rentals (including VRBOs and Airbnbs), and other lodging facilities throughout the Gorge. These materials provide guidance on understanding the AQI, identifying sensitive populations, recognizing symptoms of smoke exposure, and taking steps to protect health during smoke events. Providing clear, accessible information at points of lodging and recreation can support safer decision-making and reduce health risks for visitors during wildfire season (EPA, 2023b; CDC, 2023b).

Mental Health Impacts of Wildfire Smoke

Even when a wildfire does not pose an immediate threat to life or property, prolonged smoke events can have significant psychological, social, and economic impacts on individuals and communities (Humphreys et al., 2022; Cunsolo & Ellis, 2018; Bulkeley, 2020; Eisenman & Galway, 2022). Although mental health impacts are often secondary considerations during wildfire and smoke responses, participants in surveys, focus groups, and public listening sessions consistently described heightened anxiety, stress, sadness, anger, frustration, and depressive symptoms during smoke events. These findings are consistent with broader research demonstrating that wildfire smoke exposure is associated with increased psychological distress, even in the absence of direct fire exposure or evacuation (Humphreys et al., 2022; Cunsolo & Ellis, 2018; Clayton et al., 2017).

In the Gorge, these impacts may be particularly pronounced. Many residents have chosen to live in the region because of their strong connection to the outdoors, while others depend on outdoor-based livelihoods such as orchard work, recreation, tourism, and tribal fishing. During smoke events, outdoor

workers may be forced to choose between working in unsafe air conditions and losing income, creating significant financial strain, moral distress, and fear of long-term health consequences (Navarro, 2020; Becerra, 2025; MacMurdo et al., 2025; Reid et al., 2016). This tension between economic survival and personal health was a recurring theme in community discussions.

During public listening sessions and focus groups, many participants identified isolation and loneliness as among the most difficult aspects of smoke events. Residents described staying indoors for days or weeks during major smoke events associated with the Eagle Creek Fire (2017) and the Labor Day fires (2020). These experiences were compounded during 2020, when wildfire smoke coincided with COVID-19-related quarantine and social distancing, further restricting access to outdoor spaces and social connection. Research has shown that prolonged indoor confinement, particularly when paired with uncertainty and environmental threat, can significantly worsen mental health outcomes, including depression and anxiety (Brooks et al., 2020; NASEM, 2020).

Studies have also documented feelings of guilt, grief, and moral stress among residents who evacuate during wildfire events, particularly in close-knit rural communities where leaving may feel like abandoning neighbors, land, or cultural responsibilities (Cunsolo & Ellis, 2018; Humphreys et al., 2022). These emotional responses were echoed by Gorge residents who described distress related to evacuation decisions and prolonged displacement during major fire events.

Focus group participants reported signs of cumulative distress during extended smoke events, including irritability, sleep disruption, difficulty concentrating, and a sense of helplessness. Parents of young children frequently described the emotional toll of keeping children indoors for extended periods, often in small homes or apartments with limited space for physical activity. One parent shared, “Staying inside for days is not acceptable. It’s torture for them, torture for us.” Research indicates that caregivers of young children experience heightened stress during environmental emergencies due to increased caregiving demands and concerns about children’s physical and emotional wellbeing (Clayton et al., 2017; Lowe et al., 2019).

Older adults reported similar mental health challenges, particularly during the Eagle Creek Fire and evacuations from Cascade Locks. Several older participants described feelings of fear, sadness, and loss of routine, as well as grief associated with the inability to engage in meaningful activities such as gardening, walking, or socializing outdoors. As one older adult stated, “Mental health. When the air looks yellow and thick, it is depressing and scary. You can’t garden, you can’t exercise.” These experiences align with evidence showing that loss of autonomy, disruption of routines, and reduced physical activity during smoke events can worsen mental health (Reid et al., 2016; NASEM, 2020).

A study examining the mental health and wellbeing impacts of wildfire smoke in rural communities highlights the unique vulnerabilities of regions like the Columbia River Gorge. As Humphreys et al. (2022) note:

“Across the arid rural West, where much of the wildfire risk is high, economies often depend on the outdoors in the summer, with industries including tourism, agriculture, and construction. Many residents have chosen to live in these areas due to the proximity and access to natural resources and the natural environment, with ongoing access to the outdoors being crucial for wellness.”

For residents living in poverty or in rural areas with limited access to mental health services, these challenges are often intensified. Limited availability of behavioral health providers, transportation barriers, stigma, and cost can delay or prevent access to care, leading to prolonged or untreated distress following smoke events (Rural Health Information Hub, 2023; York et al., 2020). Over time, repeated smoke seasons may contribute to chronic stress, anticipatory anxiety, and climate-related grief, further eroding community wellbeing and resilience (Clayton et al., 2017; Cunsolo & Ellis, 2018).

Impacts to Local Industries During Smoke Events

Agriculture

Agriculture is a major component of the Columbia River Gorge regional economy, with production spanning specialty fruit, field crops, vineyards, and livestock. The Gorge and surrounding counties are known for crops including apples, pears, cherries, wine grapes, and wheat, along with cattle and sheep production (ODA, n.d.; USDA NASS, 2022).

Wildfire smoke can affect agricultural production through multiple pathways. Fine particulate matter and reduced solar radiation can interfere with plant physiological processes, including photosynthesis, while surface deposition of particles on leaves can further reduce plant function. Reviews of air pollution impacts on vegetation document that particulate pollution and associated atmospheric changes can reduce plant productivity and contribute to plant stress under certain exposure conditions (von Schneidmesser et al., 2020). Specialty crops such as wine grapes are particularly sensitive to smoke exposure during key ripening periods. Research led by Oregon State University and USDA-supported programs has documented that volatile compounds in wildfire smoke can be absorbed by grapes and later produce sensory defects known as “smoke taint,” which can substantially reduce wine quality and marketability (Oregon Wine Research Institute, n.d.).

Wildfire smoke also affects agricultural labor conditions. Outdoor workers, including farmworkers, face elevated health risks during smoke events, and hazardous air quality can slow or halt operations. As documented in the “New OSHA Regulations” section of this report on page 30, Oregon has adopted a permanent occupational wildfire smoke protection rule that requires employers to implement exposure controls, provide respirators at specified air quality thresholds, and modify work practices during smoke events, which can affect harvest timing and operating costs.

Livestock may also experience adverse effects from prolonged smoke exposure. Ranches et al (2025) note that heavy smoke can contribute to respiratory stress, reduced feed intake, and overall animal performance impacts, particularly during extended events.

Fishing

Fishing is an important economic, cultural, and subsistence activity in the Columbia River Gorge. Columbia River fisheries are strongly seasonal, with major salmon runs, including Chinook and coho, occurring from spring through fall. Late summer and early fall fishing periods overlap with peak wildfire smoke season in the Pacific Northwest, increasing the likelihood that smoke events and fire-related access restrictions will affect fishing activities, river access, and fish marketing operations. Tribally managed fisheries operate on the Columbia River and its tributaries such as the Klickitat River. These fisheries likewise occur during summer and fall periods when wildfire smoke exposure

risk is highest. During the 2017 Eagle Creek Fire and the 2020 Labor Day wildfire events, major highway closures and smoke conditions disrupted transportation corridors across the Columbia River Gorge and other parts of Oregon. Public agency closure reports and transportation updates from ODOT documented extended roadway restrictions and detours, which affected travel between fishing access sites, buyers, and processors.

Direct-to-consumer tribal fishing sales sites in the Columbia River Gorge, including “over-the-bank” sales near Cascade Locks, are sensitive to access restrictions, roadway closures, and smoke impacts. During major wildfire events, closures of Gorge corridors and bridge crossings have limited both fisher access and visitor traffic. Columbia River Inter-Tribal Fish Commission (CRITFC) and partner agencies coordinate around site access and safety during such events.

From a human health perspective, many fishers continued working during smoke events due to fixed fishing seasons and fear of income loss. This placed elderly fishers and youth—particularly those with underlying respiratory or cardiovascular conditions—at increased risk (Reid et al., 2016; EPA, 2023). Many Tribal fishers live in temporary camping conditions such as tents and trailers that lack adequate air filtration, limiting their ability to escape smoke exposure during prolonged events.

Tourism

The Columbia River Gorge is a year-round destination for outdoor recreation and tourism. Windsurfing, hiking, snow sports, wineries, and scenic attractions draw an estimated 2 million visitors annually along the Historic Columbia River Highway, with approximately 90 percent of visits focused on nature viewing and hiking (Travel Oregon, 2023). Multnomah Falls alone receives approximately 2 million visitors per year, with peak summer visitation reaching up to 8,000 visitors per day in July and August (USFS, 2025). Seasonal festivals such as Hops Fest and Harvest Fest collectively attract more than 40,000 visitors annually.

Outdoor tourism is a critical source of income for residents and businesses throughout the Gorge. Wildfire smoke and fire-related closures have had substantial economic impacts on the tourism sector. In 2017, Oregon wildfires resulted in an estimated \$51.5 million loss in visitor spending, with significant impacts to the Columbia River Gorge and Central Oregon (Travel Oregon, 2018). Businesses responding to a Travel Oregon survey reported that lodging, food and beverage services, and retail experienced the greatest losses during wildfire seasons.

Beyond immediate revenue loss, smoke events contribute to longer-term economic impacts by altering visitor perceptions of safety and destination appeal. Approximately half of surveyed tourism businesses indicated concern that the 2017 fire season would negatively affect visitation in 2018 due to reputational damage and perceived loss of natural beauty (Travel Oregon, 2018).

Additional smoke-related impacts to tourism include increased cancellations, shortened stays, staffing disruptions, and increased costs associated with refunds, marketing adjustments, and safety messaging. Repeated smoke seasons may also reduce seasonal workforce retention and discourage future investment in tourism-dependent businesses (Travel Oregon, 2023).

New OSHA Regulations

Currently, Federal OSHA regulations lack specific rules to protect workers from smoke. The agency has regulations to protect workers from general airborne hazards through ventilation controls and guidelines on indoor air quality, neither of which can be accomplished for people who work outside. During the Labor Day fires (2020), OSHA issued guidance on how to protect workers from smoke, but no set rules or regulations.

Oregon's workplace safety agency (Oregon OSHA) adopted permanent rules on July 1, 2022, for protection from wildfire smoke and excessive heat. These regulations apply to employers whose employees are or will be exposed to unhealthy or hazardous levels of wildfire smoke. Although these regulations apply only to agricultural employers, their key requirements and exemptions are identical to OAR 437-002-1081, which apply to all other Oregon employers such as general industry, construction, and forest activities. OR-OSHA rules state that employers must notify workers of the AQI rather than rely on workers to use personal devices to find out the AQI. More accurate AQI readings can be found at <https://aqi.espacelabs.us/> or <https://fire.airnow.gov/>.

Below is a summary of the **OR-OSHA Heat and Wildfire Rules**.

What the heat rule does:

- Applies to outdoor and indoor (when there is no mechanical ventilation) work activities, where the heat index equals or exceeds 80 degrees Fahrenheit
- Requires one or more shade areas immediately and readily available to exposed employees who are outdoors
- Requires an adequate supply of drinking water for exposed employees
- Requires an effective rest-break schedule
- Requires a heat illness prevention plan

What the wildfire smoke rule does:

- Applies to employers whose employees are or will be exposed to wildfire smoke where the ambient air concentration for fine particulate matter equals or exceeds an (AQI) of 101.
- Requires employers to provide an approved respirator, such as a N95 when the AQI is above 101
- Requires employers to ensure employees wear approved respirators at or above AQI 251
- Requires employers to ensure employees wear approved respirators at or above AQI 501 and follow medical monitoring, fit testing, and other elements of the Respiratory Protection Standard.
- Requires exposure monitoring and training.
- Requires implementation of communications to relay information before employees are exposed.
- Requires use of engineering and administrative controls, including relocating outdoor workers to enclosed buildings where air can be adequately filtered and relocating work or making work schedule changes to achieve better air quality.

The table below shows the key requirements for specific AQI levels from the OR-OSHA Regulations.

AQI value	Wildfire Smoke standards' key requirements for exposure level
101 - 250	<ol style="list-style-type: none"> 1. Assess and monitor air quality at each work location where employees are exposed 2. Provide and document employee training 3. Implement two-way communication system 4. Implement engineering and administrative controls 5. Provide NIOSH-approved filtering facepiece respirators for voluntary use
251 - 500	<ol style="list-style-type: none"> 1-4. For AQI 101 – 250 above; and 7. Provide NIOSH-approved filtering facepiece respirators for mandatory use by implementing a Wildfire Smoke Respiratory Protection Program in accordance with Appendix A, in the Protection from Wildfire Smoke standards
501 and above	<ol style="list-style-type: none"> 1-4. For AQI 101 – 250 above; and 7. Provide NIOSH-approved respirators for mandatory use by implementing a Respiratory Protection Program in accordance with 29 CFR 1910.134 or OAR 437-004-1041

Community Input on the Community Response Plan (CRP)

Gorge Wide Survey

In the development of the Columbia Gorge CRP, a survey was distributed across the Columbia River Gorge community through a variety of different channels. The survey was promoted on Facebook using posts and paid ads on the Hood River County Extension Service Page and the Wasco County Extension Service Page. The post was also shared by community partners, including the Columbia Gorge Wildland & Fire Information Page. The survey was also shared via the Hood River and Wasco County Extension Instagram pages. The link was also shared in Zoom chats during public listening sessions and community meetings as well as the focus groups. A number of community partners included the survey link in their local newsletters as well, including the Hood River County School District Newsletter to District Families, the Hood River County School District Newsletter to Staff, the North Wasco School District Newsletter to Staff & Families, the Central Gorge Master Gardener Newsletter, the OSU Extension Master Naturalist Newsletter, the Hood River Soil & Water Conservation District Newsletter, the Underwood Conservation District Newsletter, the Gorge Grown Food Network Newsletter, the Columbia Gorge Community College Campus Currents Newsletter, and Thrive Hood River Newsletter.

Hardcopies of the survey were also made available at One Community Health Clinics in Hood River and The Dalles, county public health departments in Hood River and The Dalles, and The Next Door, Inc. offices in Hood River and The Dalles. Hard copies were also distributed to focus group participants with an option to take the survey using a smartphone using a QR code. The survey was live from February 2nd to March 27th and received **764 responses**. Results from the survey are available for review in the appendix and are parsed out by county.

Public Listening Session

On February 3rd, a virtual public listening session was conducted for Columbia Gorge community members to voice their opinions and provide insight into the CRP. **Thirty people** attended. When asked about the best way for participants to receive communication regarding smoke notifications, the top three selected responses were text, email, and social media. One hundred percent of participants selected text messages as a good way to receive communication.

We also asked participants what they believed the role of local government, emergency services, and health providers should be. Many participants said that reaching out to the caretakers and doctors of the most vulnerable people would be helpful, especially because many sick or elderly people may not have access to social media, email, or text. They agreed that it would be helpful to communicate with patients through their healthcare providers to ensure accurate and timely smoke data and protection strategies reach these vulnerable populations. Participants noted that messaging from trusted agencies that have already built relationships with vulnerable populations is important and would lead more people to act.

Focus Groups

We conducted four focus groups with various smoke-sensitive groups around the Gorge. We spoke with two groups of older adults aged 65+; one group in Cascade Locks and one group in Mt.Hood/Parkdale. We also held two focus groups for parents of young children: one in Hood River

and one in The Dalles. To engage with the Spanish-speaking community, partners at The Next Door Inc., Equity Outreach and Training Services (EOTS) organized a focus group with Spanish speakers from Hood River and Wasco Counties. All of the focus groups were conducted with small groups of 8-20 participants. Participants of the older adult focus groups were asked to complete the Community Response Plan survey at the end of the focus group via QR code or hard copy. The survey closed before the other focus groups occurred.

Adults age 65+ Focus Group Trends

Mt.Hood/Parkdale focus group participants responded that they mostly stayed indoors and used masks to protect themselves during past smoke events, and they struggled the most with mental health due to not being able to exercise outside, feeling isolated, and fear of smoke and fire.

“My husband has COPD so I didn’t let him outside. We didn’t run the air conditioner because it sucked up some air from cracks in the house. If I went out I used an N95 but I didn’t let my husband out. I put towels in front of the doors. We had to use a lot of caution.”

Participants also reported that access to low-cost air filters and information on effective air filters would help them prepare the most for smoke events. One participant commented that it would be helpful to have “availability for seniors with limited income that maybe can’t afford air filters. So, we can buy them before these events happen.” We asked participants what the best way for them to receive information about smoke is, and the most popular response was text. Some mentioned that they would prefer radio or email, and multiple participants responded that a community or highway message board would be helpful and lead them to act. Another participant suggested that information needs to reach people faster.

“One time it was 2 in the morning, and my smoke alarms were going off. Then I realized ‘oh it must be fire and I should close all my windows,’ but I realized I had been breathing that all night.”

Cascade Locks focus group participants provided unique responses as many of them were forced to evacuate and experienced smoke and fire firsthand from the Eagle Creek fires in 2017. Participants in Cascade Locks responded that the biggest challenges during past smoke events were receiving timely information and being able to evacuate since highways and roads often close during smoke and fire emergencies. A few participants reported purchasing or making their own air filters since the Eagle Creek fires, but a couple of participants also expressed distrust in air filters and masks as well as concern for the cost and lifespan of filters. Most participants agreed that getting information before air quality becomes dangerous would be the most helpful to protect themselves, as well as better traffic control and pre-planned evacuation routes.

Most participants said they were not aware of how bad smoke is for their health and that officials need to do a better job of educating the public about how harmful smoke and particulate matter are for their health. Many were concerned about the risk of causing or exacerbating chronic conditions. One participant explained, “there should be more awareness of the consequences of breathing

smoke. My firefighter friend has been breathing smoke his whole life and now he is fighting lung disease.” Others echoed this concern, noting family member’s careers fighting fire without protection.

“My husband was a firefighter in Southern California. There was a fire and their crew went into deal with it and they just had bandanas (on their mouths) to protect them. I don’t think there has been sufficient appreciation of how dangerous smoke is.”

Both Hood River and Cascade Locks focus group participants showed overwhelming support when asked if they would like to receive targeted messaging from their doctors based on their health issues during smoke events. Participants expressed trust in their health professionals, and one participant explained “This older population has more of a connection with doctors, I mean we see them all regularly. It’s a good idea.”

Parents of Children < 15 Focus Group Trends

We spoke with parents from **Hood River and The Dalles** to determine what challenges parents of young children face during smoke events. The most common challenge that parents reported was the inability to go outside and be active as a family. All participants said it was difficult to have little kids at home, especially in smaller apartments or houses. Some parents stated that after a couple of days, they just went outside with children despite the smoke because it was easier than keeping them inside. Financial concern was also a common theme in these focus groups, with many parents unable to pay to weatherize their older homes.

“I remember waking up with a bad headache in the summer. I shut the windows. My little ones were only 3 and 5 at the time and they wanted to go outside. I had to keep them inside and tell them ‘no, you can’t breathe the air.’”

When asked what would be most helpful during a smoke event, many participants talked about community clean air gathering centers with physical activities for their children and for themselves such as a gym, indoor pools, bowling alleys, or other indoor areas with other families to interact with. Families stated clearly that they do not want to fully evacuate their homes during smoke events but need gathering spaces for social interaction and respite from smoke in homes with poor ventilation and filtration.

Spanish Speakers Focus Group Trends

The majority of Spanish speakers participating in our focus group work as agricultural and farm workers in the region. Their experiences were characterized by the challenges of having to choose between going to work so they can be paid and protecting their health.

“For those of us who work in the fields, many times when the fires occur it is harvest time...I would like for there to be help [paid leave] or something, yes, because there is the option of going to work but also if there is help then you could not risk your health and thus protect yourselves better and protect your family too.”

Others discussed the difficulty, stress and mental health challenges of working all day long in the smoke.

“When there was a lot of smoke, well since we worked in the orchard, the truth is it was very awful and hopeless, because it happened to us at a time when we were picking pears. Then, well, the heat of the sun and well from the smoke, well we would finish with very dirty clothes and faces and well, when getting home it would be all dark and it would be something very hopeless and it affected your throat...we were out harvesting. And about the masks, well they told us that we had to use them, and we did too because I saw that a lot of ash was falling, it was very very uncomfortable walking around harvesting with a mask on, the truth was it was a very hard and stressful experience.”

Some workers were provided with masks when the air quality was very bad while others were not. Some shared how hard it was to work with the masks on and how stifling it was for the challenging manual labor they do climbing ladders, carrying heavy loads, and the urgency to work quickly to ensure piece rates and pay are as high as possible. One participant shared “I would put it [mask] on but at times I would take it off because sometimes I felt worse with the mask on because you need more air.”

When asked about communication strategies to reach farmworkers, all participants agreed that text messaging would be the best and fastest strategy to reach people. Others added that radio would be another good way to get out information. Many stated that they all have phones and use their weather apps to check local AQI, though may lack a strong understanding of what the various AQI numbers mean.

“I also look at the air quality in the weather app because when it's at 400, I don't know what the number means, but that is when they let us go home because the air quality is very bad and so we look there and that's when we are let go to go home.”

This sentiment was shared across all the focus groups, reiterating the importance of providing regular plain language public health information that is easily understood and actionable. As one person stated, “I think that...instead of just giving us a message about the air quality, they should also send us some recommendations to find out what we can do.” They also shared confusion around the various levels of evacuation orders for fires, again emphasizing the importance of plain language actionable messaging, especially during emergencies.

The group also discussed the importance of trusted messengers sharing critical health and emergency information with them. Many would trust a text message or information coming from their local health clinic, especially One Community Health, their children's school, or the farm owners/patrones/bosses.



“It’s important to know how to protect my kids. I don’t feel like I had a lot of information about how impactful smoke is on our health. That wasn’t something I ever read in a parenting book or prepared for. Just not having enough information is the most harmful thing for us.”

-Parent in a Focus Group

Means of Communication and Notification to the Public About Fire, Smoke Impacts, and Air Quality

Information was collected from the public survey, public input sessions, and focus group meetings; and compiled together to create the best laid out action plan for Hood River and Wasco Counties in addressing the smoke vulnerable population while utilizing prescribed fires to manage our forests.

Text Message Alerts

Both Hood River and Wasco County’s emergency services use the [OR-Alert](#) Emergency Alert Notification System on the Everbridge Platform. The terms “OR-Alert” and “Everbridge” are often used interchangeably in conversations about emergency text alerts. It is a free text alert system that any Oregon resident can sign up for to get alerts about wildfires, prescribed burns, and other smoke events. Individuals may register multiple addresses within OR-Alert, but all must be within one county as of this writing. It is recommended that each individual in a household set up an account to ensure that all household members receive an alert. Suggested locations to register include, home, work, school, and any other place an individual or family may spend a great deal of time. People can set up multiple accounts in different counties if work or travel takes them to different counties across the region or state.

Most survey respondents indicated that they would like to opt-in to receive notifications about smoke through OR-Alert even though smoke and poor air quality are not currently considered immediate threats/emergencies. However, given that poor air quality can quickly exacerbate existing heart and lung conditions and result in life threatening heart or asthma attacks, we argue that notifications should be sent out to help protect area residents from the threat of exposure to poor air quality and smoke.

Social Media and Websites

The Columbia Gorge Wildland & Fire Information page on Facebook often posts when prescribed burns are happening in the area, with about 26,500 members. The page is only active during fire season, though they report on controlled burns, wildfires, and other disasters that cause high levels of smoke.

Ten air quality monitors were installed around the Gorge as part of the OSU Extension Service’s secured grant from the Department of Environmental Quality. These air quality monitors were installed at elementary and middle schools as well as a few orchards in order to obtain more accurate real-time air quality data. The data from the monitors is reported live on a website that shows each monitor’s Air Quality Index number. There is a chart with the corresponding AQI number, color, and level of danger to one’s health.

In November of 2023, we launched a website called [SmokeReadyGorge.org](#). This website serves as a one-stop-shop for smoke and fire information in the Columbia River Gorge. The website features an interactive air quality map from PurpleAir, an explanation of air quality throughout the seasons, smoke readiness guidance, and links to enroll in local alerts. All content is bilingual and in plain language.

Schools

We have partnered with local school districts to install indoor and outdoor air quality monitors at each K-12 school in Hood River and Wasco Counties. All area schools will have monitors and will be able to use them following the OHA and OSAA guidelines. This will allow individual schools to access accurate real-time air quality information and make decisions about recess, after school outdoor activities, windows being closed, busing, and other precautions. This communication will happen between the principal of the school and families via email, the school website, or school communication apps and/or text messages and phone calls.

According to the [OSAA Air Quality Guidelines](#), The Air Quality Index (AQI) should be monitored throughout the day, and during an event, to have the best data possible to make informed decisions about conducting practices and competitions. School personnel shall review the AQI information for all regions throughout the state on the SmokeReadyGorge.org website or the Environmental Protection Agency (EPA) Air Now website at <https://airnow.gov> or the EPA's Fire and Smoke map at <https://fire.airnow.gov/> to determine if action is necessary. Schools should regularly review the AQI throughout events to assess deteriorating conditions.

Radio

Historically, radio broadcasting has been an effective way to reach residents of the Gorge. A number of different stations broadcast throughout the region. Radio Tierra is a station that broadcasts Spanish news and shows in Hood River, The Dalles, and Parkdale. We plan to record multiple PSAs for smoke events when the AQI is at different levels above 101. We will collaborate with Radio Tierra to have these PSAs on file to be played when the air quality is unhealthy and unhealthy for sensitive groups. The PSAs will contain information on who might be affected and how they can protect themselves.

Description and Rationale of all Communication Methods

Communication Method	Rationale	Responsible Party	Intended Audience
Everbridge Emergency Notification System (ORalert)	<p>The community will be urged to opt-in to both emergency notifications on ORalert and to register to receive low-emergency alerts regarding smoke.</p> <p>When the AQI is above 101, a low-emergency alert will go out via text message, email, or the app. This alert will include information about the AQI, what areas are experiencing smoke, what groups might be affected, and how people can protect themselves.</p>	Hood River County Emergency Manager, Wasco County Emergency Manager, County Sheriff's Departments	Potentially affected residents

Handouts/Pamphlets	<p>Informational handouts and bookmarks will be distributed to all local K-12 students.</p> <p>Additionally, brochures will be provided to local hotels, VRBOs, and Airbnbs. This information will include how to understand and read the AQI, who is included in sensitive groups, and how to protect yourself from smoke.</p>	<p>Hood River County School Superintendent, Wasco County Superintendent, School Principals</p> <p>Gorge Tourism Alliance</p>	<p>Parents and families of area K-12 students</p> <p>Tourists</p>
School Pages, Email Alerts, ParentSquare, Texts	<p>Each school in the Gorge will have their own air quality monitor installed. Students and faculty will monitor the air quality reading and faculty leaders will make decisions about outdoor activities such as recess and after-school sports based on the level of danger during smoke events. This will be communicated through school websites, email lists, and apps.</p>	<p>Hood River County School Superintendent, Wasco County Superintendent, School Principals</p>	<p>Parents and families of area K-12 students</p>
Social Media/Website	<p>Various websites will contain information during smoke events, including:</p> <ul style="list-style-type: none"> - SmokeReadyGorge.org - ReadysetGorge.com - Oregon Department of Forestry website - Columbia Gorge Wildland & Fire Information Facebook page, - Wasco and Hood River Fire Department Facebook pages - DEQ outdoor and open burning map 	<p>Gorge Tourism Alliance, Columbia Gorge Wildland & Fire Information Page Moderators, ODF</p>	<p>Potentially Affected Residents</p>
Radio	<p>We plan to record multiple PSAs for smoke events when the AQI is at different levels</p>	<p>Radio Tierra, Bicoastal Media</p>	<p>Potentially Affected Residents</p>

	above 101. We will collaborate with Radio Tierra to have these PSAs on file to be played when the air quality is unhealthy and unhealthy for sensitive groups. The PSAs will contain information on who might be affected and how they can protect themselves.		
Clinic Text Messaging Services	Patients will receive text message alerts if the AQI is above 101.	One Community Health	Patients of One Community Health

During Controlled Burn Season

Burn Location	Activity	Responsible Party	Intended Audience
OFS/USFS/Federal Land Burns in Wasco and Hood River County	We recommended utilizing additional advanced notification strategies about prescribed burns to reach the general public	USF, OFS	Potentially affected residents
Hood River and Wasco County Orchardists	We recommended utilizing additional advanced notification strategies about prescribed burns to reach the general public	Orchardists	Potentially affected residents
Private landowners	<p>Before burning, private landowners should obtain a burning permit.</p> <p>They should then check the OFS smoke management forecast to make sure the weather conditions are safe to burn (no inversion, no wind).</p> <p>Landowners are asked to inform their local fire department AND any neighbors before burning.</p>	Private landowners	Potentially affected residents

Community Response Plan Detailed Protocol

Detailed Procedure for Wildfire Smoke Event by AQI Level
DRAFT Version 04.01.2025

Contact Lauren Kraemer for edits/questions: Lauren.Kraemer@oregonstate.edu

ANNUAL CHECK POINTS:

By May 31st of each year, there will be a **Seasonal Round-up** attended by all essential emergency management, public health, and involved community partners to clarify roles and review strategies for fire, smoke, Public Safety Power Shut-Offs (PSPS), evacuations, and any other necessary action items during wildfire and smoke events. Involved organizations should update their plans and chains of command for communication in the event of a smoke event on weekends, holidays, or power shutoffs.

July 1st has historically been the annual start of the fire season/burn ban. Starting July 1st, communities will be in “Ready” mode; everyone knows what they need to do in the event of a wildfire smoke event and monitors have been designated.

Early September has historically been when large scale fires have impacted our region. These fires are often human caused and heightened by end of summer conditions of high heat, low humidity, and strong east-wind. Community partners should be on high alert in mid-August. Consider closures to forest land, trails, and fire bans.

By November 30th each year, there will be Post-season Round-up to discuss how the Community Response Plan worked, how smoke events were handled, any gaps and improvements for the next season.

Step 1: County/Regional Public Health partners and individual organizations will identify individual(s) to serve as a “smoke monitor” to check regional air quality monitors installed around the Gorge every morning at: <https://www.fire.airnow.gov/> (Hosts DEQ and PurpleAir monitors) or <https://map.purpleair.com>, <https://aqi.espacelabs.us> (Hosts 10 e::Space labs monitors)

If the AQI is 0-50, the smoke monitor will do nothing.

If the AQI is 51-100, the smoke monitor will do nothing but will watch monitors and weather patterns more closely to identify if smoke levels will increase. Consider checking monitors 2-3 times per day.

If the AQI is above 100, the smoke monitor will initiate the Community Response Plan based on the AQI readings outlined on following pages. (A detailed AQI chart is included at the end of this document.)

If the AQI is 101-150 (unhealthy for **sensitive groups as identified by EPA):

A chain of communications will be set off to inform sensitive groups of the poor air quality and potential health hazards.

***Note: Sensitive groups make up 60-70%⁽¹⁾ of a community population and include: children 0-21, pregnant people and unborn babies, older adults, people with preexisting conditions--especially of the heart or respiratory system, low-income and unhoused people, and outdoor workers.*

(1) Carol Trenga, PhD, Oregon Health Authority, State Epidemiologist, Presentation at ASPIRE Center Symposium

Action Items:	Responsible Parties:
<p>Schools will send out text messages to parents, staff, and faculty. The message will include:</p> <ul style="list-style-type: none"> • Air Quality Index • Associated health risks • How to protect yourself and your family • Link to SmokeReadyGorge.org for more information • Information about any canceled activities such as recess or after-school activities or childcare • Resources? 	<p>School communications personnel using OHA and OSAA Guidelines.</p> <p>Oregon Health Authority Community Wildfire Resources Page</p>
<p>Health clinics will send text messages to sensitive patients such as pregnant people, caregivers of children, older adults, and people with respiratory or cardiac conditions. Messages will include:</p> <ul style="list-style-type: none"> • Air Quality Index • Associated health risks • How to protect yourself and family • Link to SmokeReadyGorge.org for more information 	<p>Population Health Coordinator</p> <p>Health Clinic Public Information Officers, Social Media Managers</p>
<p>Elder-serving organizations will send text messages and possibly initiate phone tree that will include:</p> <ul style="list-style-type: none"> • Air Quality Index • Associated health risks • How to protect yourself and family • Link to SmokeReadyGorge.org for more information <p>Home visits to sensitive patients will be conducted (?)</p>	<p>Directors of senior/adult centers</p> <p>Meals on Wheels</p> <p>Circles of Care</p>
<p>Emails from Organizational listservs serving Smoke Susceptible Populations and Harder to Reach Populations.</p>	<p>Listserv managers use talking points from above.</p>
<p>OSHA Guidelines are triggered, impacting all outdoor workers. Voluntary mask use and communication systems required to be in place.</p>	<p>Employers/Managers of outdoor and farm workers</p>
<p>Community partners will distribute N95 masks to smoke sensitive populations.</p>	<p>Public Health Departments One Community Health Other agencies as available</p>

If the AQI is 151-200 (Unhealthy):

Action items set for AQI 101-150 will happen, AND a chain of communications will be set off to inform ALL groups of the poor air quality and potential health hazards.

Action Items:	Responsible Parties:
<p>Everbridge/OR-Alert Text Messages will be sent out across the community including:</p> <ul style="list-style-type: none"> • Air Quality Index • Associated health risks • How to protect yourself and family <p>Link to SmokeReadyGorge.org for more information</p>	<p>Wasco County and Hood River County Emergency Managers</p> <p>Sheriff’s departments</p>
<p>Schools will cancel outdoor recess and outdoor extra-curricular and afterschool activities per the Oregon Health Authority Air Quality and Outdoor Activity Guidance for Infants, Children and Youth</p>	<p>School administrators at individual school/district level depending on AQI</p> <p>School communications personnel</p>
<p>Pre-recorded Radio public service announcements will be aired across the community.</p>	<p>Radio Tierra, Bi-Coastal, others as available</p>
<p>Broader Facebook outreach posts:</p> <ul style="list-style-type: none"> • Columbia Gorge Wildland Fire Information Page • Hood River County Sheriff • Wasco County Sheriff • Columbia Gorge News • Columbia Community Connection • Mid-Columbia Community Action Center • Hood River Valley Adult Center • Mid-Columbia Senior Center • Hood River Moms • Play & Learn @ Home • Columbia Gorge Postpartum Support • The Next Door Inc. • Hood River County School District • North Wasco County School District • Others as identified and available 	<p>Facebook page managers or administrators at each organization:</p> <p>Talking Points:</p> <ul style="list-style-type: none"> – AQI – Associated Health Risks – How to Protect self – SmokeReadyGorge.org – Community Clean Air Gathering Spaces

If AQI is 201-300 (Very Unhealthy):

Action items set for all previous AQI triggers: 101-150 and 151-200 will happen, AND the following action items will be put in motion.

Action Items:	Responsible Parties:
<p>Community Clean Air Gathering Spaces will open up around the community.</p> <ul style="list-style-type: none"> Public transportation systems engaged. <p>Communication regarding public transportation systems.</p>	<p>Mid-Columbia Community Action Council (MCCAC)</p> <p>Schools, libraries, churches, community centers, fire halls, and granges</p>
<p>CHWs will begin outreach to protect the houseless population</p>	<p>Community Health Worker Collaborative communication email list</p>
<p>Community partners will distribute N95 masks and air filters (as available)</p>	<p>Public Health Departments</p> <p>One Community Health</p> <p>Other agencies as available</p>
<p>OSHA Guidelines are triggered at 251, mandating all outdoor workers to wear a NIOSH Approved mask.</p>	<p>Employers/Managers of outdoor and farm workers</p>

If AQI is 301 or above (Hazardous):

Action items set for all previous AQI triggers: 101-150, 151-200, 201-300 will happen, AND the following action items will be put in motion.

Action Items:	Responsible Parties:
<p>An emergency will be declared via Everbridge/OR alert</p>	<p>Wasco County and Hood River County Emergency Managers</p> <p>Sheriff's departments</p>
<p>All messaging (Radio PSAs texts, emails) will intensify including:</p> <ul style="list-style-type: none"> Air Quality Index Associated health risks How to protect yourself and family <ul style="list-style-type: none"> Possible evacuation information 	<p>All involved parties/organizations emphasize importance of staying indoors and limiting exposure.</p>
<p>Community partners will trigger their plans for additional services and care needed for:</p> <ul style="list-style-type: none"> Increase in ER & urgent care clinic visits for asthma, heart attack, stroke, etc.. Increase in mental and behavioral health needs. 	<p>Area health clinics, ERs, urgent care</p>

Additional Considerations for smoke events that last longer than 1 week:	
Action Items:	Responsible Parties:
Mental health impacts should be addressed. ↳ Messaging will include mental health resources: <ul style="list-style-type: none"> ○ More encouragement to use Community Clean Air Gathering spaces ○ Information about how to practice mental self-care indoors ○ Mental health hotline phone numbers 	Area health clinics and hospitals Mid-Columbia Center for Living Greater Oregon Behavioral Health Initiative (GOBHI) Faith Communities/Churches/Pastoral Care

Additional Considerations for all smoke events where AQI is above 100:	
Action Items:	Responsible Parties:
If a smoke event occurs during the weekend : <ul style="list-style-type: none"> • Organizations should designate on-call emergency response personnel • Will schools still send out notifications to families? • Does Meals on Wheels run on weekends? <ul style="list-style-type: none"> ○ Extra resources for families of young kids? 	All involved organizations as needed
If a smoke event occurs during a holiday : <ul style="list-style-type: none"> • Organizations should designate on-call emergency response personnel. • Will schools still send out notifications to parents/families? <ul style="list-style-type: none"> - Extra resources for families of young kids? 	All involved organizations as needed
If Public Safety Power Shutoffs : <ul style="list-style-type: none"> • Air filters don't work. • Medical equipment doesn't work without a generator. • Home issues with meals, cooking, refrigeration • No WiFi, monitors won't work or be able to be viewed. Red Flag Warnings <ul style="list-style-type: none"> • Texts from National Weather Service (NWS)—<i>may add to confusion/message fatigue.</i> • Increased fire danger <ul style="list-style-type: none"> Additional trail closures or restrictions 	

A postseason round-up call will happen by November 30th each year to discuss how the CRP worked, how smoke events were handled, and any gaps or improvements for the next smoke season.

Website and Facebook Links Referred to in Community Response Plan:

- Local Air Monitoring Websites
 - [SmokeReadyGorge.org](https://www.SmokeReadyGorge.org) (Hosts local PurpleAir monitors)
 - <https://www.fire.airnow.gov/> (Hosts DEQ and PurpleAir monitors)
 - <https://aqi.espacelabs.us> (Hosts local e:Space labs monitors)
- Oregon Health Authority School Guidelines: <https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/le8815H.pdf>
- Oregon School Activities Association (OSAA) Guidelines: <https://www.osaa.org/health-safety>
- OSHA Guidelines for Worker Protection from Wildfire Smoke: <https://osha.oregon.gov/OSHAPubs/factsheets/fs92.pdf>
- Oregon Health Authority Wildfire Resources Page: <https://www.oregon.gov/oha/ph/preparedness/prepare/pages/prepareforwildfire.aspx>
- Facebook Pages:
 - Columbia Gorge Wildland Fire Information Page: <https://www.facebook.com/groups/ColumbiaGorge.WildlandFireInfo>
 - Hood River County Sheriff: <https://www.facebook.com/hrcso>
 - Wasco County Sheriff: <https://www.facebook.com/WascoCountySheriff>
 - Columbia Gorge News: <https://www.facebook.com/hoodrivernews>
 - Columbia Community Connection: <https://www.facebook.com/columbiacommunityconnection>
 - Hood River Moms: <https://www.facebook.com/groups/1524770201160932>
 - Play & Learn @ Home: <https://www.facebook.com/groups/playandlearnathome>
 - Columbia Gorge Postpartum Support: <https://www.facebook.com/groups/gorgepostpartumsupport>
 - Hood River Valley Adult Center: <https://www.facebook.com/HRVAdultCenter>
 - Mid-Columbia Senior Center: <https://www.facebook.com/midcolumbiaseniorcenter>
 - Mid-Columbia Community Action Center: <https://www.facebook.com/mccactd>
 - The Next Door Inc: <https://www.facebook.com/thenextdoorinc>
 - Hood River County School District: <https://www.facebook.com/Hoodriverschools>
 - North Wasco County School District: <https://www.facebook.com/northwascoschools>
- [SmokeReadyGorge.org](https://www.SmokeReadyGorge.org) went live in November 2023. The goal for the site is to be a ‘one-stop-shop’ for local smoke preparedness and response information for the Columbia River Gorge. Please feel free to share the URL with your networks.

Additional and Adjacent Air Quality and Smoke Work

Smoke Risk Communication with local 7th graders:

We worked with 175 students from two 7th grade science classes at Hood River Middle School during their smoke and air quality unit in winter of 2023. The students learned about smoke, the effects of smoke on health, PM 2.5, the Air Quality Index, and more. We also taught the students about Plain Language and Trauma Informed language in order to have them develop their own Community Smoke Messaging using various communication methods and strategies.

Students were asked to select a smoke-sensitive group and create a targeted message to inform that group about a smoke event using plain language, actionable language, and trauma-informed language. Students chose to make videos, posters, pamphlets, social media posts, text messages, and more.

Grants and Funding Received

OHSU Knight Cancer Institute Community Partnership Program Grant to the Healthy Community Collective (\$10,000):

Through this grant we were able to purchase 10 air quality monitors that have been installed at schools and orchard sites across Hood River and Wasco Counties. These monitors feed into a website hosted by e:Space Labs: <https://aqi.espacelabs.us/> and are helping to improve our access to accurate local data about air quality in our region.

United Way of the Columbia Willamette Grant to The Next Door Inc. (\$14,000): This grant supported extended outreach and enrollment to hard-to-reach and traditionally underserved audiences across the Columbia River Gorge to encourage people to sign up for ORAlert, Oregon's Community Emergency Alert Service, hosted by the Everbridge Platform. ORAlert helps counties communicate during an emergency. This grant supported additional outreach to help people sign up who may have struggled in the past due to housing status, language barriers, immigration status, or other technology challenges.

Oregon Department of Human Services Office of Resilience and Emergency Management (ODHS-OREM) to Hood River County School District: This grant provided funding for the purchase of commercial air scrubbers at several local school sites that can be utilized when standing up cleaner air centers across the region.

Oregon Department of Environmental Quality Alternatives to Burning Grant to the Hood River Soil and Water Conservation District (\$104,000):

This grant funded a number of projects promoting smoke mitigation and alternatives to burning in Hood River County, including free mobile chipping days for local homeowners, piloting the use of an air curtain incinerator for orchard debris, and other communication and outreach projects.

Alternatives to Burning

Yard waste and pile burning is very popular in the area, but there are many alternatives to burning debris. In order to mitigate health effects from smoke, residents should know what they can and cannot burn. The Oregon Department of Environmental Quality lists alternatives to burning such as:

- Recycling paper products when possible
- Disposing of waste at a landfill
- Composting yard debris and kitchen scraps
- Reusing old lumber
- Buying or renting a chipper to create mulch and compost
- Working with neighbors to organize a neighborhood cleanup day
- Taking hazardous materials, including oil-based paints, solvents, garden chemicals and car fluids to a hazardous waste collection site.

Yard Waste Pickup and Dropoff Sites

For residents in Wasco County, Waste Connections is a reliable way to dispose of yard waste. The Dalles Disposal offers roll carts and bins for residential materials including leaves, lawn clippings, branches, and prunings. For orchardists, farms, residents, and commercial businesses, The Dalles Disposal offers a drop box service for yard waste.

For residents in the city of Hood River, Hood River Garbage offers residential composting bins. They will collect food scraps as well as yard waste, including flowers, grass, houseplants, leaves, plant clippings, small branches, vines, and weeds. They also offer drop box services for residential or commercial use for larger quantities of yard waste.

After being picked up or received, all yard waste and compost is transported to Dirt Hugger, a compost facility that turns waste into gardening and landscaping products. These services can be requested on the Waste Connections website and is a great way to compost all yard waste if you aren't able to do so yourself.

Conclusion

We hope we have adequately outlined the effects of smoke and PM 2.5 on our health, particularly for the smoke susceptible and vulnerable populations in our community. In addition, we hope readers have a better understanding of smoke trends in the Gorge and some of the work underway to improve our monitoring, communication, and mitigation of smoke in our region. Unfortunately, exposure to smoke will only increase in the coming years given the challenges of climate change and the need for significant increases in prescribed burning to manage forest health and prevent catastrophic wildfires over time.

This Community Response Plan for smoke in the Columbia River Gorge will be a living document. We anticipate the need for changes, updates, and edits periodically as our partners begin implementing the plan and as our community receives communication and has feedback to share. We hope that this plan will serve as a key first-step in beginning to shift how our community prepares for, makes steps to prevent, and responds to smoke events in the coming years.

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Appendix 1: Organizations Representing Smoke-Sensitive/Vulnerable Populations in the Columbia River Gorge

Organizations Representing Smoke-Sensitive/Vulnerable Populations in the Columbia River Gorge

Organization	Group Represented
Mid-Columbia Community Action Council (MCCAC)	Low-income/unhoused
Mid-Columbia Housing Authority (MCHA)	
Columbia Gorge Food Bank + Facebook**	
Oregon Department of Human Services (ODHS)	
Columbia River Inter-Tribal Fish Commission (CRITFC)	
Columbia Area Transit (CAT)/LINK + Facebook**	
*Natives Along the Big River & Gorge Native American Collaborative	
*Disaster Preparedness for Hard to Reach Populations	
One Community Health (OCH) + Facebook**	Pre-existing conditions/medically vulnerable
Hood River County Health Department + Facebook**	
North Central Public Health District + Facebook**	
Providers of Urgent Care Services (Providence, MCMC, CGFM)	
Meals-on-Wheels	
Volunteers in Action	
Primary Care, Gerontologists, Cardiologists, Respiratory Therapists	
Pacific Source	
Bridges to Health	
*Columbia Gorge Health Council	
Mid-Columbia Children's Council	Children under 15
Oregon Child Development Coalition	
Hood River County School District + Facebook**	
North Wasco County School District + Facebook**	
Private daycare and preschool providers	
Play and Learn at Home Program + Facebook**	
Local Mom Facebook** Pages: (<i>Hood River Moms, White Salmon Moms Group, The Dalles Moms Group</i>)	
*4 Rivers Early Learning Hub	

Mid-Columbia Senior Center & Hood River Valley Adult Center	Adults over 65
Age+	
Independent and Assisted Living spaces	
GOBHI	
Churches	
StrongPeople™ Programs of Oregon State University	
*Aging in the Gorge Alliance	
WIC (Hood River County Health Department and North Central Public Health Department)	Pregnant Women
Columbia Gorge Post-Partum Support Facebook** Pages	
Family Medicine and OBGYN Offices	
Radio Tierra	Spanish speakers
Churches + Facebook**	
Somos Uno + Facebook**	
Community Health Workers (CHWs) serving Migrant and Seasonal Farm Workers (MSFW)	
*Abogados de la Comunidad	
*Latinos en Accion	
*MSFW Communications Workgroup	
The Next Door Inc. + Facebook**	All categories
211	
OR-Alert/Everbridge Community Alert System	
Columbia Gorge Wildland & Fire Information Facebook** Page	
County Emergency Managers & Sheriff's Departments + Facebook**	
City Governments + Facebook**	
Forest Collaboratives	
Chambers of Commerce and Tourism Alliance + Facebook**	

***Collaborative Task Forces who meet regularly to discuss how to reach these populations across a variety of topic areas.**

Facebook Pages** serving a specific target audience or population AND agencies that run their own Facebook Page.

Appendix 2: Air Quality Guide for Particle Pollution

Air Quality Guide for Particle Pollution

Harmful particle pollution is one of our nation's most common air pollutants. Use the chart below to help reduce your exposure and protect your health. Visit [AirNow.gov](http://www.airnow.gov) for your local air quality forecast (www.airnow.gov).

Air Quality Index	Who Needs to be Concerned?	What Should I Do?
Good (0-50)		It's a great day to be active outside.
Moderate (51-100)	Some people who may be unusually sensitive to particle pollution.	<p>Unusually sensitive people: Consider making outdoor activities shorter and less intense. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier.</p> <p>Everyone else: It's a good day to be active outside.</p>
Unhealthy for Sensitive Groups (101-150)	Sensitive groups include people with heart or lung disease, older adults, children and teenagers, minority populations, and outdoor workers.	<p>Sensitive groups: Make outdoor activities shorter and less intense. It's OK to be active outdoors, but take more breaks. Watch for symptoms such as coughing or shortness of breath.</p> <p>People with asthma: Follow your asthma action plan and keep quick relief medicine handy.</p> <p>People with heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.</p>
Unhealthy (151-200)	Everyone	<p>Sensitive groups: Avoid long or intense outdoor activities. Consider rescheduling or moving activities indoors.*</p> <p>Everyone else: Reduce long or intense activities. Take more breaks during outdoor activities.</p>
Very Unhealthy (201-300)	Everyone	<p>Sensitive groups: Avoid all physical activity outdoors. Reschedule to a time when air quality is better or move activities indoors.*</p> <p>Everyone else: Avoid long or intense activities. Consider rescheduling or moving activities indoors.*</p>
Hazardous (301-500)	Everyone	<p>Everyone: Avoid all physical activity outdoors.</p> <p>Sensitive groups: Remain indoors and keep activity levels low. Follow tips for keeping particle levels low indoors.*</p>

***Note:** If you don't have an air conditioner, staying inside with the windows closed may be dangerous in extremely hot weather. If you are hot, go someplace with air conditioning or check with your local government to find out if cooling centers are available in your community.

Key Facts to Know About Particle Pollution:

- Particle pollution can cause serious health problems, including asthma attacks, heart attacks, strokes and early death.
- Particle pollution can be a problem at any time of the year, depending on where you live.
- You can reduce your exposure to ozone pollution and still get exercise! Use [AirNow's](#) (www.airnow.gov) current Air Quality Index (AQI) information and forecasts to plan your outdoor activities.

What is particle pollution?

Particle pollution comes from many different sources. Fine particles (2.5 micrometers in diameter and smaller) come from power plants, industrial processes, vehicle tailpipes, woodstoves, and wildfires. Coarse particles (between 2.5 and 10 micrometers) come from crushing and grinding operations, road dust, and some agricultural operations.

Why is particle pollution a problem?

Particle pollution causes a number of serious health problems, including coughing, wheezing, reduced lung function, asthma attacks, heart attacks and strokes. It also is linked to early death in people with heart or lung disease.

Do I need to be concerned?

It's always smart to pay attention to your air quality, but it's especially true for people who may be at greater risk. They include:

- People with heart disease.
- People with lung disease, including asthma and Chronic Obstructive Pulmonary Disease (COPD).
- Older adults.
- Children and teenagers because their lungs are still developing, and they breathe more air per pound of body weight than adults.
- Pregnant people.
- Minority populations.
- Outdoor workers.

How can I protect myself?

Use [AQI forecasts, available on AirNow.gov](#) to plan outdoor activities. On days when the AQI is forecast to be unhealthy, check AirNow for your current air quality and take simple steps to reduce your exposure, including:

- Choose a less intense activity.
- Shorten your outdoor activities.
- Reschedule activities.
- Exercise away from busy roads.

When particle levels are high outdoors, they can be high indoors too.

Keep particles lower indoors:

- Reduce your [use of fireplaces and wood stoves](#). And don't use candles or smoke indoors.
- Use [HEPA air filters \(https://www.epa.gov/indoor-air-quality-iaq\)](https://www.epa.gov/indoor-air-quality-iaq) in your HVAC system.
- Buy or make your own portable air cleaner designed to reduce particles indoors.

Can I help reduce particle pollution?

Yes! Here are a few tips.

- Drive less: bike or walk, carpool, use public transportation.
- Use energy efficiently; choose ENERGY STAR certified products.
- For cleaner heat, upgrade to a heat pump, electric heat, or ductless heat pumps.
- Keep car, boat and other engines tuned.
- If you use wood for heat, burn it efficiently. Check [EPA's Burn Wise Program](#) for tips (www.epa.gov/burnwise).
- Don't burn leaves, garbage, plastic or rubber.



Appendix 3: OHA Air Quality and Outdoor Activity Guidance for Infants, Children and Youth



Air Quality and Outdoor Activity Guidance for Infants, Children and Youth

Check the local Air Quality Index (AQI) online and do a visual inspection outside. Air quality conditions can change quickly. Compare the AQI information to your local visibility. Use the AQI and visibility that matches the conditions to choose the row to read. If the AQI and local visibility do not match, be cautious and select the worst. Use this guide to determine activity levels and minimize the smoke exposures at different air quality levels. However, if a child has an asthma plan, they should follow it closely. They should also monitor their breathing and exposure to wildfire smoke. Anyone experiencing symptoms should contact a health care provider for further advice. They should call 911 in case of an emergency.

Air Quality Index	Visibility Scale	Short outdoor activities 15 min–1 hour	Medium-length outdoor activities 1 hour–2 hours	Longer outdoor activities More than 2 hours
Good	More than 5 miles with no haze in the air	It's a great day to be active outdoors!	It's a great day to be active outdoors!	It's a great day to be active outdoors!
Moderate	5–15 miles with haze in the air	It's a good day to be active outside. <ul style="list-style-type: none"> • Watch those who are unusually sensitive to air pollution for symptoms of shortness of breath or coughing. 	<ul style="list-style-type: none"> • Watch those who are unusually sensitive to air pollution. • Look for symptoms of shortness of breath or coughing. • Reduce or stop the activity if symptoms arise. 	<ul style="list-style-type: none"> • Watch those who are unusually sensitive to air pollution. • Look for symptoms of shortness of breath or coughing. • Increase rest periods, reduce effort required or make substitutions as needed. • Reduce or stop the activity if symptoms arise.
Unhealthy for sensitive groups	3–5 miles	It's an OK day to be active outside. <ul style="list-style-type: none"> • Allow those sensitive to air pollution to stay indoors if they want to. 	<ul style="list-style-type: none"> • Move activities indoors for those sensitive to air pollution. • Limit outdoor activities to light ones or move them indoors. • Increase rest periods or make substitutions. • Monitor symptoms and reduce or cease activities if symptoms appear. 	<ul style="list-style-type: none"> • Move activities indoors for those sensitive to air pollution. • Limit activities to light ones or move them indoors or to a safer location. • Increase rest periods or make substitutions. • Monitor symptoms and reduce or cease activities if symptoms appear.
Unhealthy	1–3 miles	<ul style="list-style-type: none"> • Keep those sensitive to air pollution indoors as much as possible. • Move all activities indoors for those sensitive to air pollution. • For those who are not sensitive, limit them to only light outdoor activity. 	<ul style="list-style-type: none"> • Move all activities indoors for those sensitive to air pollution. • For groups without sensitivities: <ul style="list-style-type: none"> » Consider moving all activities indoors. » Limit all to light outdoor activities. » Increase rest periods or make substitutions. 	Strongly consider doing any of these: <ul style="list-style-type: none"> • Cancel the event. • Move the event indoors. • Postpone the event. • Move the event to an area with good air quality.
Very unhealthy or hazardous	1 mile or less	<ul style="list-style-type: none"> • Keep all groups indoors. • If any group MUST be outdoors: <ul style="list-style-type: none"> » Limit all activities to light ones. » Increase rest periods, reduce the effort required or make substitutions. 	<ul style="list-style-type: none"> • Move all activities indoors. 	Do any of the following: <ul style="list-style-type: none"> • Cancel the event. • Move the event indoors. • Postpone the event. • Move the event to an area with good air quality.

Watch for symptoms Air pollution can make heart and lung conditions worse. It can prompt coughing, shortness of breath, wheezing and chest tightness. Even those without these health conditions can have symptoms when in higher levels of air pollution. Those with asthma should follow their Asthma Action Plan. This will help them decide if they need to take special precautions. Those who may need rescue inhalers should have them readily available. They should be used as directed by their health care provider. Anyone with heart, asthma or other breathing symptoms should contact a health care provider. Call 911 in an emergency. Children without health conditions may experience mild symptoms such as headaches and a scratchy throat. Drinking more water can help.

Young people's increased risk Younger people are more sensitive to air pollution than adults because their respiratory systems are still developing. Their airways are smaller. They breathe more air per pound of body weight. This is especially true of infants and young children. Younger people with asthma, lung or heart disease, and allergies may be especially sensitive to air pollution. A health care provider can provide advice about how to prevent and treat symptoms. Watch the air quality forecast to decide when to limit the activities of children of any age.

Air Quality Index The Air Quality Index (AQI) rates air quality. It is based on air measures collected from Oregon Department of Environmental Quality (DEQ) air monitors. AQI can tell you how clean or polluted the air is and what the levels of health concern are. For more about AQI in Oregon and how the AQI is calculated, go to [Oregon DEQ Air Quality Today](#) or the [AirNow Air Quality Index](#). During wildfire season the [Oregon Smoke Blog](#) includes a Fire and Smoke Map with both regulatory and temporary monitors.

Using the Visibility Scale In addition to AQI, you can use sight to determine the air conditions in your area. Always use caution and avoid going outside if visibility is limited. This is especially true for persons sensitive to smoke. To do a visual inspection:

1. Go outside.
2. Face away from the sun.
3. Determine the limit of your visible range by looking at things at known distances in miles. Visible range is where you cannot see even high-contrast things.

Allergies Air pollution and allergies can interact to make symptoms worse. To reduce symptoms, take steps to protect children from both air pollution and allergens.

Mental health Disasters, including those that affect AQI away from the disaster, can affect children's mental health. Disasters can disrupt routines and relationships. The Centers for Disease Control and Prevention (CDC) has tools and resources to help care for children in a disaster. These resources help parents and caregivers understand [children's developmental needs](#) to [help children cope during and after a disaster](#).

Masks and respirators Respirators that filter out harmful particles do not come in sizes for children. The smallest size respirator is an extra-small adult size. This size may fit and seal well for some tweens and teens. Younger children should not wear adult respirators. They will not fit and seal well. Seek advice from a health care provider before respirator use if you have a child with pre-existing health conditions. For employers and volunteers of all ages in childcare settings, please see the section below "Employees and Volunteers".

Indoor air quality When outdoor air quality is poor, it is essential to take steps to improve [indoor air quality](#). This can help offset pollutants that come into the building. Consider closing air vents to the outdoors, maintaining adequate airflow, and ensuring air filters are readily available. For more information, visit EPA [Wildfires and Indoor Air Quality in Schools and Commercial Buildings](#). Services delivered to children, such as daycare, often occur in homes. These settings may need to [create clean air space in the home](#).

School closures Each school district decides on school closures, usually working with the local health department. If you have questions about air pollution and health, consult your local health department.

Employees and volunteers This document does not replace Oregon (OR) Occupational Safety and Health (OSHA) authority. Go to the OR-OSHA website for:

- [Wildfire topic](#) page for rules and tools to protect employee and volunteer health during wildfire events.
- [Respiratory protection](#) for other respiratory hazards (for example, volcanic ash).

Note: Employers and volunteers agencies should use this guide and OR-OSHA information to make decisions affecting staff or volunteers, including youth volunteers.

More information For more information on how wildfire smoke can affect your health, go to [Oregon Health Authority's website](#). For other sources of pollution visit the [US EPA Air Quality](#) website. Your local or Tribal health authority may also have resources to answer air pollution and health questions.

Appendix 4: How to Build a Low-Cost Air Filter

HOW TO BUILD A LOW-COST AIR FILTER

Particulate matter in smoke from wildfires is unhealthy to breathe. A simple box fan filter will help keep your indoor air clean.

What you'll need:



Box fan




20"x20"x1" furnace filter
(MERV 13 or FPR 10)



Duct tape or bungee cords


- 1 Place filter on back (air intake side) of fan.



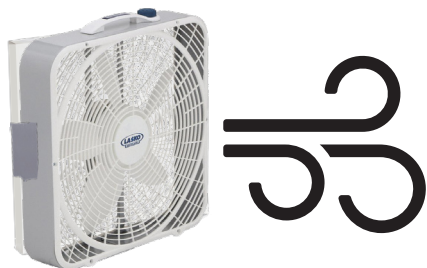
 Make sure that the arrow on the side of the filter is pointing towards the fan.


- 2 Use the duct tape or bungee cords to attach the filter securely to the fan.



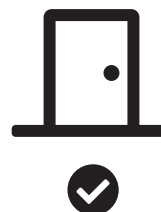
 Use tape or cords only around the edges; do **not** block the air flow through the fan.

- 3 Place in an area away from any obstacles and turn the fan on.



 Run the fan on high for a few hours if your indoor air quality is already poor, then turn it to medium to keep it clean.

- 4 Keep all windows and doors closed to prevent new pollution from getting into your home!



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¿CÓMO CONSTRUIR UN FILTRO DE AIRE DE BAJO COSTO?

Las partículas en el humo de los incendios forestales no son saludables para respirar. Un filtro de ventilador de caja simple ayudará a mantener limpio el aire interior.

Lo que necesita:



Ventilador de caja



Filtro de horno de 20 "x 20" (MERV 13 o FPR 10)



Cinta adhesiva o cuerdas elásticas

- 1** Coloque el filtro en la parte trasera (lado de entrada de aire) del ventilador.



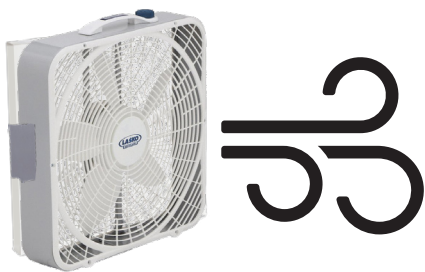
Asegúrese de que la flecha al costado del filtro apunte hacia el ventilador.

- 2** Utilice la cinta adhesiva o los cordones elásticos para sujetar el filtro de forma segura al ventilador.



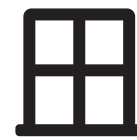
Use cinta o cordones solo alrededor de los bordes; no bloquee el flujo de aire a través del ventilador.

- 3** Colóquelo en un área alejada de cualquier obstáculo y encienda el ventilador.



Haga funcionar el ventilador a máxima potencia durante unas horas si la calidad del aire interior ya es deficiente, luego gírelo a medio para mantenerlo limpio.

- 4** ¡Mantenga todas las ventanas y puertas cerradas para evitar que nueva contaminación ingrese a su hogar!



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Appendix 5: Combined Results of the Community Response Plan for Columbia Gorge Region

Appendix 6: Results of the Community Response Plan by County: Hood River

Appendix 7: Results of the Community Response Plan by County: Wasco

Appendix 8: Results of the Community Response Plan by County: Sherman

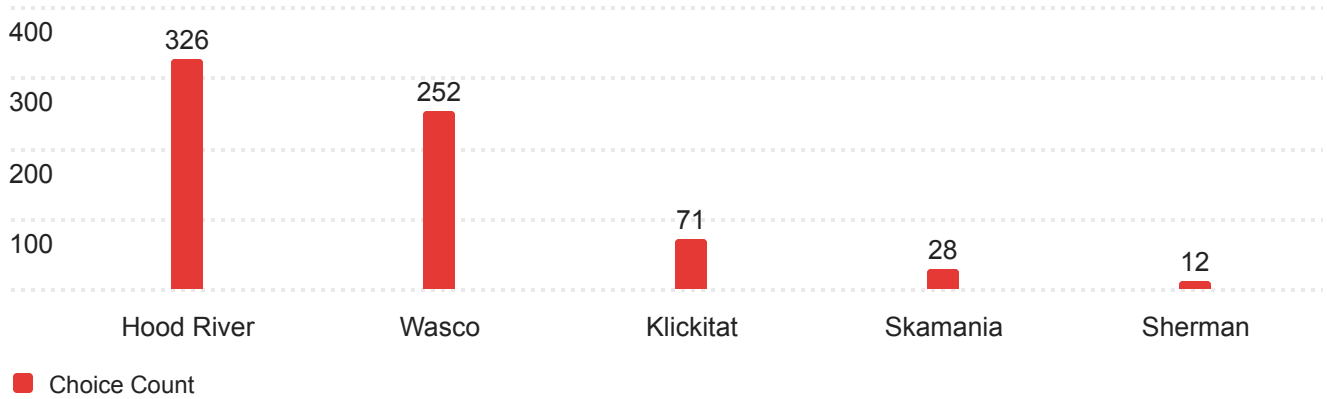
Appendix 9: Results of the Community Response Plan by County: Klickitat

Appendix 10: Results of the Community Response Plan by County: Skamania

Columbia Gorge Community Response Plan Survey Results Report March 2023 (764 Responses)

Report Created by Lauren Kraemer | Associate Professor | Oregon State University Extension Service

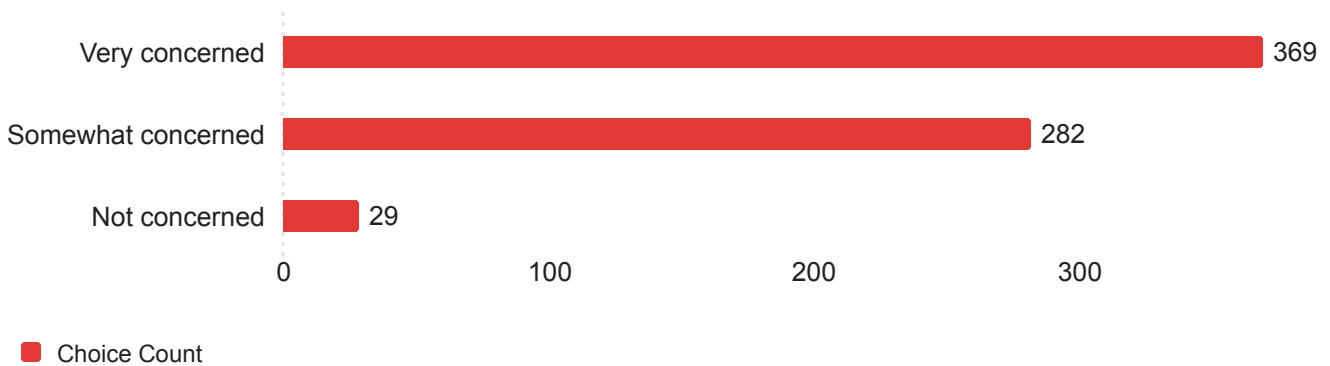
Q3. Which county do you live in?



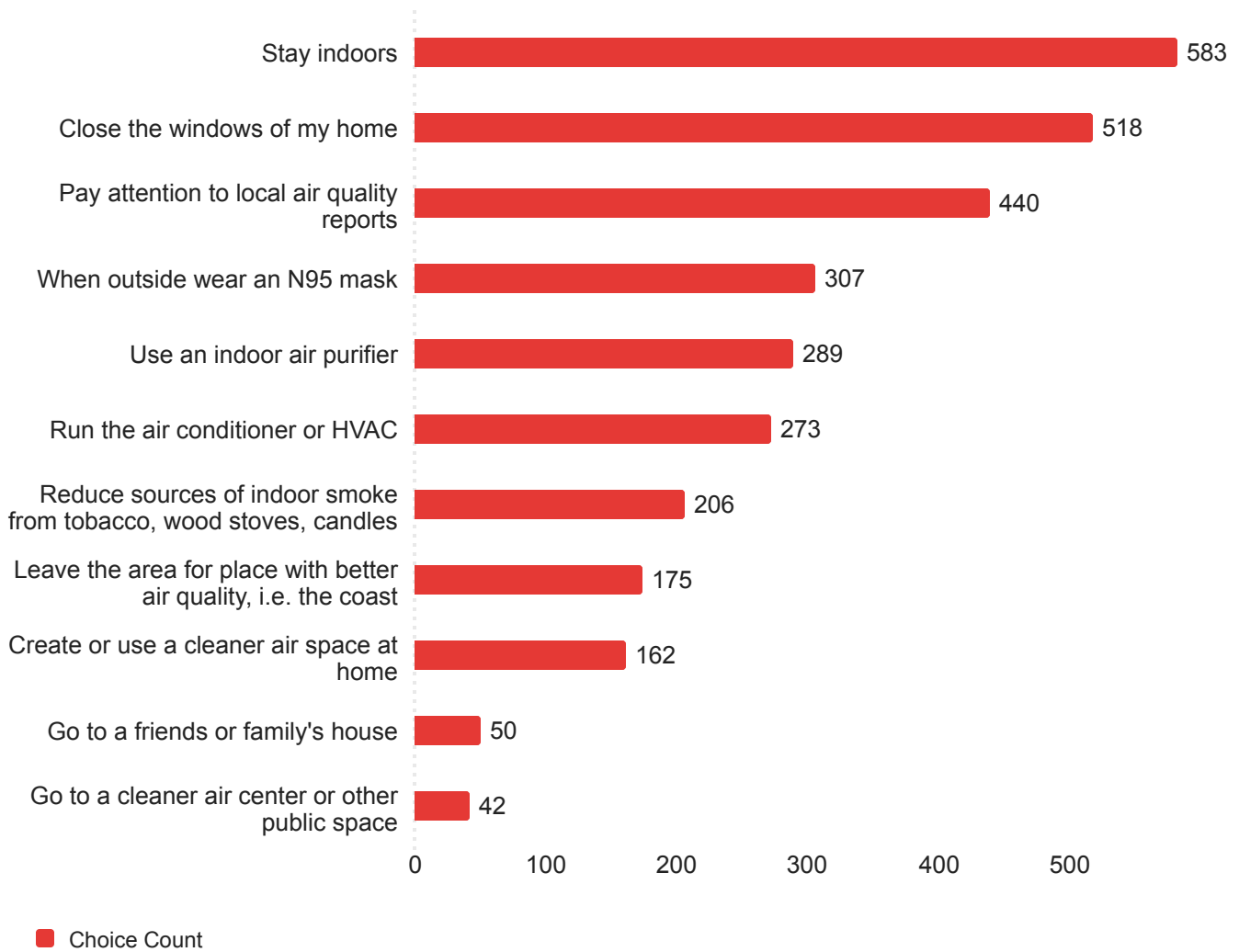
Q5. Do you know about the Air Quality Index (AQI)?



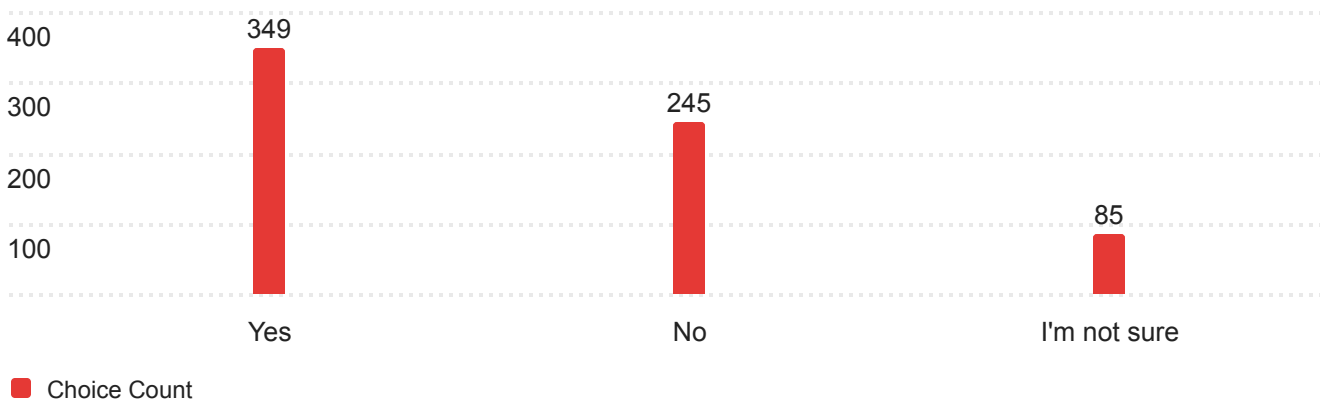
Q6. Please mark how concerned you are about the impact of wildfire smoke on your health during smoke events.



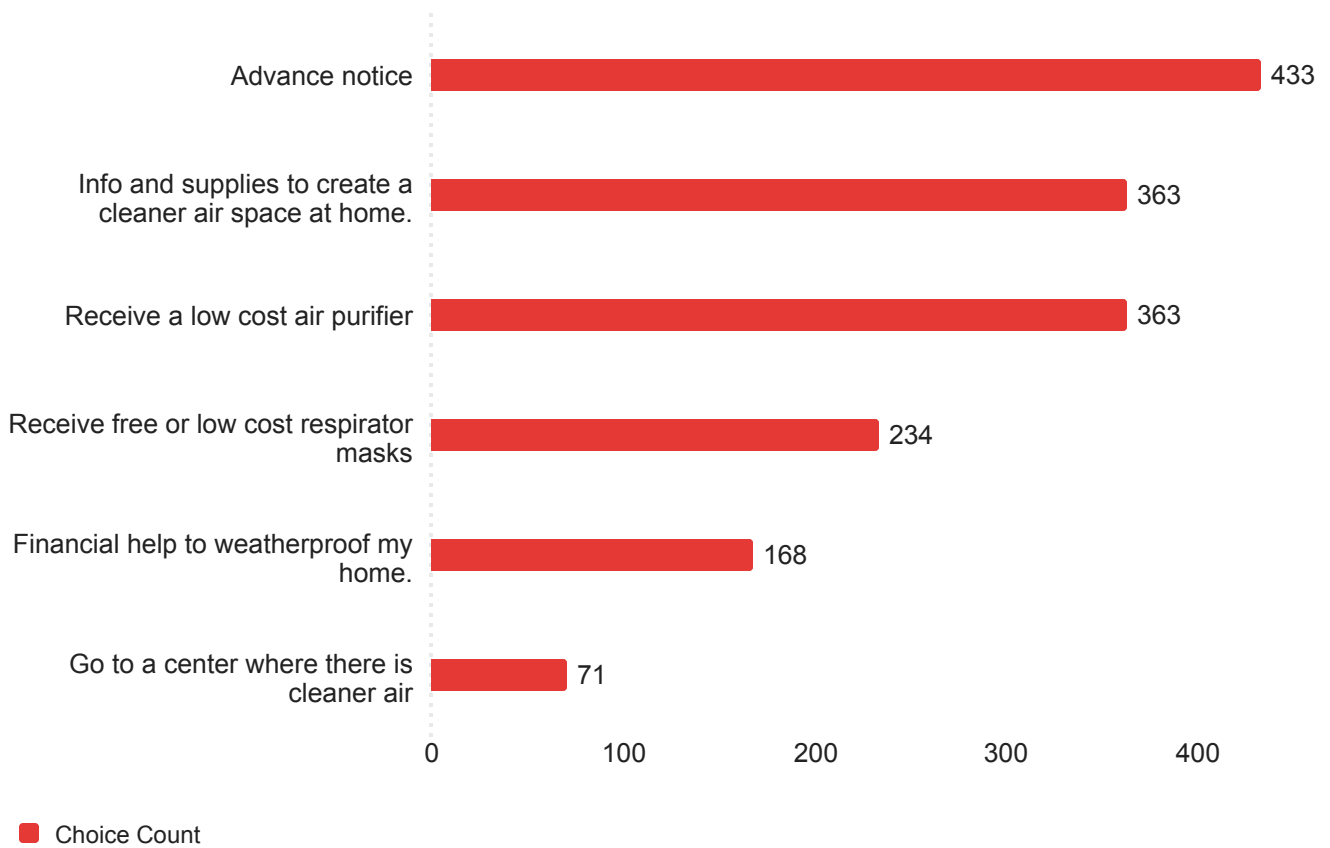
Q7. How do you and the people you live with protect yourselves from a smoke event? Please select all that apply. - Selected Choice



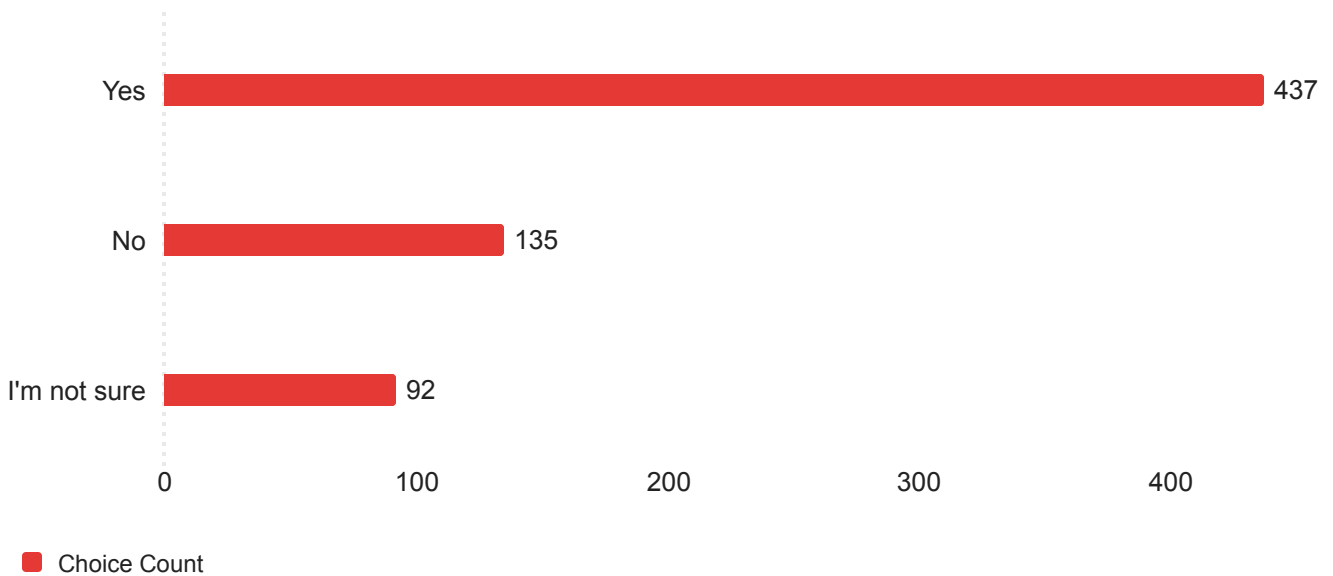
Q8. Do you have a way to clean or purify the air in your home?



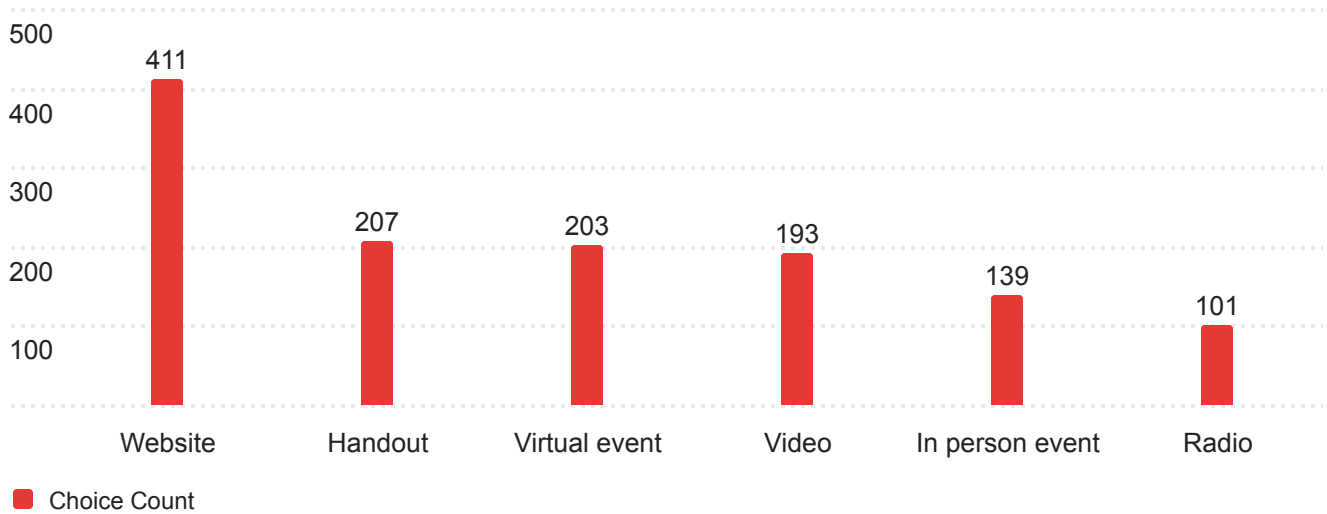
Q9. What would help you to prepare for a smoke event? Please select up to three choices. - Selected Choice



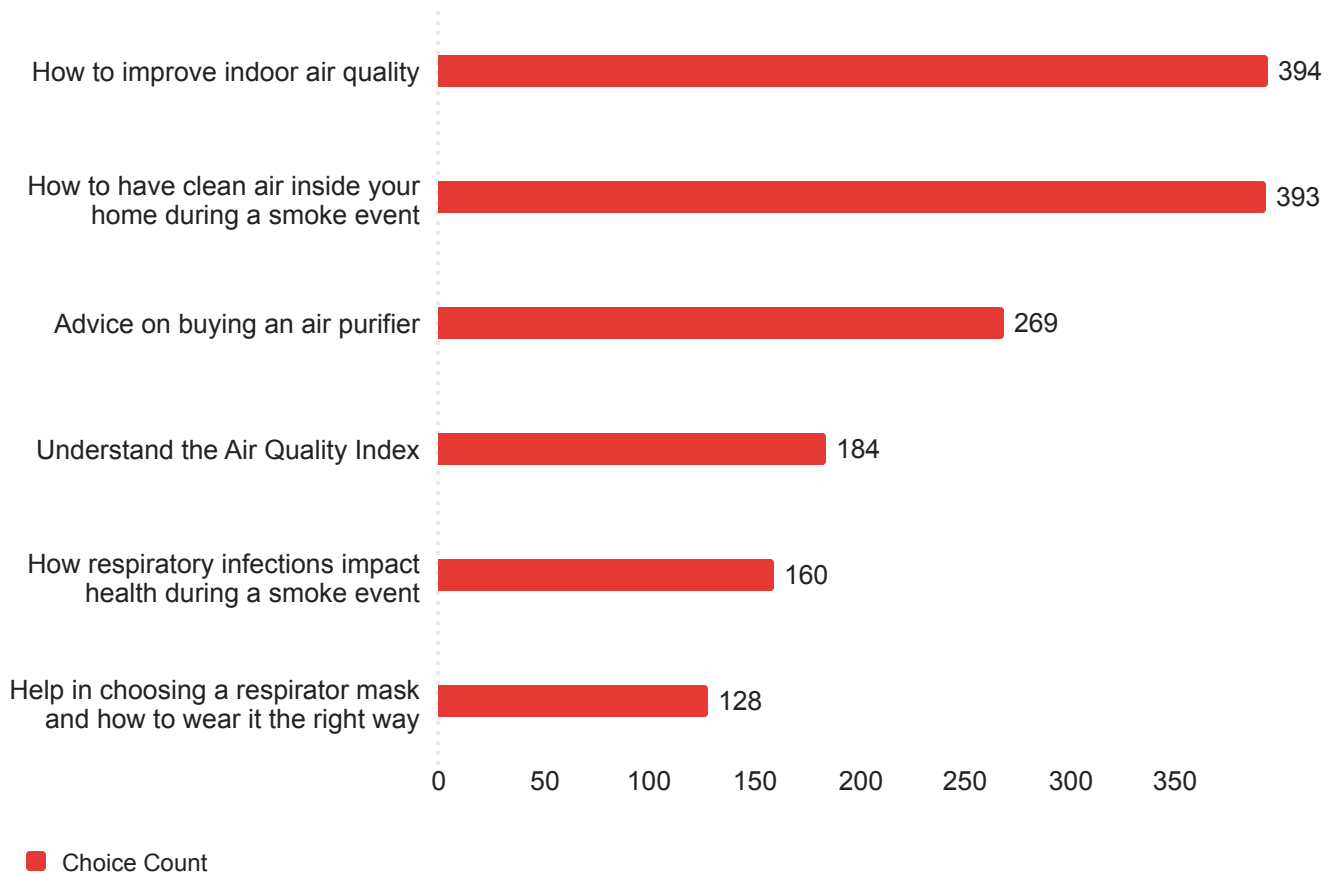
Q10. Would you like more information on ways to protect yourself from smoke?



Q11. How would it be most helpful to get information? Please select up to three choices - Selected Choice



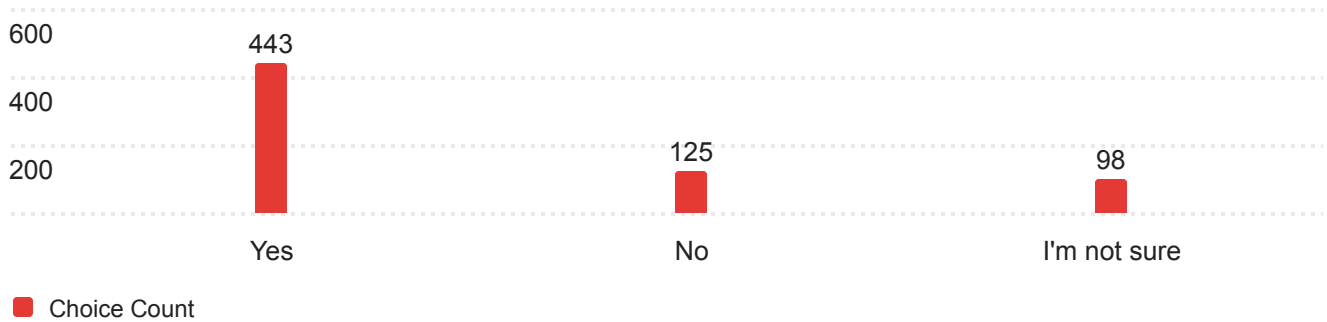
Q12. What topics would you most like to learn about? Please select all that apply. - Selected Choice



Q13. Would you go to a cleaner air center for the public during smoke events?



Q15. Are you signed up for your County’s “Emergency Alert” or Everbridge emergency communication system?

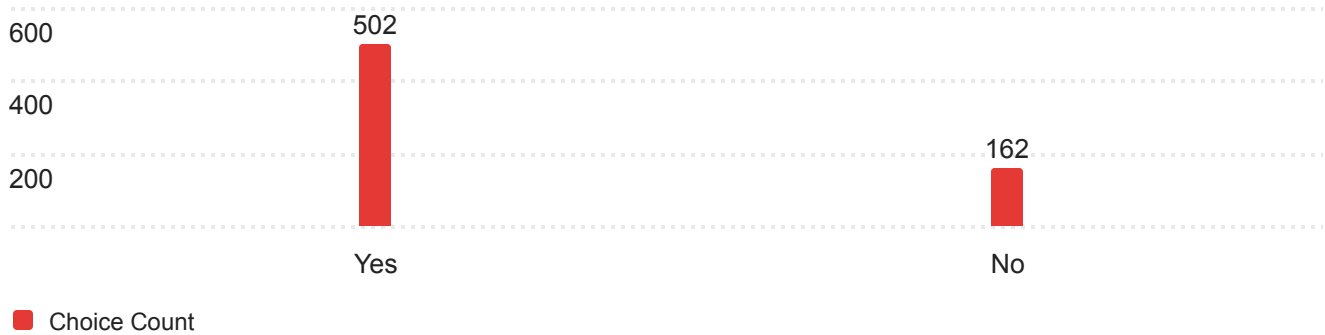


Q16. *County “Emergency Alert” or Everbridge emergency communication systems have been used only to notify in an emergency. A smoke event is not considered an emergency. Would you “opt-in” to get a notice about smoke events if your County offered that option?*



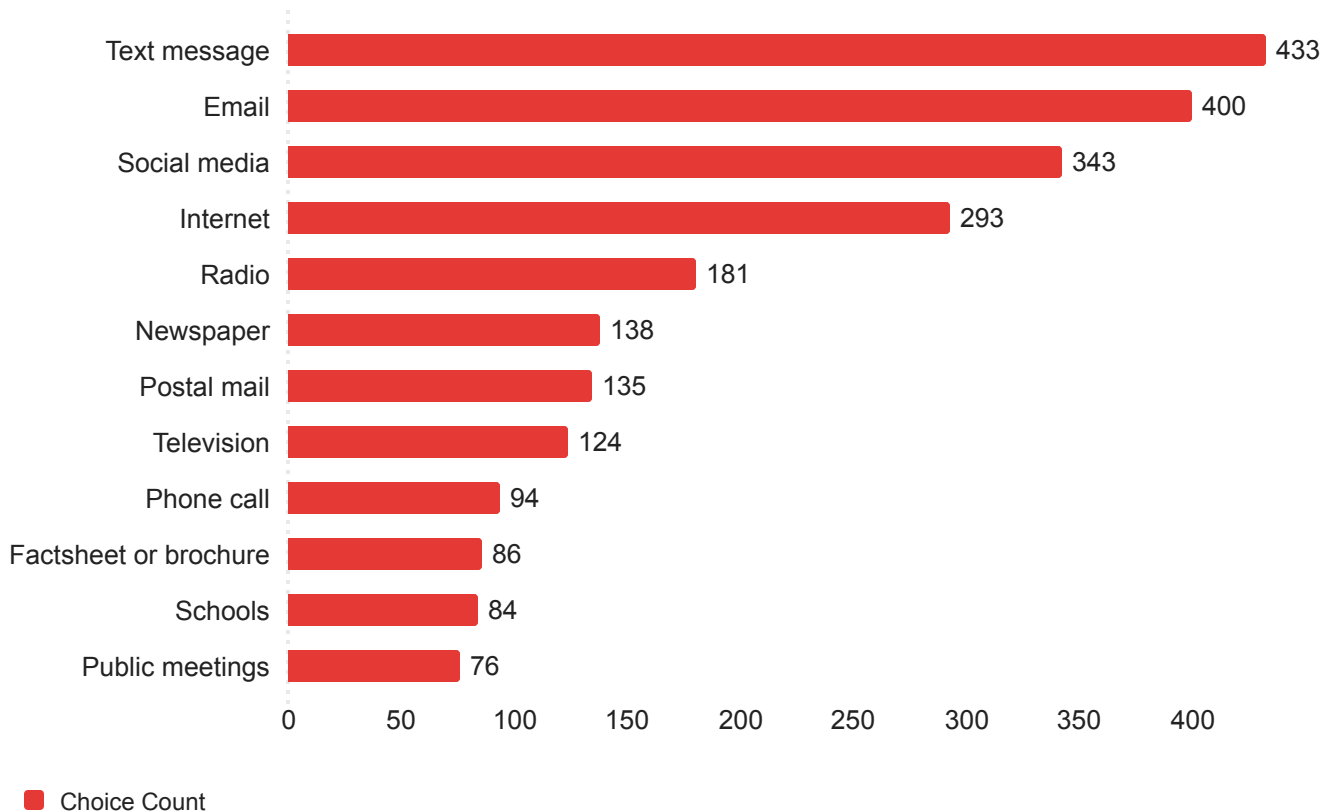
Q17. Would you like to get notices about prescribed burns?

Prescribed burns are when forest managers reduce the amount of fuels in the forest with a controlled fire. This is to lower the chance that catastrophic fires will occur. These burns can only be used outside of fire season during times when the wind direction will carry the smoke away from where people live.

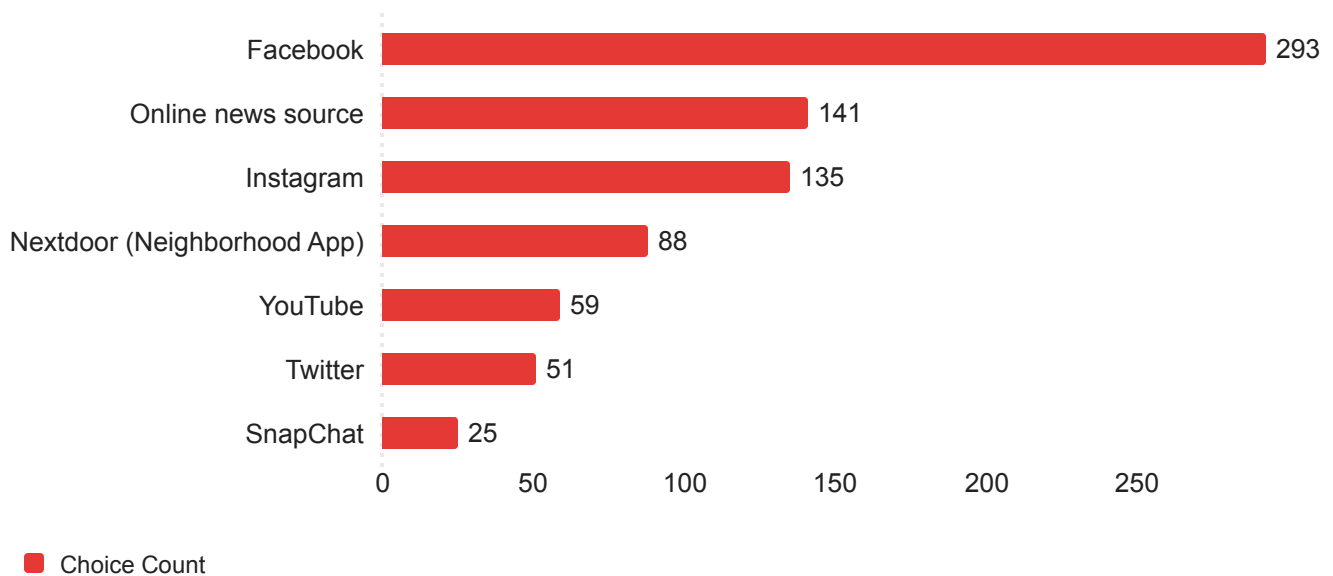


Q18. How do you prefer to get news about community information?

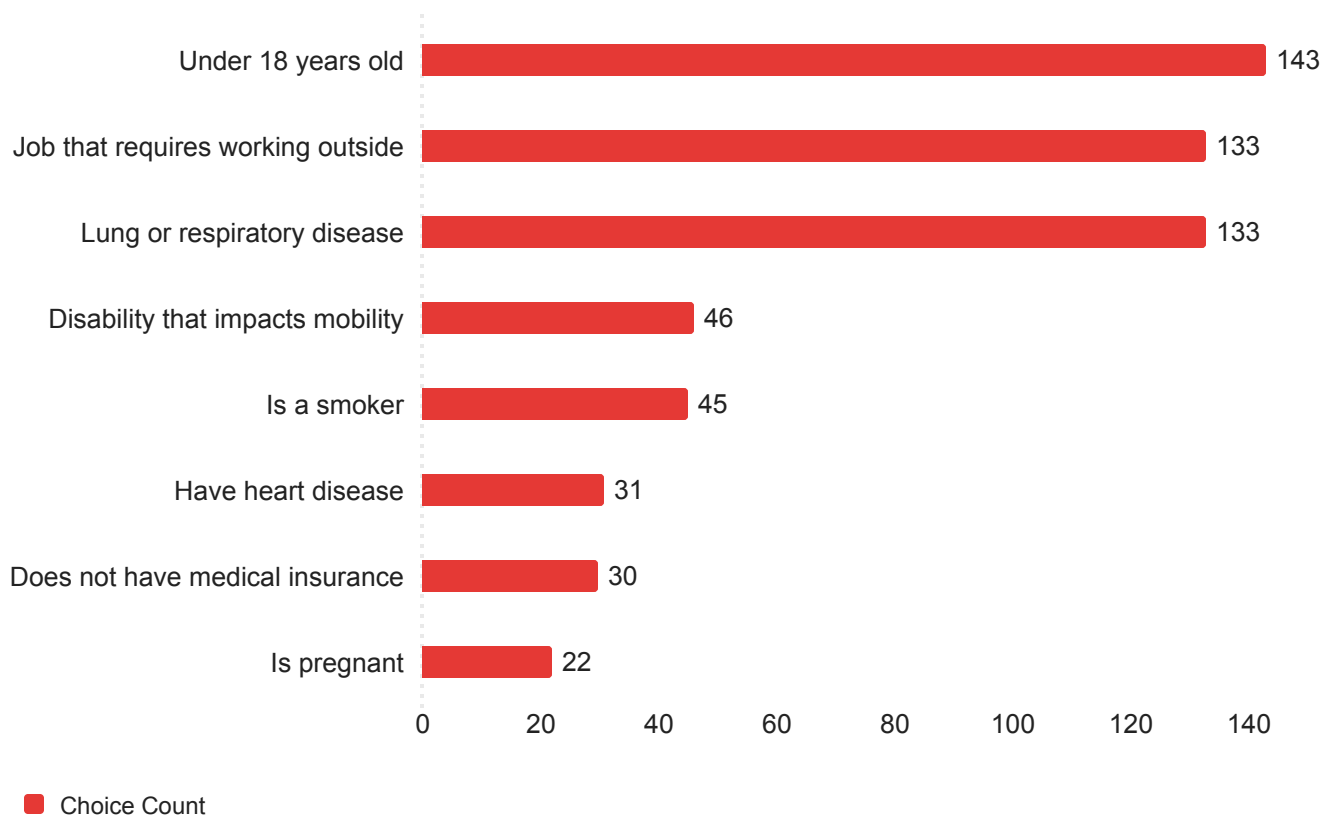
Please select all that apply. - Selected Choice



Q19. Which online platforms do you get your information from? Please select all that apply. - Selected Choice

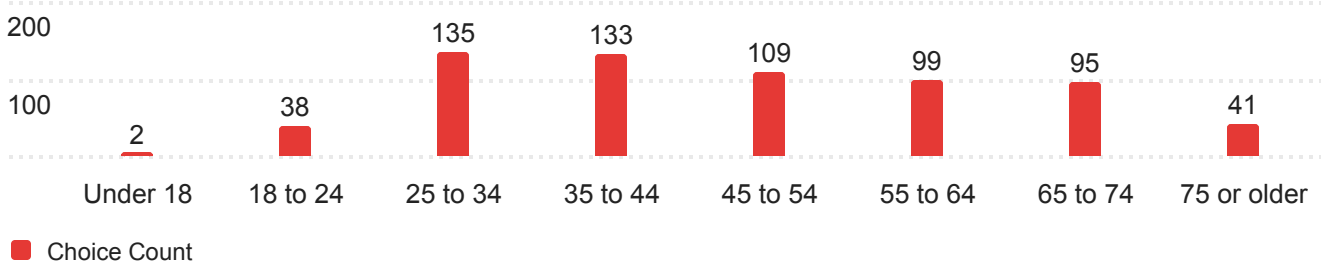


Q22. Do any of these describe you or the people you live with? Please select all that apply.

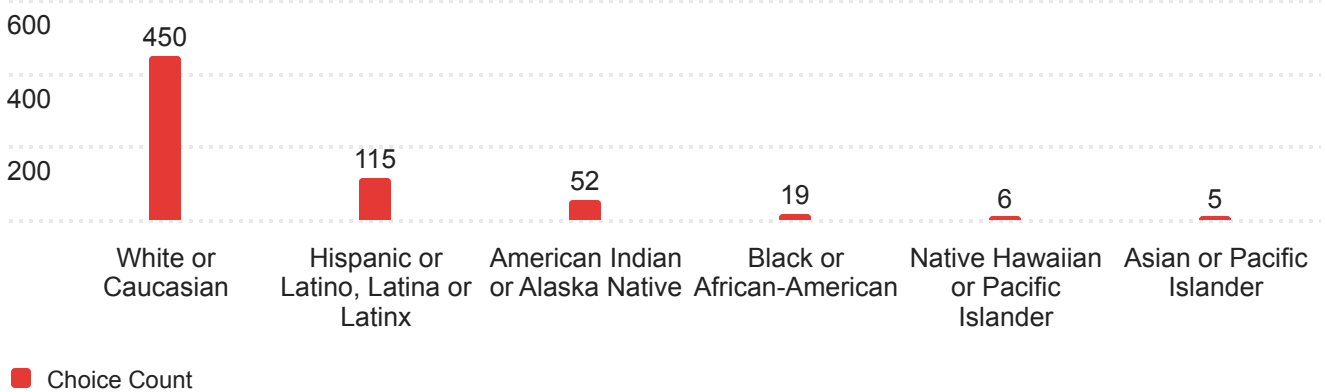


Demographic Questions

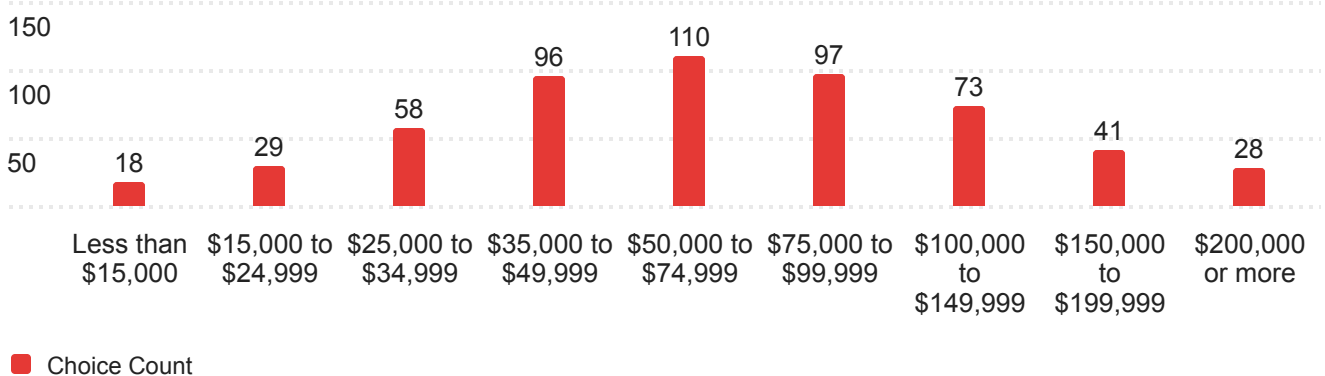
Q21. Which is your age group?



Q24. Which best describes your race or ethnic background? Please select all that apply. - Selected Choice



Q25. Which best describes the combined annual income of all the people you live with, including you?

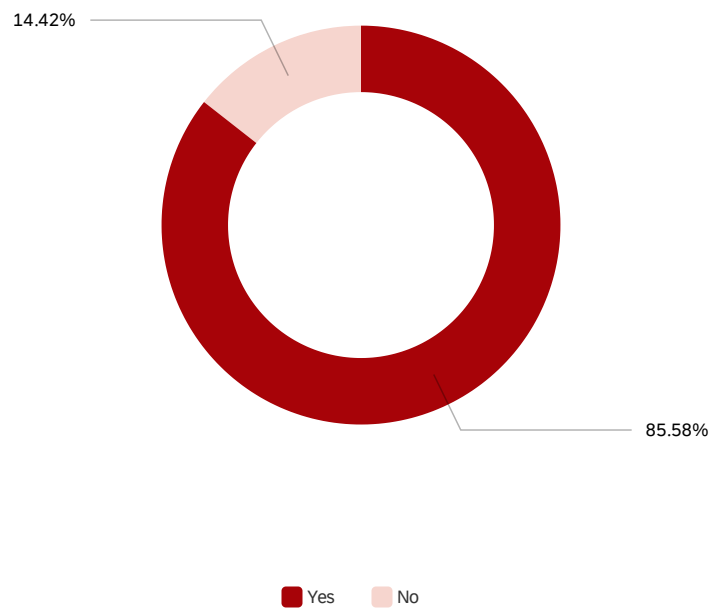
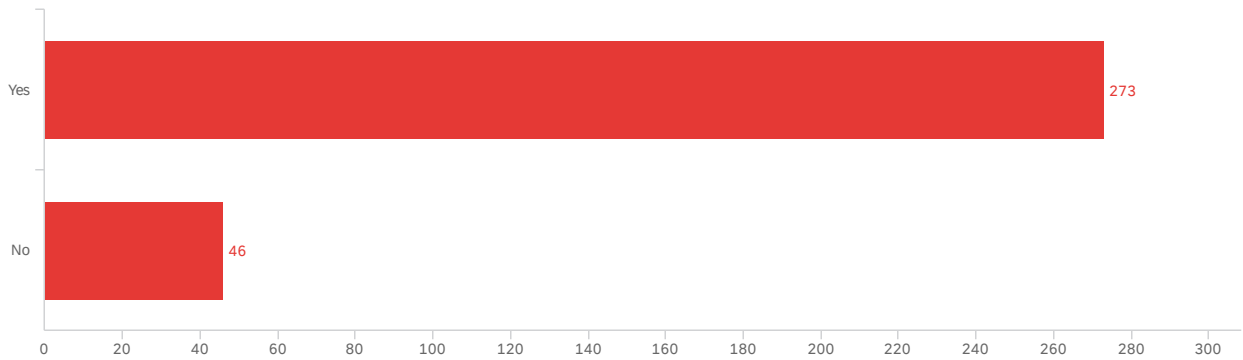


CRP Data for Hood River County

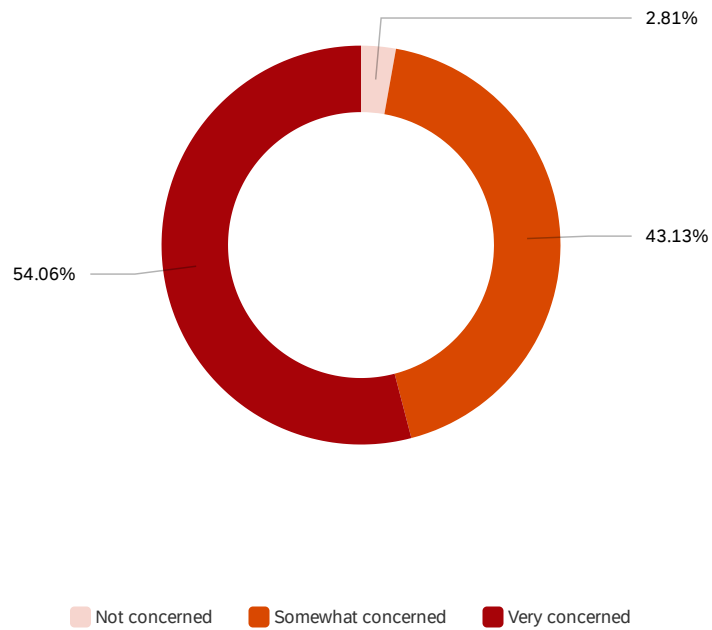
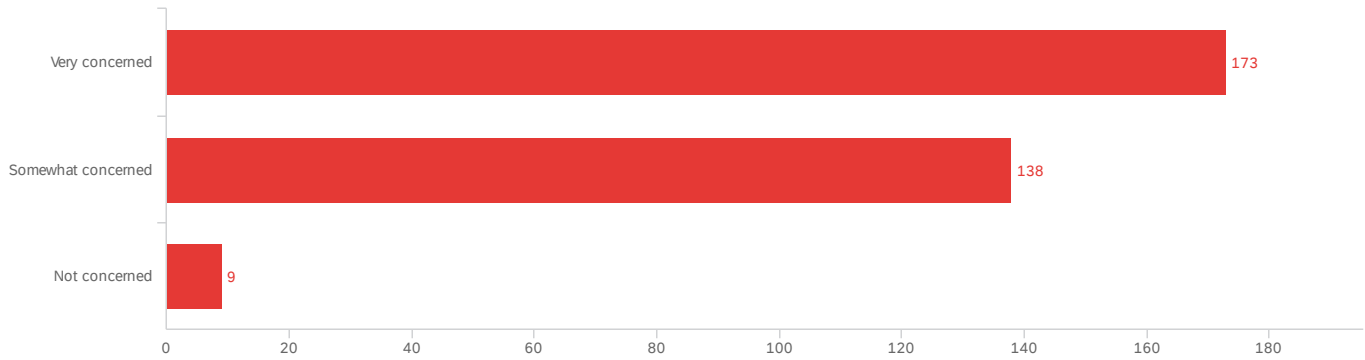
Columbia Gorge Community Response Plan Survey

October 15, 2024 4:23 PM PDT

Q5. Do you know about the Air Quality Index (AQI)?

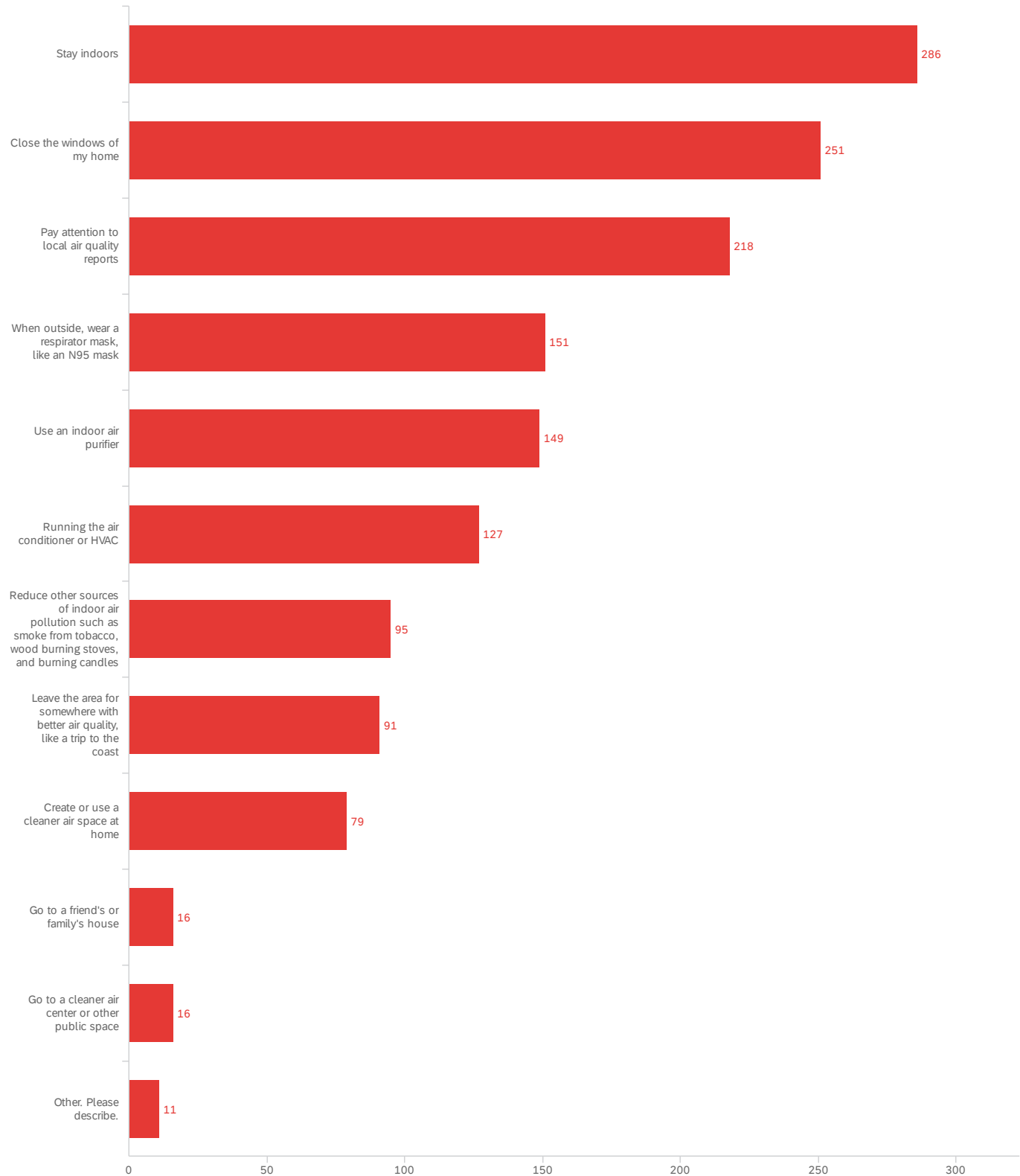


Q6. Please mark how concerned you are about the impact of wildfire smoke on your health during smoke events.



Q7. How do you and the people you live with protect yourselves from a smoke event?

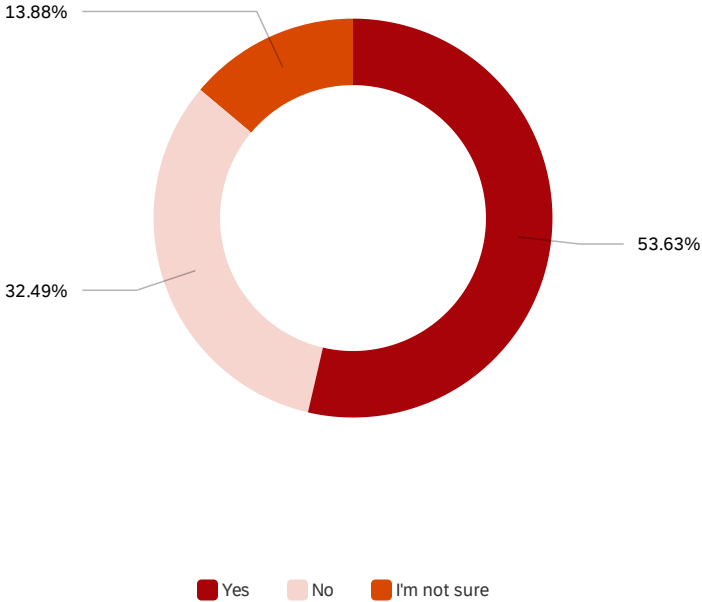
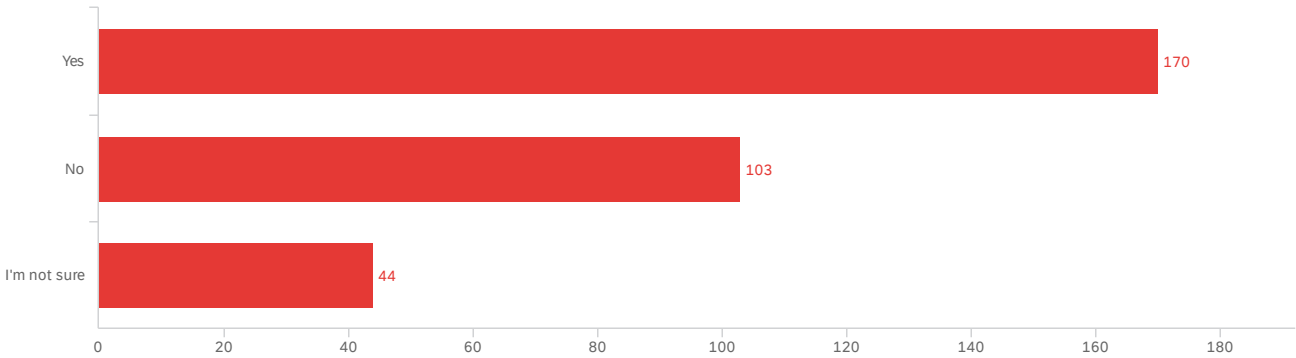
Please select all that apply.



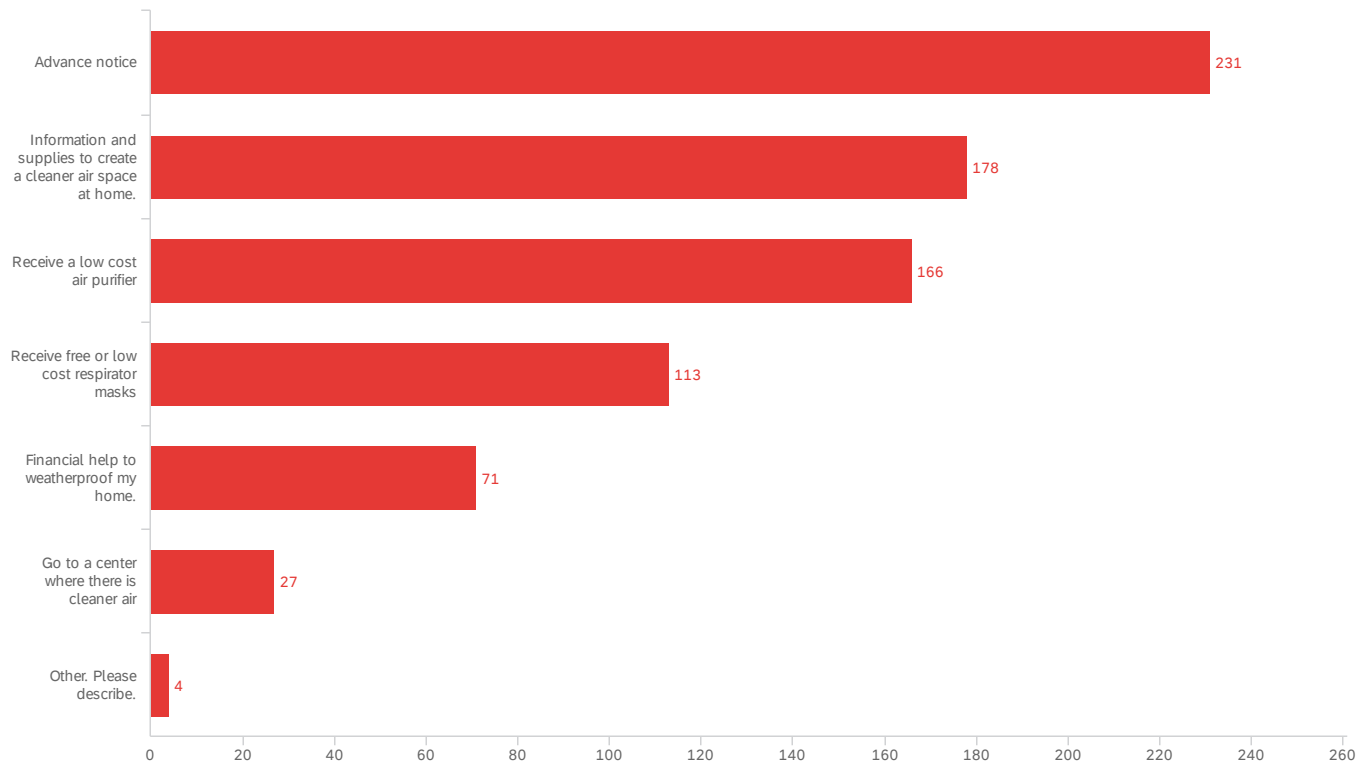
Key Themes and Responses From "Other: Please describe."

- **Limit exercise**
 - "Depending on severity of event, limit outdoor exercising."
 - "Limit cardio vascular exertion"
 - "limit exercise outdoors"
- **Filters**
 - "Change out furnace filters"
 - "Poner filtros en los ventiladores"

Q8. Do you have a way to clean or purify the air in your home?



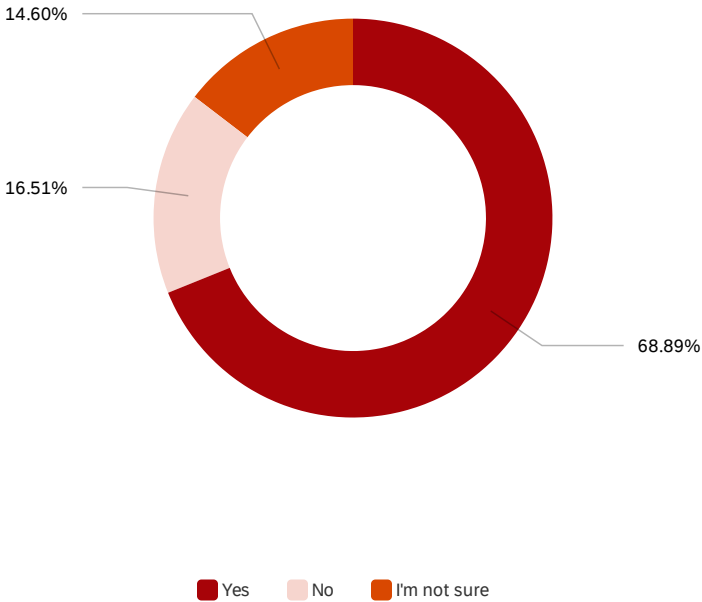
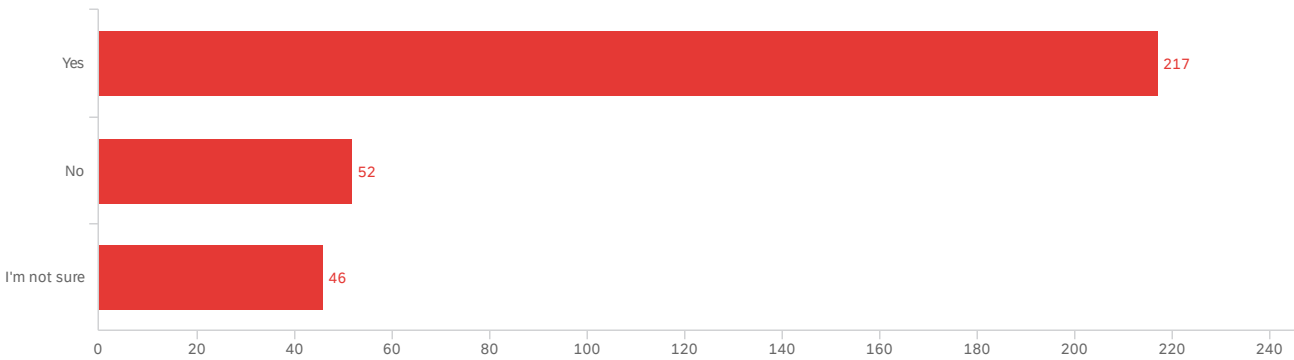
Q9. What would help you to prepare for a smoke event? Please select up to three choices.



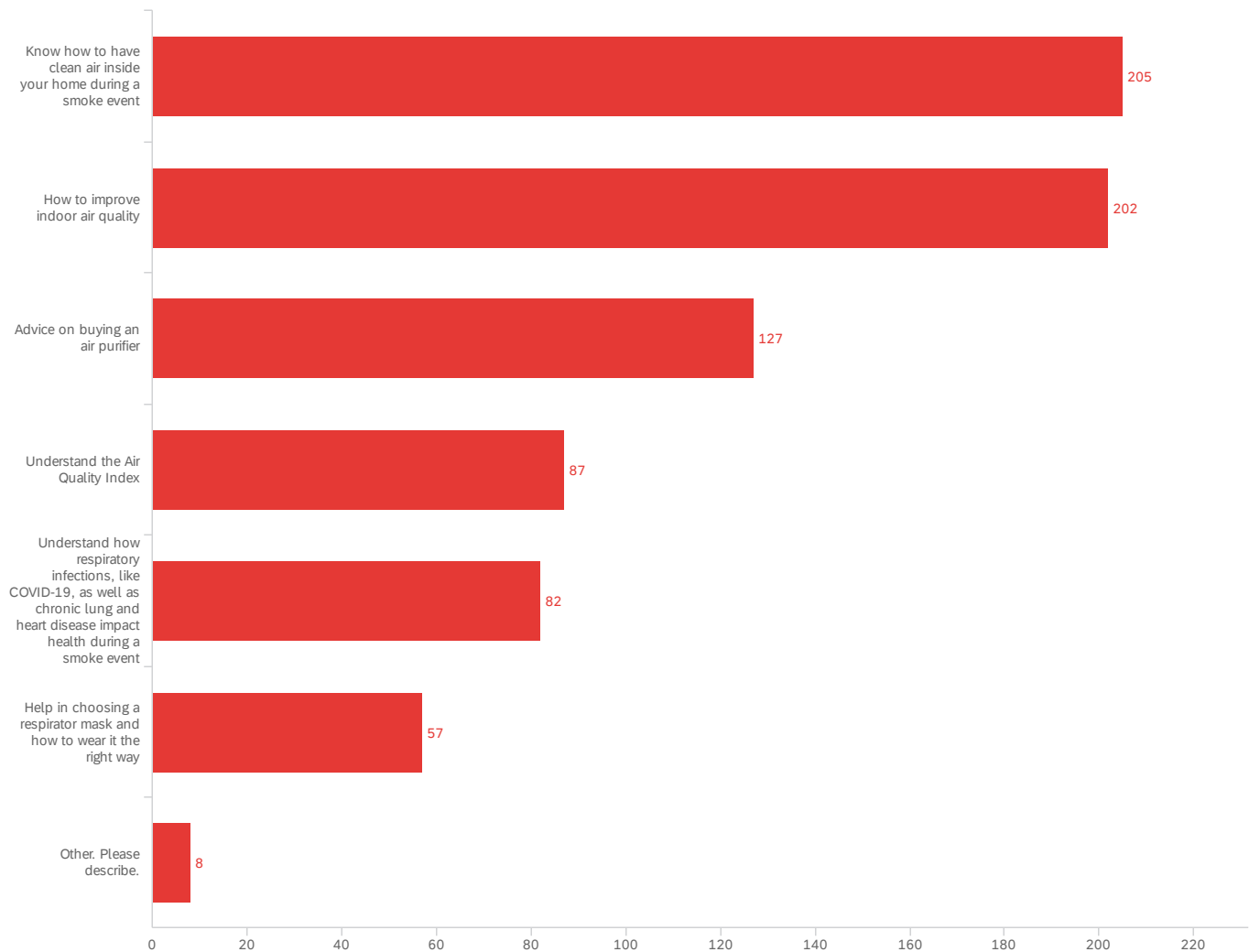
Key Themes and Responses From "Other: Please describe."

- **Home air filtration/retrofitting**
 - "Would be interesting to consult with someone and test our system, procedures. An inspection?"
- **Text notifications**
 - "Text weather updates including wind changes."

Q10. Would you like more information on ways to protect yourself from smoke?



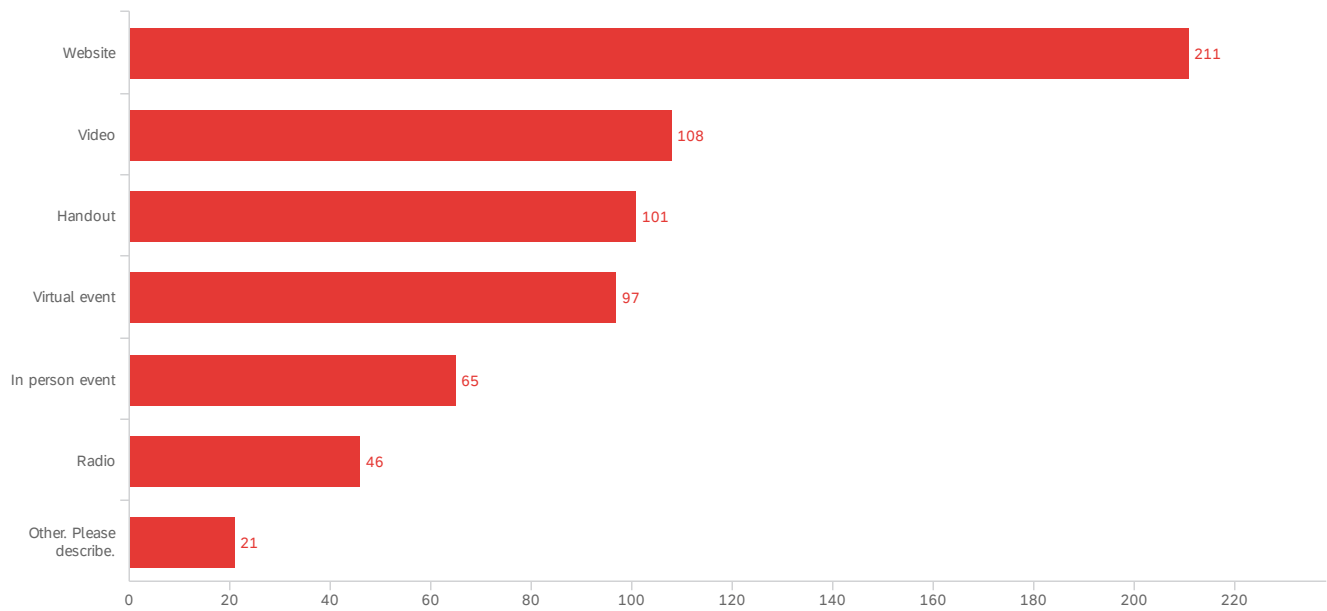
Q12. What topics would you most like to learn about? Please select all that apply.



Key Themes and Responses From "Other: Please describe."

- **Help with home retrofitting/weatherproofing**
 - "house projects to consider to reduce smoke seepage that occurs even when doors/windows are closed"
- **Health effects of smoke**
 - "My husband and I are relatively healthy so we don't tend to have concern during short-term events. Should we be more concerned?"
- **Air purifiers and filters**
 - "information about portable air cleaners to take ot work"
- **Information for outdoor workers**
 - "how I can help ensure workers whose work is outdoors are protected"
- **Protecting pets**
 - "Protecting your pet during a smoke event"

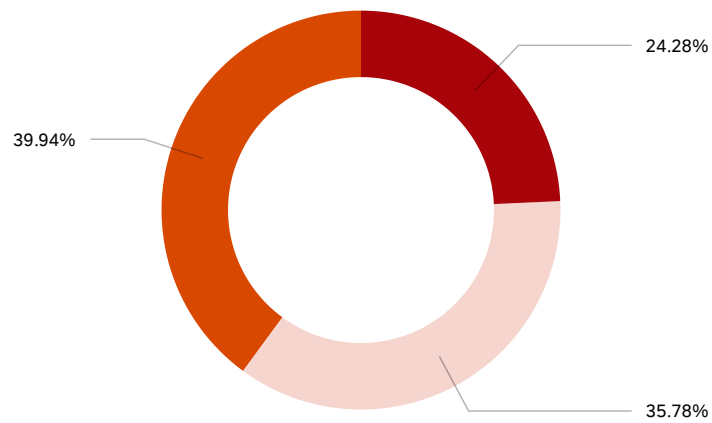
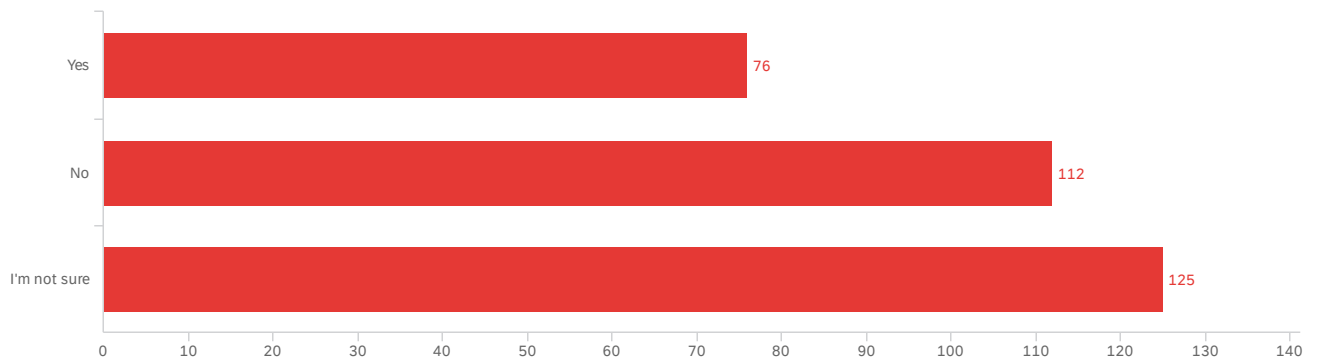
Q11. How would it be most helpful to get information? Please select up to three choices



Key Themes From "Other: Please describe."

- Text
- Email
- Social media
- News/Local paper

Q13. Would you go to a cleaner air center for the public during smoke events?



■ Yes ■ No ■ I'm not sure

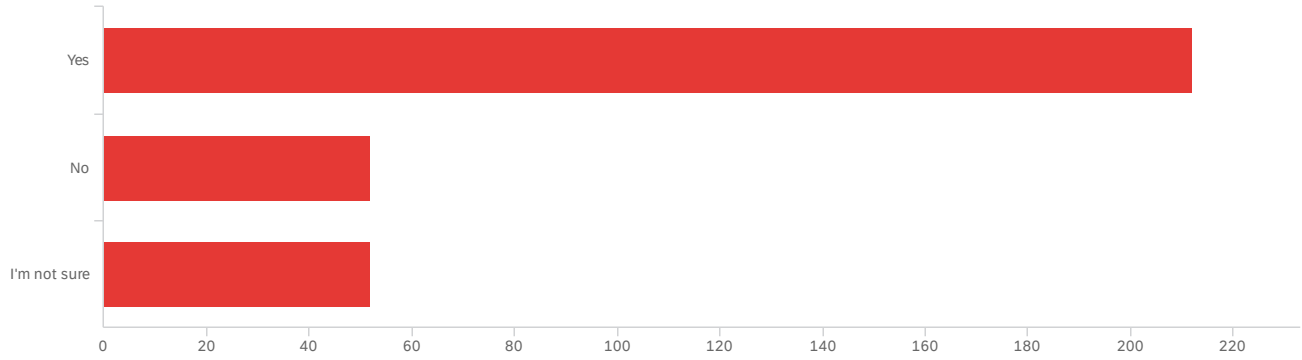
Q14. Please use the space below to tell us why you would not use a cleaner air center.

For instance, "I have an air purifier at home."

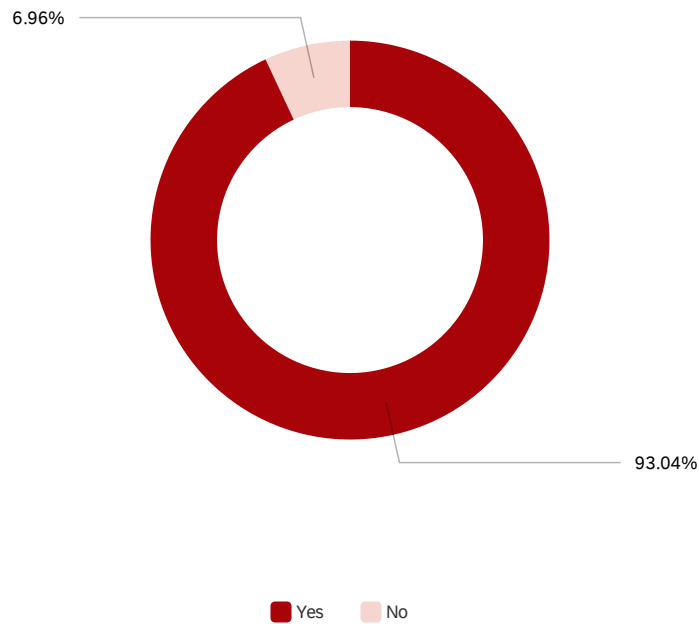
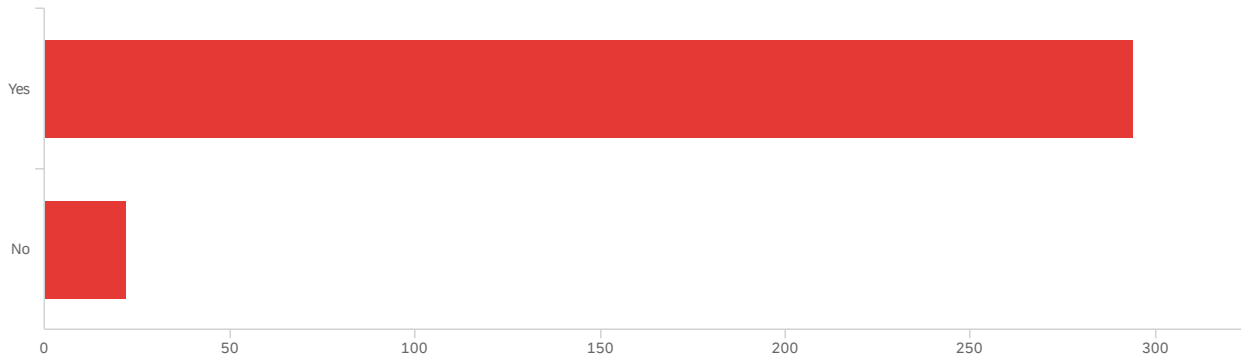
Key Themes and Responses

- **Creating clean air at home**
 - "Air purifier at home. Would travel away for longer stretches."
 - "We have an air purifier as well as a box fan with a filter. We also have A/C. We'd stay home So others who are in need in the community could use the cleaner air center"
- **Safety and comfort**
 - "I would like to be in the comfort of my own home, but would be a great idea for people who don't have a home or stay in their home."
 - "I have an air purifier at home and am aware of other measures I can take - I am severely immunocompromised ... and do not want to be in a crowded environment with a lot of people."
 - "I am not interested in hanging out with strangers in a big room."
 - "Elders in home are not comfortable in leaving home unless absolutely necessary."
- **Children and family**
 - "We have young kids. Trying to keep them happy in a new space would be too much work for any extended period of time (more than an hour) unless the space was specifically designed for kids and had a lot of parental support."
 - "We have kids that would make it hard to entertain, feed, rest, and stay safe."
- **Pets and livestock**
 - "I run a farm, can I bring my livestock? If not, then who's caring for them while I sit in a "clean air center". Who's repairing fences and housing? Who's dealing with their food and water? How much is that costing?"
 - "Animals to care for at home"
 - "Bringing the dog along might be an issue."
- **Work**
 - "I work daily and need to have access to my home. I need to be able to conserve fuel, by not traveling."
- **Leaving the area**
 - "If we are prepared at home we shouldn't need to. We have the means to leave the region for cleaner air if need be, rather than "live" in a public space with others. Maybe it's the pandemic that created this perspective..."

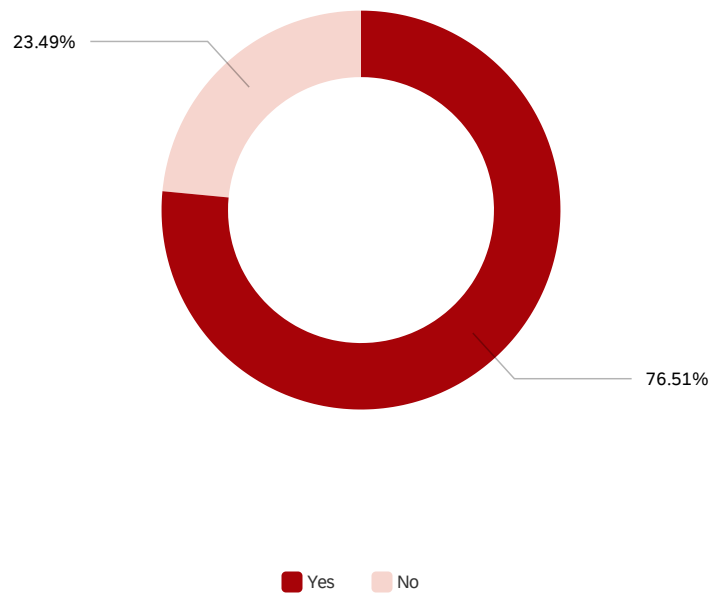
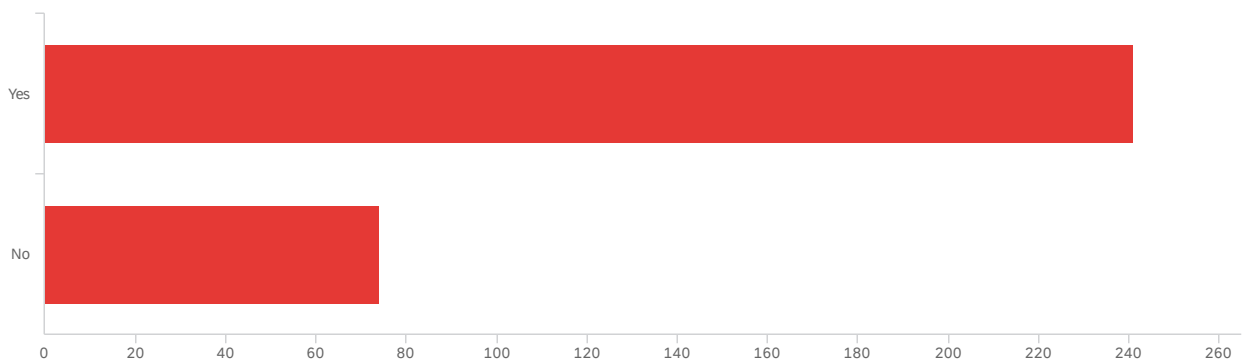
Q15. Are you signed up for your County's "Emergency Alert" or Everbridge emergency communication system?



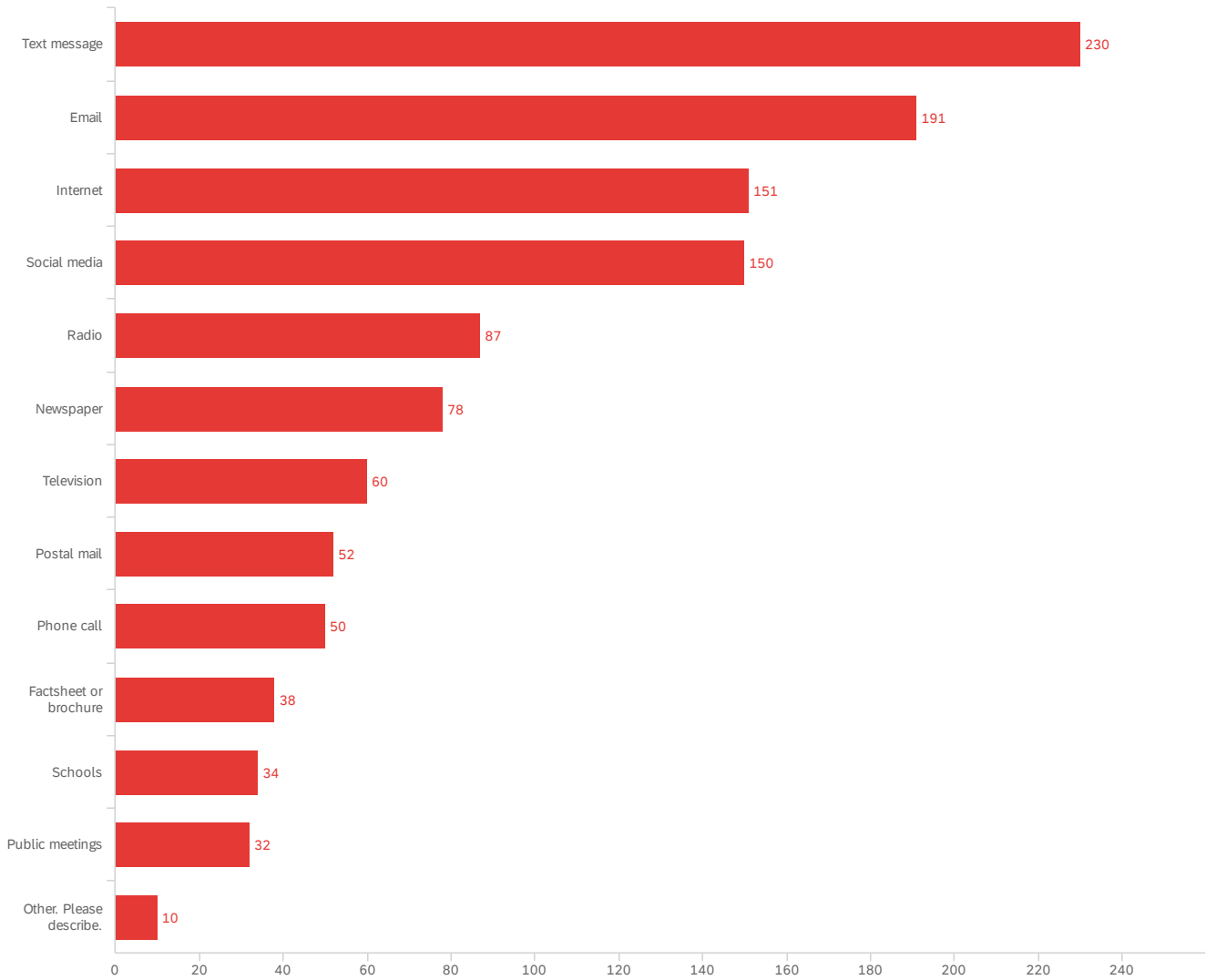
Q16. County “Emergency Alert” or Everbridge emergency communication systems have been used only to notify in an emergency. A smoke event is not considered an emergency. Would you “opt-in” to get a notice about smoke events if your County offered that option?



Q17. Would you like to get notices about prescribed burns? Prescribed burns are when forest managers reduce the amount of fuels in the forest with a controlled fire. This is to lower the chance that catastrophic fires will occur. These burns can only be used outside of fire season during times when the wind direction will carry the smoke away from where people live.



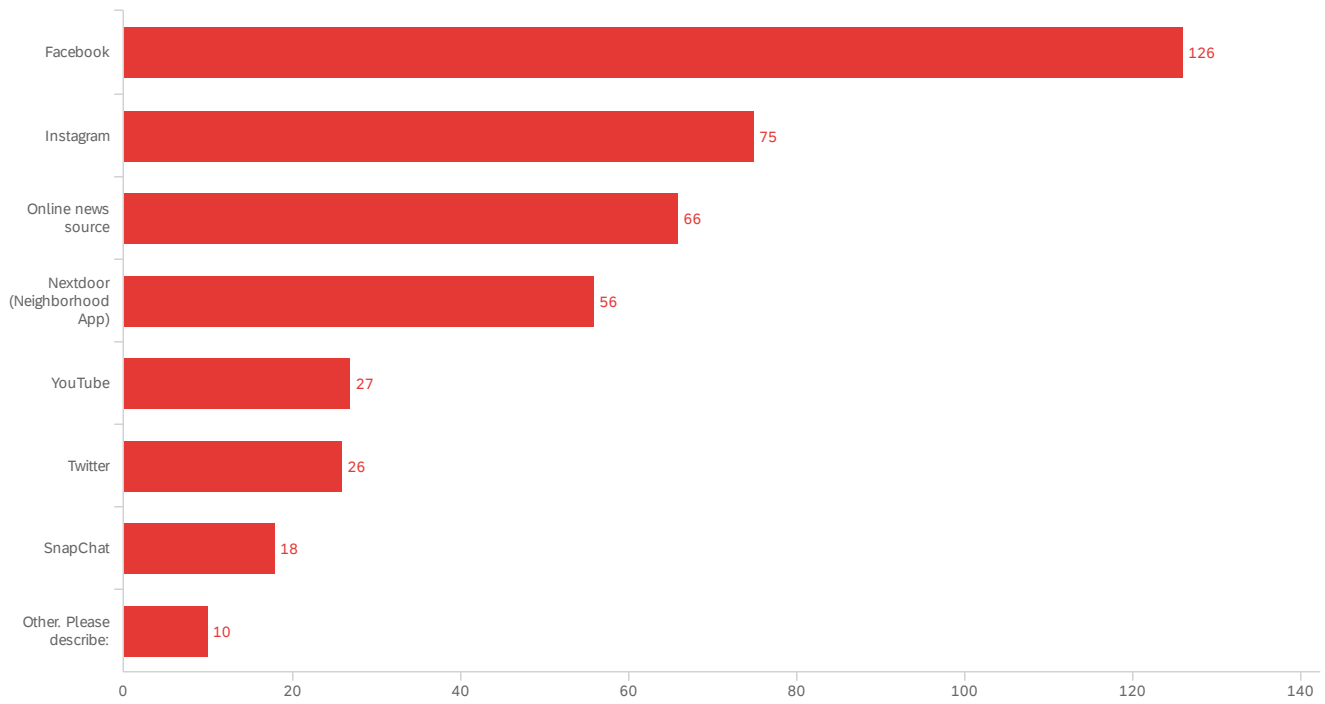
Q18. How do you prefer to get news about community information? Please select all that apply.



Key Themes and Responses From "Other: Please describe."

- **HoodRiverWeather.info**
 - Mentioned in five out of ten text entries
- **Trusted local groups**
 - "city hall"
 - "Fire station website"
 - "Community Health Workers"
- **Mail**
- **YouTube**

Q19. Which online platforms do you get your information from? Please select all that apply.



Key Themes and Responses From "Other: Please describe."

- **HoodRiverWeather.info**
 - Mentioned in four out of ten text entries
- **Email**
 - "email listserves like the Columbia Gorge Action Network, Waterhshed Group email list, Hood River Forest collab email list, city/county emails, Temira's weather email."
- **The Next Door, Inc.**
 - "Podría ser también por Next Door de aquí de g Hood River"
- **Other social media channels**
 - "reddit"
 - "TikTok"

Q20. What else do you want to tell us? Please use the space below to tell us anything else you think we should know about how we can better inform you about the impacts of smoke from wildfires and prescribed fires.

Key Themes and Responses

- **Multi-channel communication**
 - "If announcements go out for all of us to heed I know very old neighbors who only listen to public radio channel and don't have access to computers so please keep them in mind."
 - "Put all that info everywhere just in case someone doesn't have one but the other"
 - "I think a social media page dedicated to this subject would be a valuable tool. People could choose whether or not they would like to be a member and they could scroll through all the information and decide for themselves a course of action."
- **Information**
 - "create awareness to air quality index to everyone around us to avoid chronic respiratory diseases"
 - "How do controlled fires affect air quality?"
 - "Clear concise information which is timely. Advance/early notice of wildfire/smoke events and resource availability to help deal with it."
 - "Know what are the signs you need to watch for in case you become affected by the smoke and what to do"
- **Burn bans**
 - "It is incredible how many people burn their trash and yard debris. This is also a cause of smoke pollution. This should be more closely monitored and perhaps banned."
 - "Private burn piles regularly impact local air quality on days when there isn't wildfire smoke, dramatically increasing the days we are impacted by smoke. Better management of private burning could help to limit the days we are impacted by smoke."
- **Affordable, accessible, or free supplies for clean indoor air**
 - "Providing notice when possible of large prescribed burns or when air quality will be diminished and providing emergency services with free supplies to hand out to concerned public."
 - "We have a propane burner- so much is in the news about how unsafe it is to use with close windows. We take all of the precautions, but access to low or no cost induction burners for smoke events would be really wonderful"
 - "...Besides changing filters regularly during an air quality event, is there something we can DIY at low cost? Where do we go to find qualitative data about what we currently have vs other air purifying options?"
- **Workplace safety and outdoor workers**
 - "I am very concerned that the Legislature dedicate funds to pay workers who work outdoors to stay indoors during extreme smoke events. These essential workers are not currently protected and often choose to work in order to feed and house their families. They deserve to be protected the same as all workers who work indoors."
 - "...I work predominantly outside and would love to see assertive communications around unhealthy air through the workplace."
- **Protecting children**
 - "It would be great to lessen the impact on students in school. If the schools had air purifiers and instruction could continue during smoky conditions that would be ideal, realizing of course that to and from transportation in smoky conditions are also a problem."
 - "I would be interested to know if babies need more measures"
 - "An indoor clean air space with activities or space for children to play would be a nice local resource. We have felt so "cooped up" during past bad air quality events."
- **Pets and livestock**
 - "...people can be reluctant to evacuate because of concerns over their pets not being allowed in evacuation centers. Same issue with clean air centers - what about pets? What about covid spread for older/immune compromised people? Also, the Gorge is essentially a rural area. Even for a smoke event, people will want to know about any ways they might protect their larger animals."

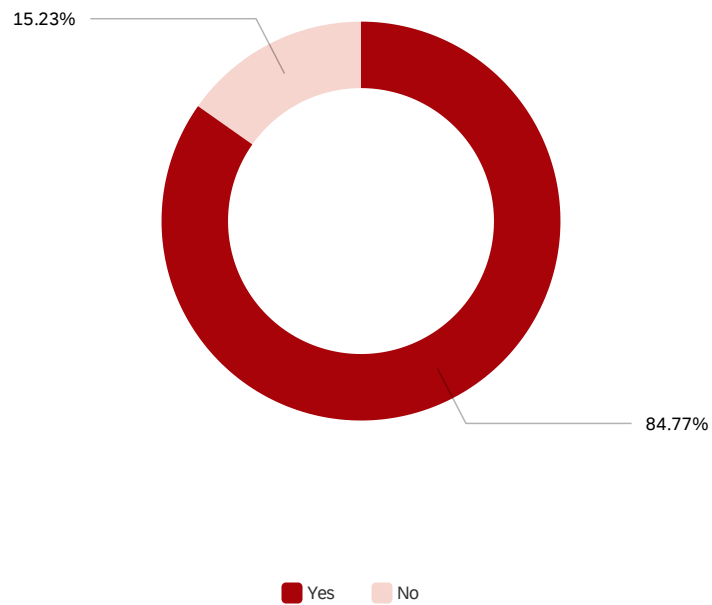
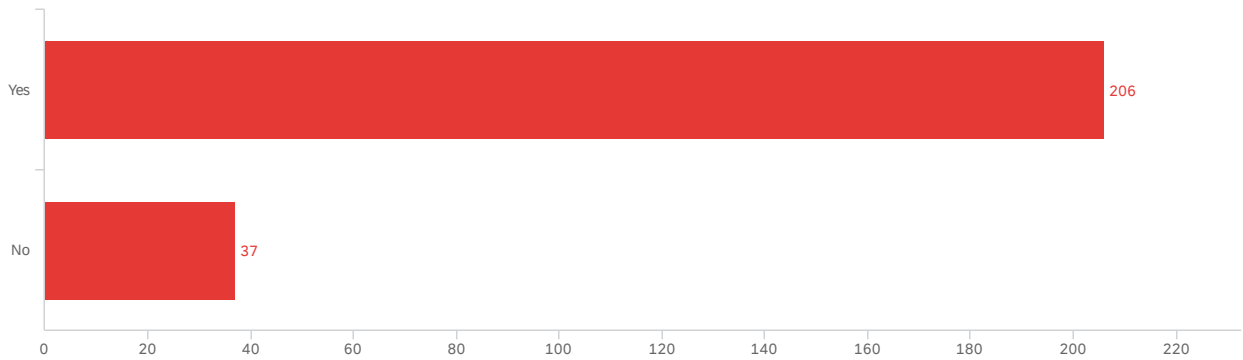
End of Report

CRP Data for Wasco County

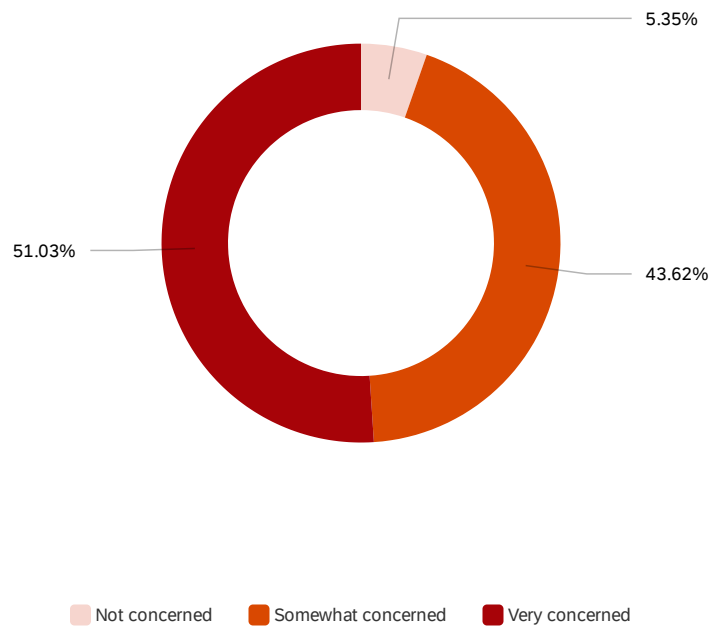
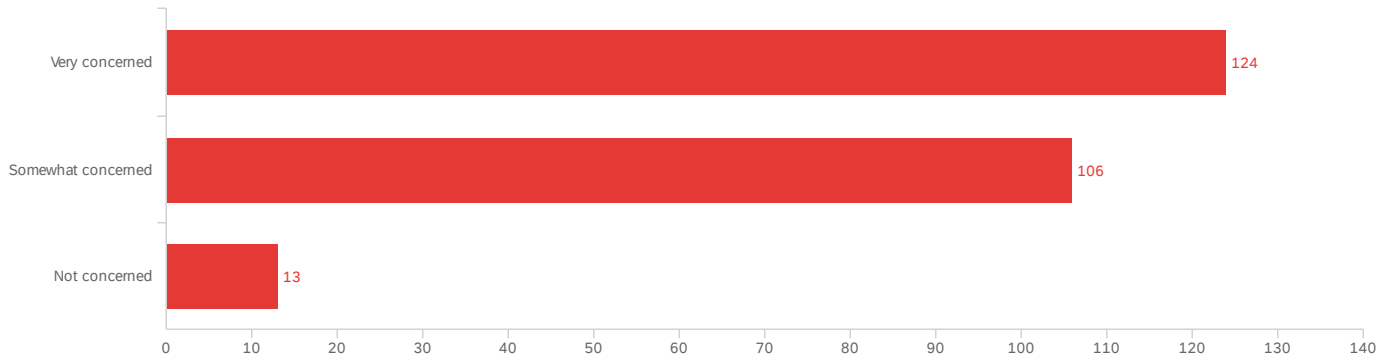
Columbia Gorge Community Response Plan Survey

October 15, 2024 4:20 PM PDT

Q5. Do you know about the Air Quality Index (AQI)?

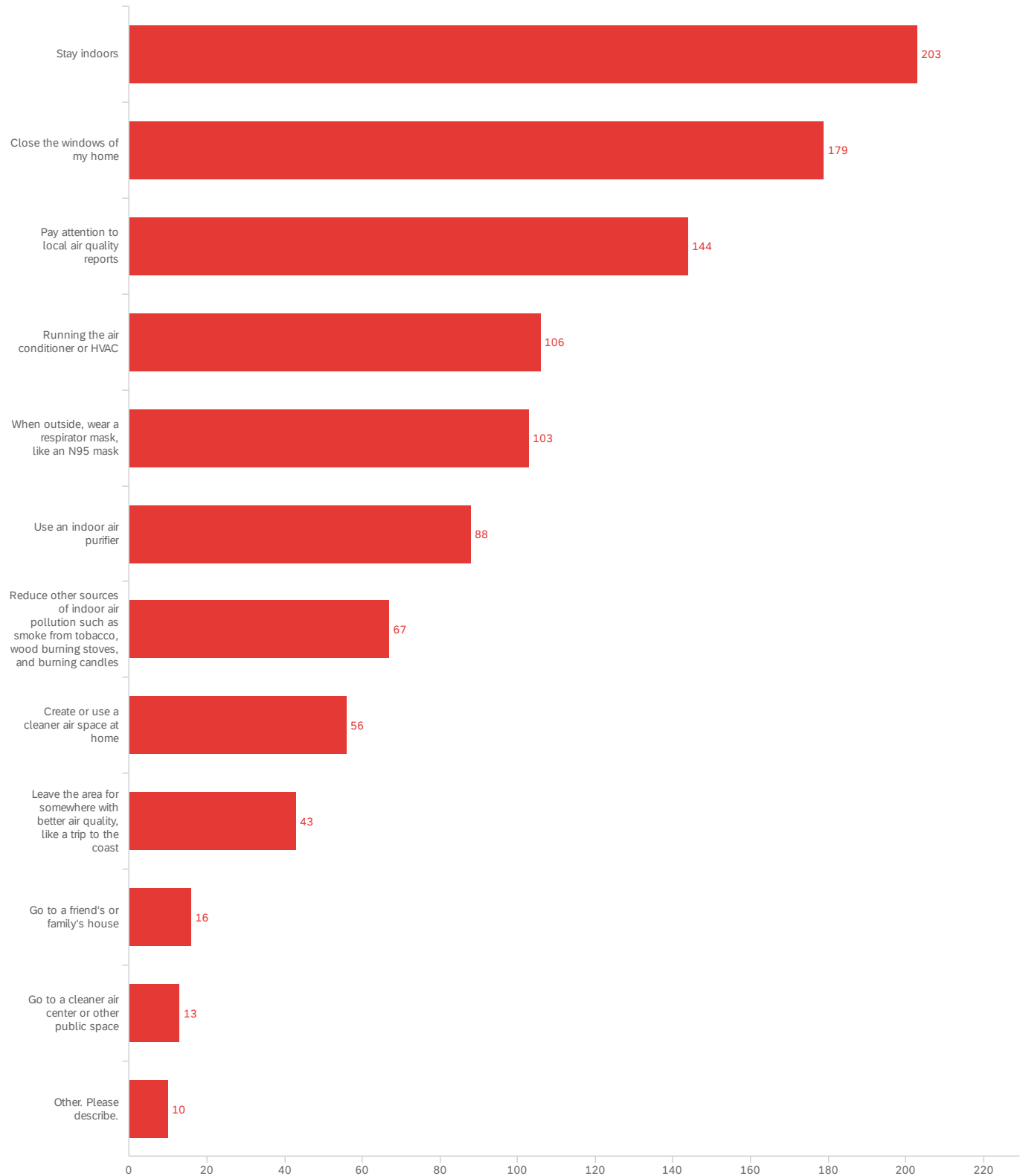


Q6. Please mark how concerned you are about the impact of wildfire smoke on your health during smoke events.



Q7. How do you and the people you live with protect yourselves from a smoke event?

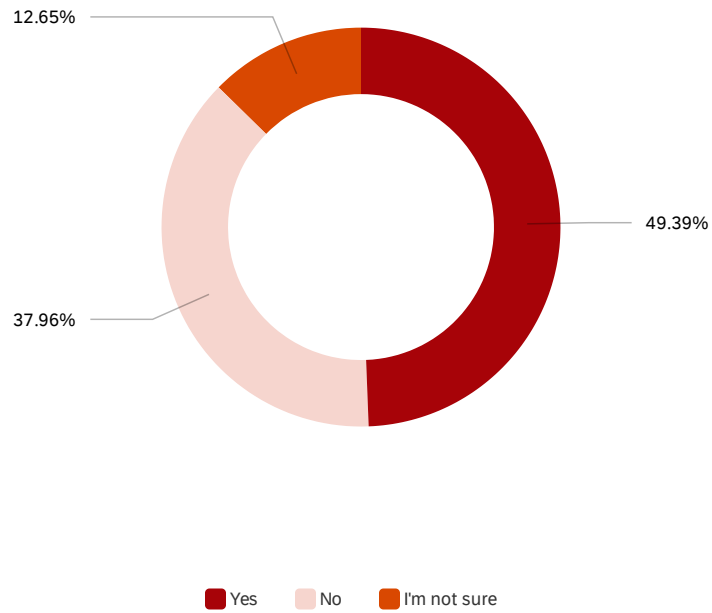
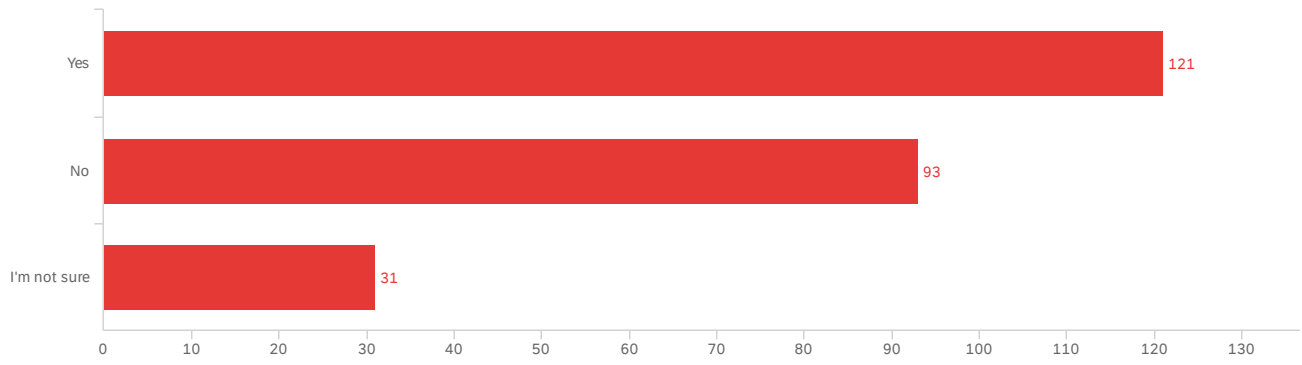
Please select all that apply.



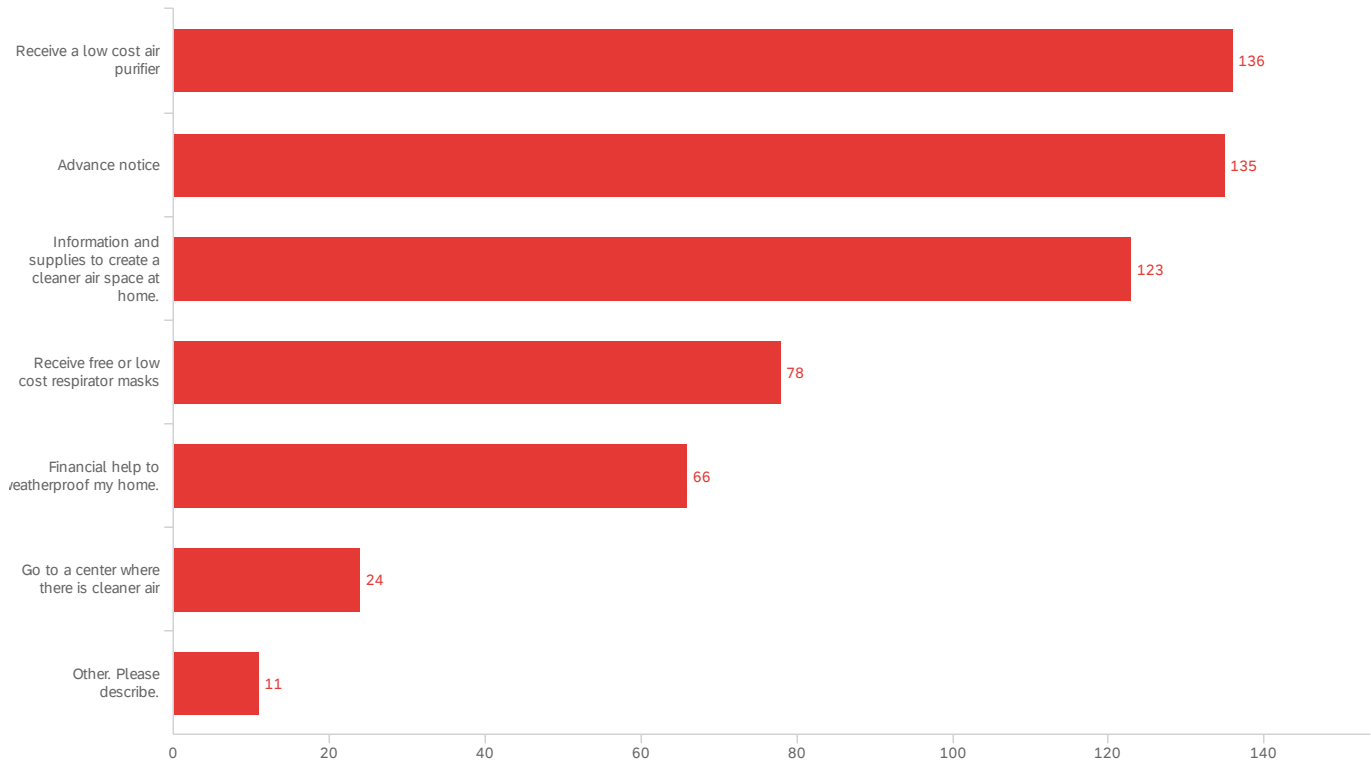
Key Themes and Responses From "Other: please describe."

- **Protections for smoke-sensitive populations**
 - "It would depend on how bad/near a wildfire is to our home as to whether we would leave or stay. We are elderly therefore we would need to take appropriate measures earlier rather than later."
 - "Both of my kids have asthma, so we keep up on treatment as needed."
- **Staying indoors**
 - "Avoid exercising outdoors"
 - "Try to stay indoors .last year my work would not close down and the building was pretty smokey maybe getting business on board to not make people work when the air is not good to be out in it"
- **Air filters**
 - "Buy more expensive air filters"
 - "Put filters on our boxed fans"
- **Sealing the home from outdoor air**
 - "seal windows with plastic used for insulating"

Q8. Do you have a way to clean or purify the air in your home?



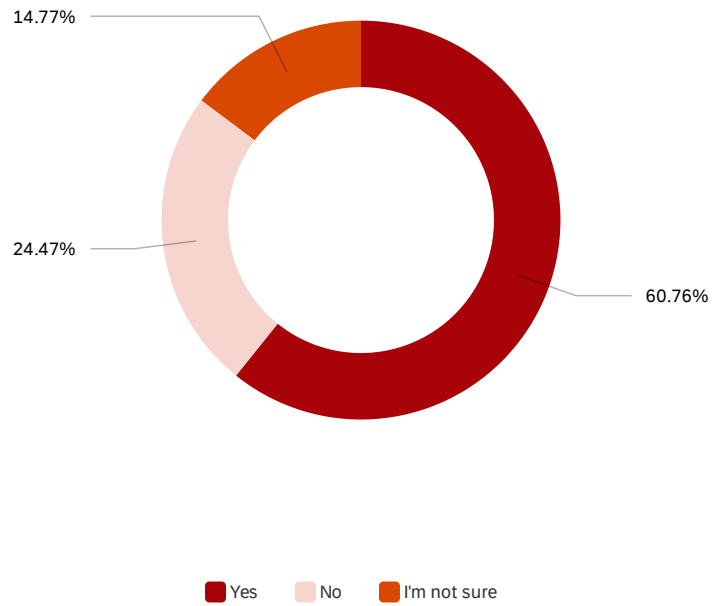
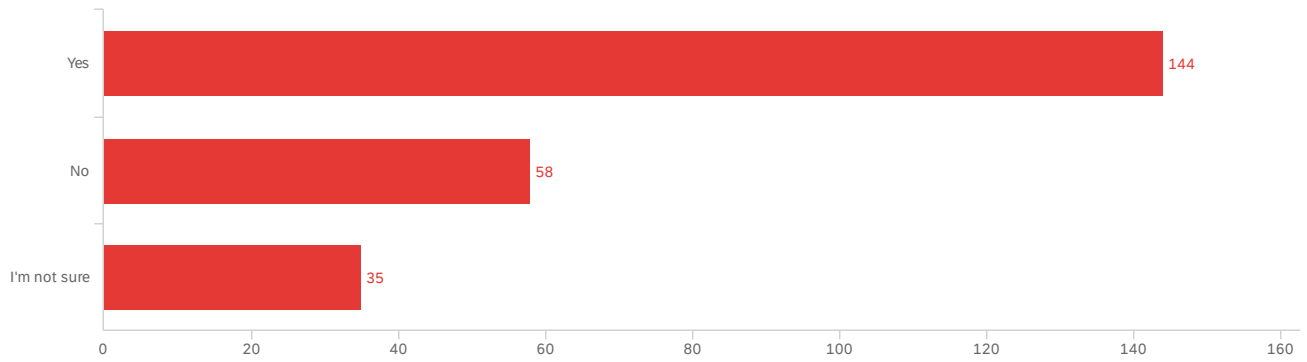
Q9. What would help you to prepare for a smoke event? Please select up to three choices.



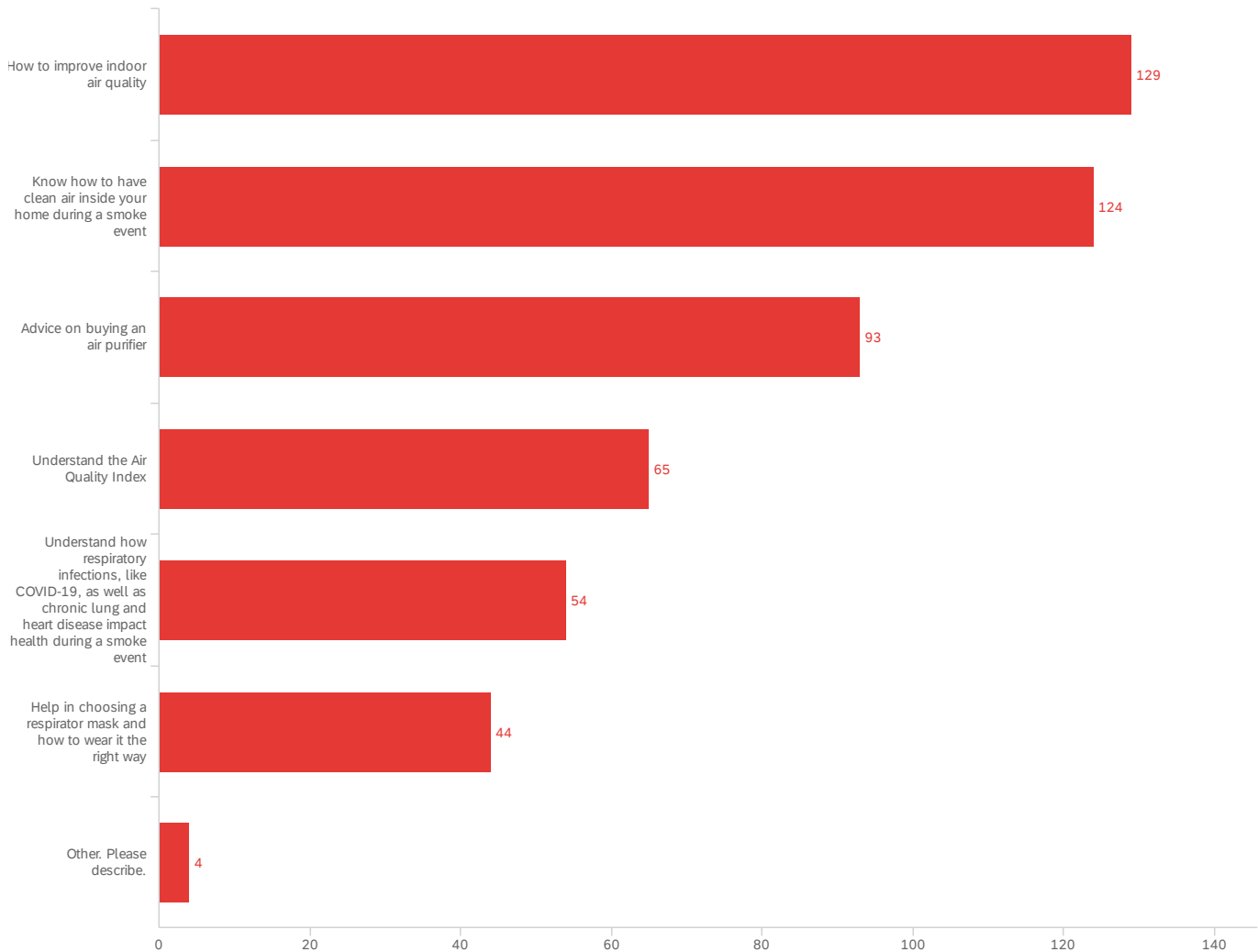
Key Themes and Responses From "Other: please describe."

- **Low-cost or free air filters**
 - "The really good furnace filters would be nice to get at a reasonable cost. They are supposed to help."
 - "Please to buy or get air filters for HVAC systems and air purifiers — often there's not a ton of notice and once it hits everywhere is sold out of the already limited supplies of these supplies."
 - "In addition to the low cost air purifier - making sure that replacement filters are also low cost and abundant through online or local stores (or even the health department?)"
- **Help with retrofitting or "smoke-proofing" homes**
 - "My windows and doors don't seal properly and smoke gets in"
 - "Advice from a professional for how to weatherproof my home better."
- **Air quality monitoring**
 - "The ability to monitor my indoor air quality so I know when to take additional action."
- **Information**
 - "A central place to get accurate updated reliable information"

Q10. Would you like more information on ways to protect yourself from smoke?



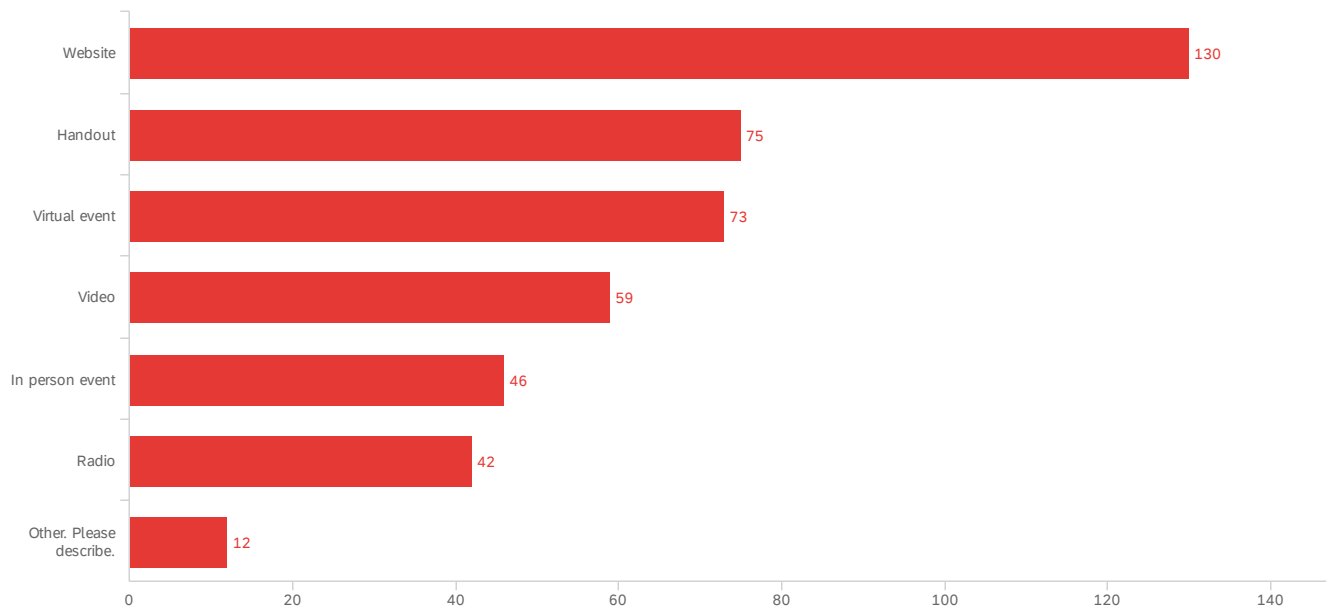
Q12. What topics would you most like to learn about? Please select all that apply.



Key Themes and Responses From "Other: please describe."

- **Help with home retrofitting**
 - "What agencies I can go to to seek help for low income help to make sure my home is well equipped to handle a smoke event"
- **Clean air spaces**
 - "Places for unhoused or poorly housed people to get out of poor air quality environments. We clearly know this is a recurring issue and need to plan long term for the protection of the general public. It isn't a once in a lifetime even, it is annual."
- **Air filtration**
 - "How to buy cheap air filters I can not afford"
- **Precautions for sensitive and vulnerable groups**
 - "My husband has congestive heart failure so clean air is very important for him."

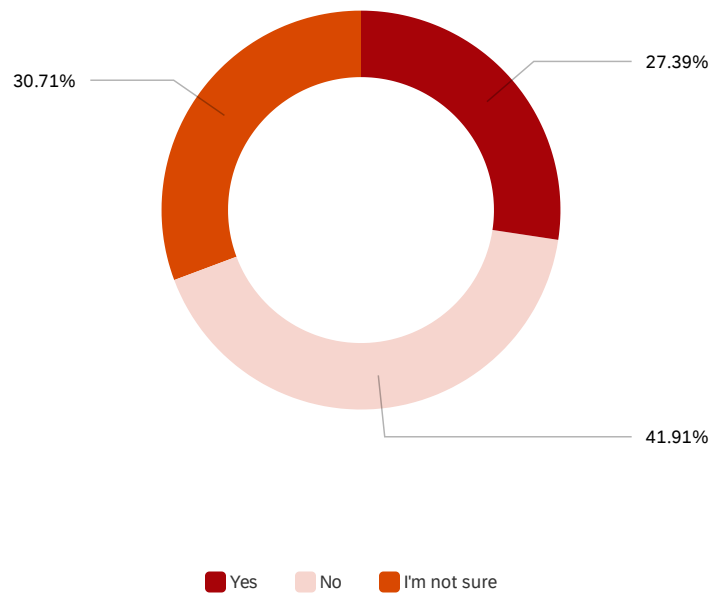
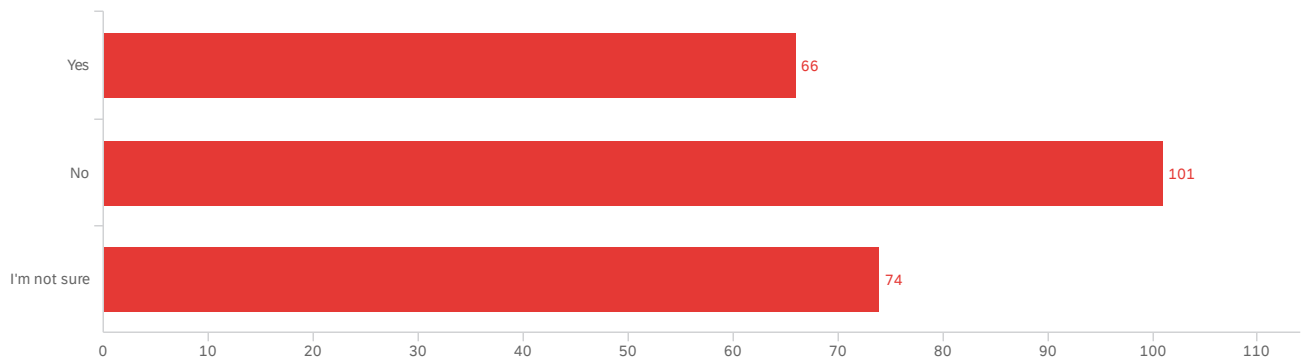
Q11. How would it be most helpful to get information? Please select up to three choices



Key Themes and Responses From "Other: please describe."

- **Social media**
- **Text alerts**
- **Mail**
- **Email**
- **TV News**
- **Videos with closed captioning**

Q13. Would you go to a cleaner air center for the public during smoke events?



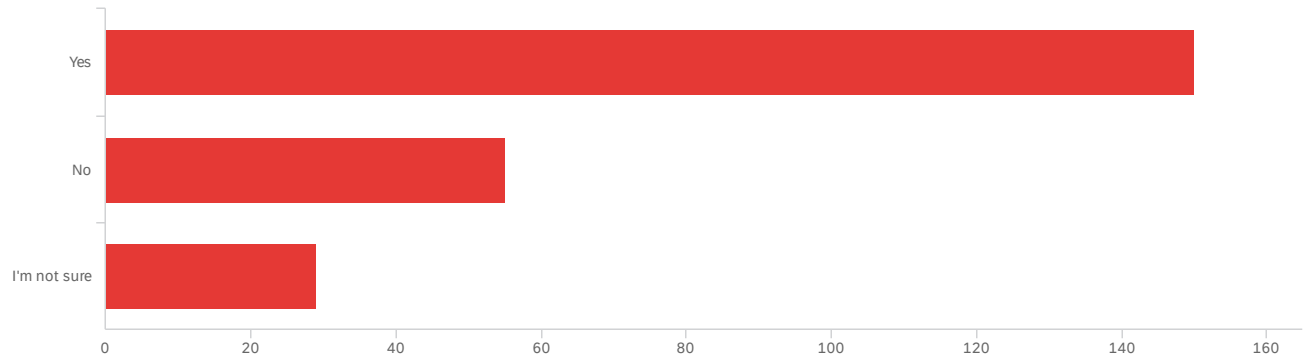
Q14. Please use the space below to tell us why you would not use a cleaner air center.

For instance, "I have an air purifier at home."

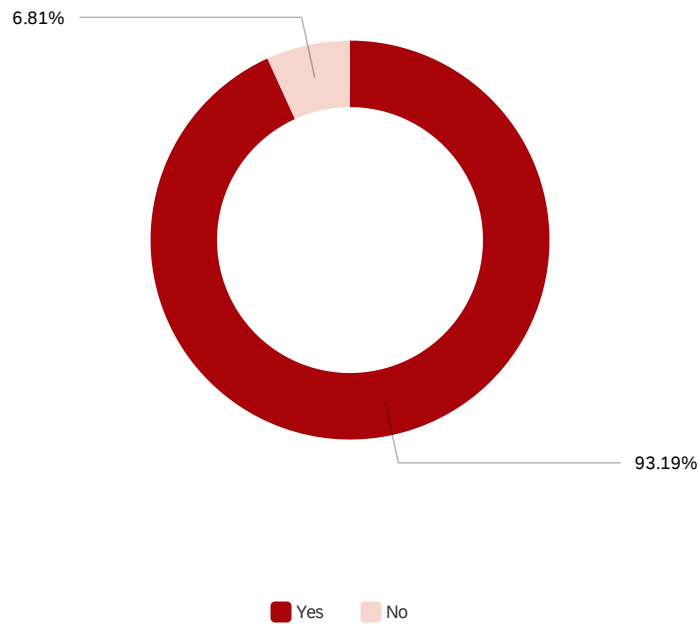
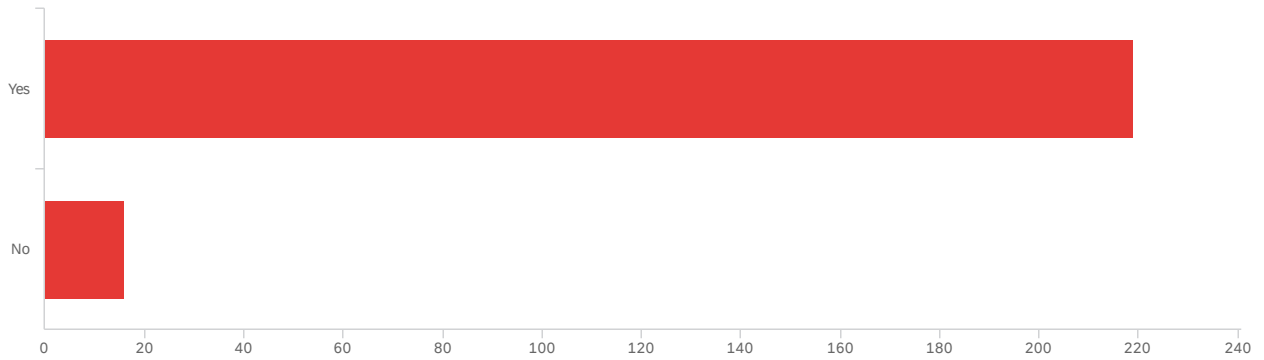
Key Themes and Responses

- **Creating clean air at home**
 - "Would rather learn how to keep the air clean at home. Not comfortable around lots of people."
- **Safety and comfort**
 - "I'm caregiver for my elderly mother, who has heart and lung issues. In addition to smoke, we need to avoid indoor gathering with others due to continuing Covid concerns."
 - "Hopefully before the next smoke event, I will know how to keep my indoor air healthy. I am older and thus would probably not wish to be in a large area possibly crowded with people who could also be ill at that time. I do like to plan ahead and would likely have something to help keep my inside air healthy."
 - "It would not be beneficial for my childrens' sensory needs."
- **Pets and livestock**
 - "I feel our home does an adequate job and also we have a pet that we would want to stay with."
 - "Loading up my family and traveling outdoors into the smoke to drive to a air center seems counter-intuitive. Knowing ways to purify the air at home is a safer solution. We live remote with livestock/pets and cannot leave them."
 - "I would be more comfortable at home, and I would not leave my animals home alone to suffer in bad air. It probably affects their little lungs worse than mine. I'd rather be home and try to make our air cleaner at home."
- **Inconvenience**
 - "Inconvenience of not being at home or work."
- **Leaving the area**
 - "I would leave the area or try to keep my indoor air clean."

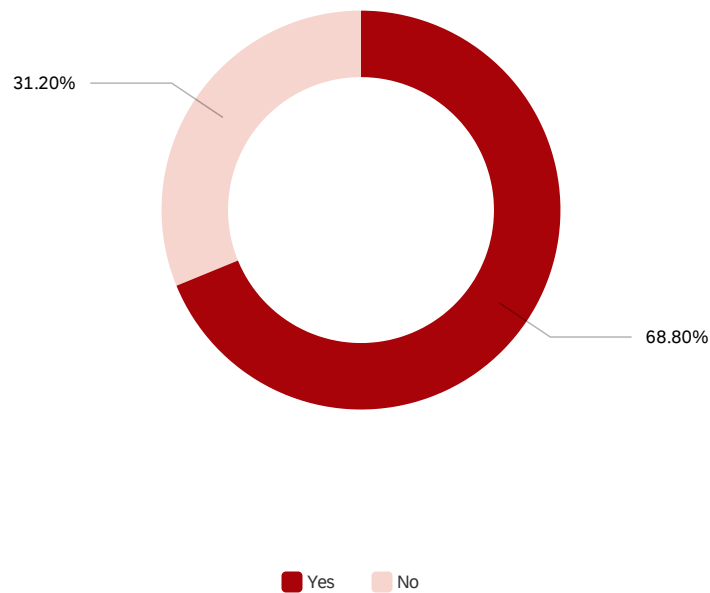
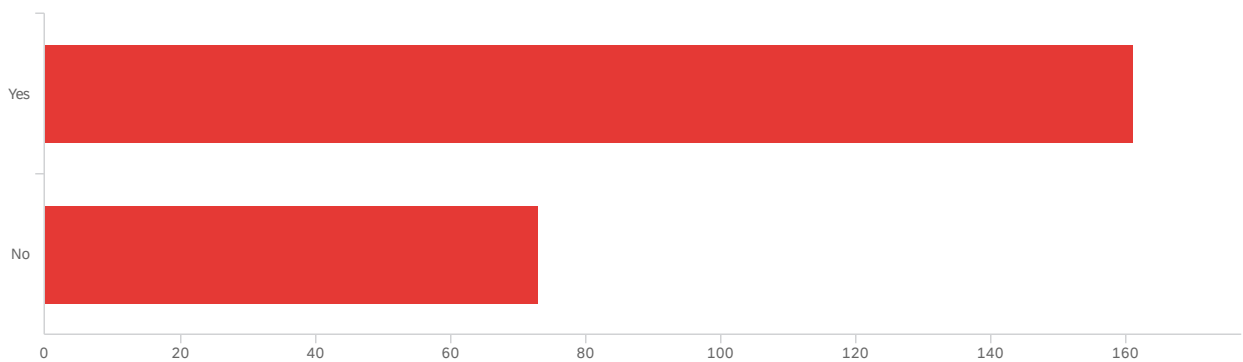
Q15. Are you signed up for your County's "Emergency Alert" or Everbridge emergency communication system?



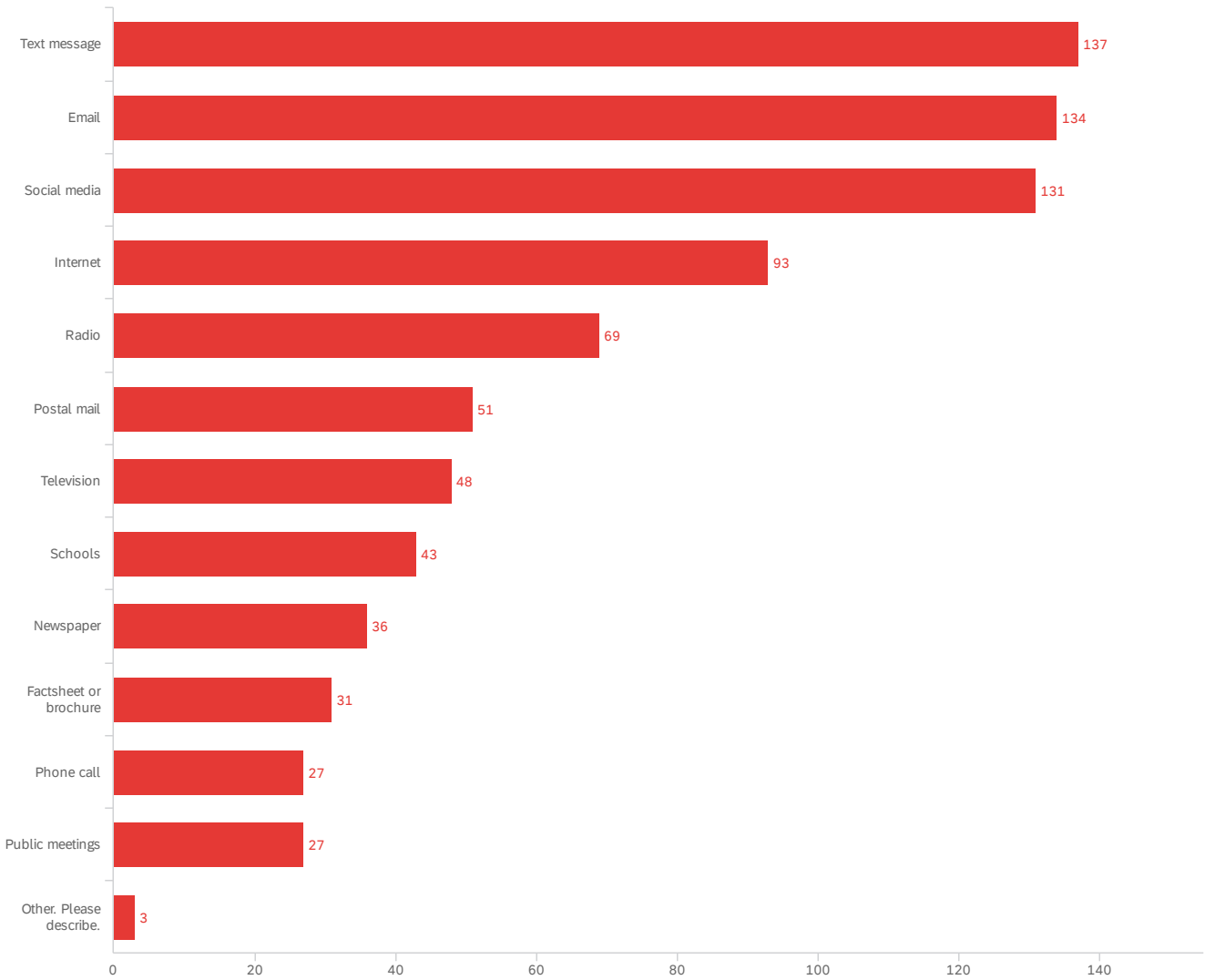
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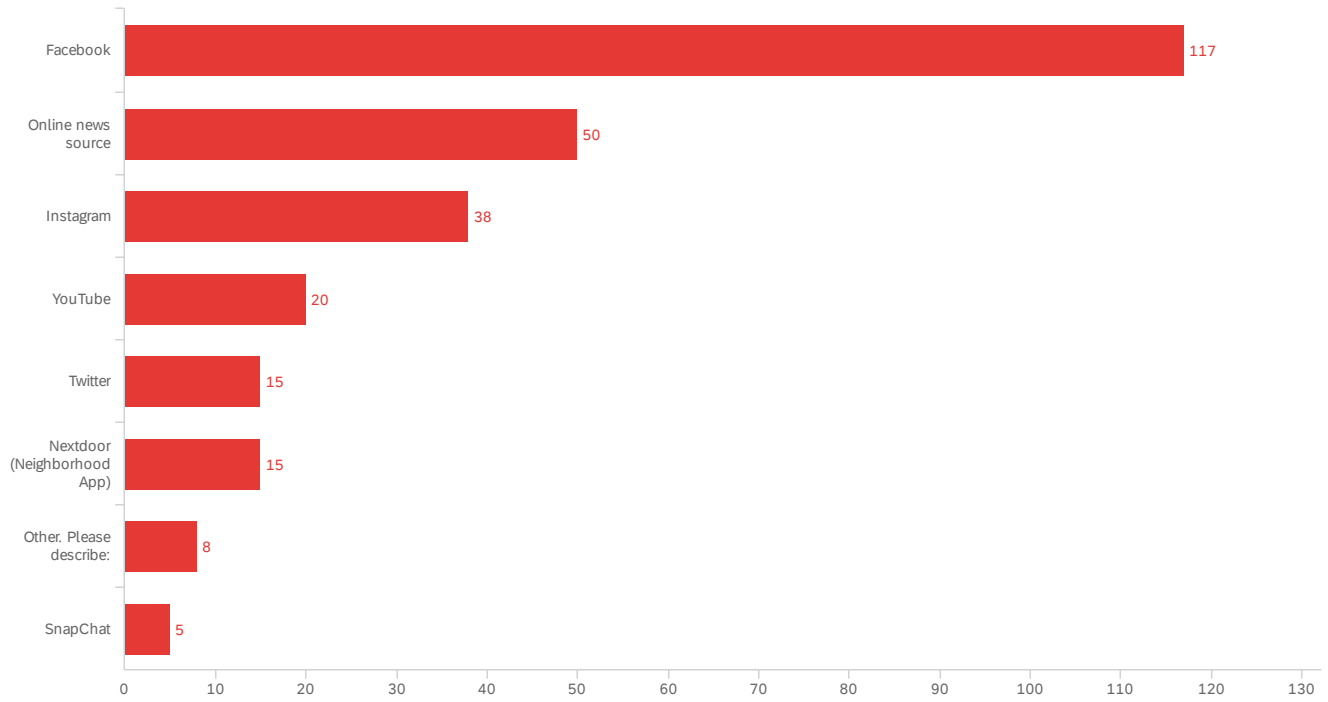
Q18. How do you prefer to get news about community information? Please select all that apply.



Key Themes and Responses From "Other: please describe."

- **Word-of-mouth**
- **County websites**

Q19. Which online platforms do you get your information from? Please select all that apply.



Key Themes and Responses From "Other: please describe."

- **Other social media channels**
 - "Twitch, Discord,Reddit"
 - "The Dalles Happenings" (local Facebook group)
- **Local websites**
 - "hoodriverweather.info"
 - "gorgeradio.com"
- **Oregon State University Extension Service**
- **TV News**

Q20. What else do you want to tell us? Please use the space below to tell us anything else you think we should know about how we can better inform you about the impacts of smoke from wildfires and prescribed fires.

Key Themes and Responses

- **Practical, actionable steps**
 - "Give recommendations for what to do when air quality is less than favorable."
 - "I use face masks but would like to know more about other kinds of respirators. Also what to do when indoors in spaces like at work where I can't purify the air. Also about eye protection."
 - "More practical, "hands-on" sort of relational information could be very helpful in describing why an N95 respirator is the best choice for most people, or a MERV-13 air filter if creating a DIY air purifier. Maybe even a description of what volume of air the average person breathes to encourage people to reduce direct outdoor air exposure during smoke events."
 - "Que hace falta mucha información sobre que hacer en caso de emergencia por humo o fuego. Ciertamente estos eventos nos causan alerta pero realmente yo no sabría que hacer además de evacuar mi casa." (Translation: There is a lot of information missing about what to do in case of an emergency due to smoke or fire. These events certainly cause us to be alert, but I really wouldn't know what to do other than evacuate my house.)
- **Multi-channel communication via text, phone call**
 - "By flooding us with info before, during and after an event, or if we loose power, some don't have strong enough internet strength to get our phones to connect to get the info we need"
 - "Text alerts for smoke events would be helpful"
 - "For folks who do not use the internet I think a phone call is very important."
- **Burn bans**
 - "I'd like our community to ban the burning of leaves in the fall. It's terrible for my asthma. Maybe dirt huggers would partner with folks to pick up people's leaves and compost them."
 - "Clearer info on burn bans, and what is allowed. Dates as well. When orders are in place, and when they are lifted. How to report violations."
 - "A major source of impaired air quality in the Gorge is agricultural burning -- i.e., burning of slash piles from timber harvest and from orchard pruning. It would help our communities to reduce this voluntary air pollution. For example, limiting the allowed window of ag burning, and even better, hosting a slash-chipping site. A tub grinder being run a week or two could radically reduce our orchard slash-generated smoke."
- **Community events and outreach**
 - "Encourage the development of hand out to educate children in the school system and have them take it home to their parents or whomever they live with and neighbors. Hopefully before any events, have info in the community newspapers."
 - "School talks and visits for kiddos and parents"
 - "During parents meeting doing an assembly like a gathering for parents, pop up events to provided information."
 - "trainings on how to prepare for a fire evacuation"

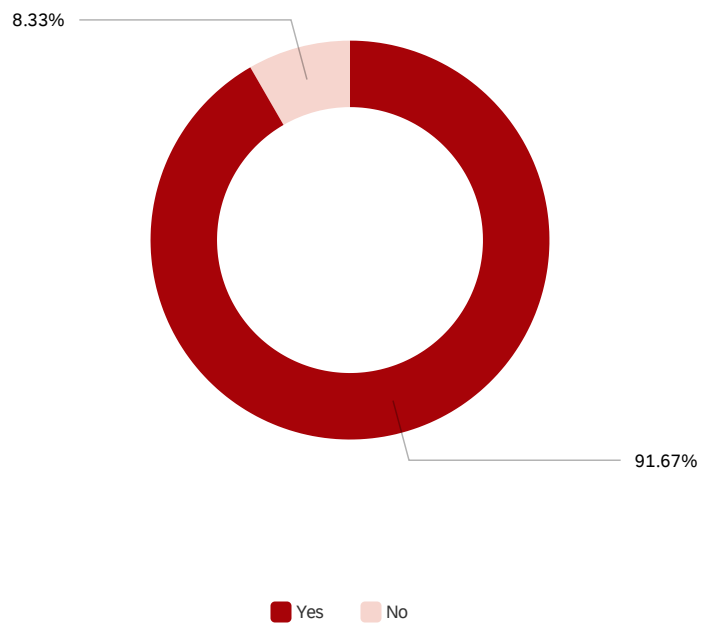
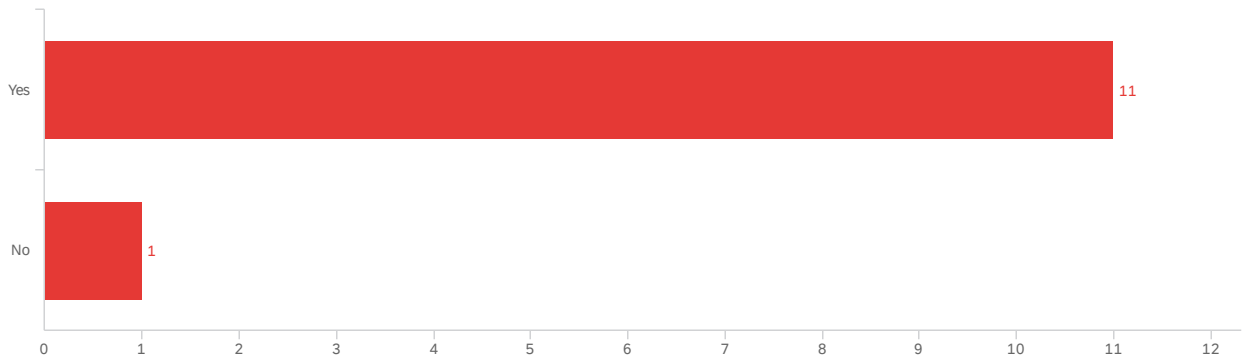
End of Report

CRP Data for Sherman County

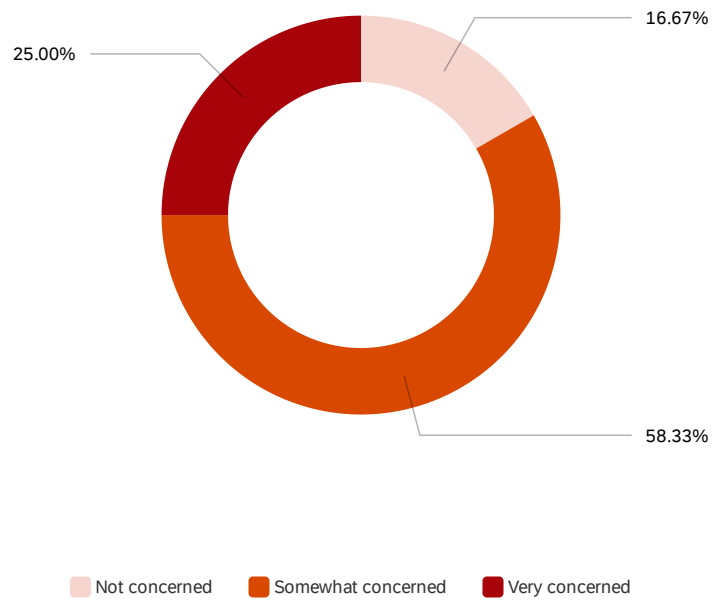
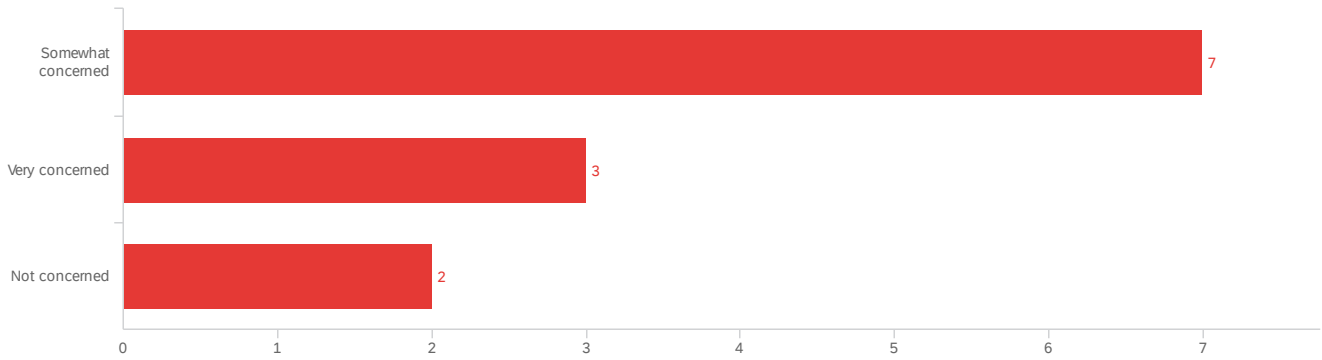
Columbia Gorge Community Response Plan Survey

December 19, 2024 1:54 PM PST

Q5. Do you know about the Air Quality Index (AQI)?

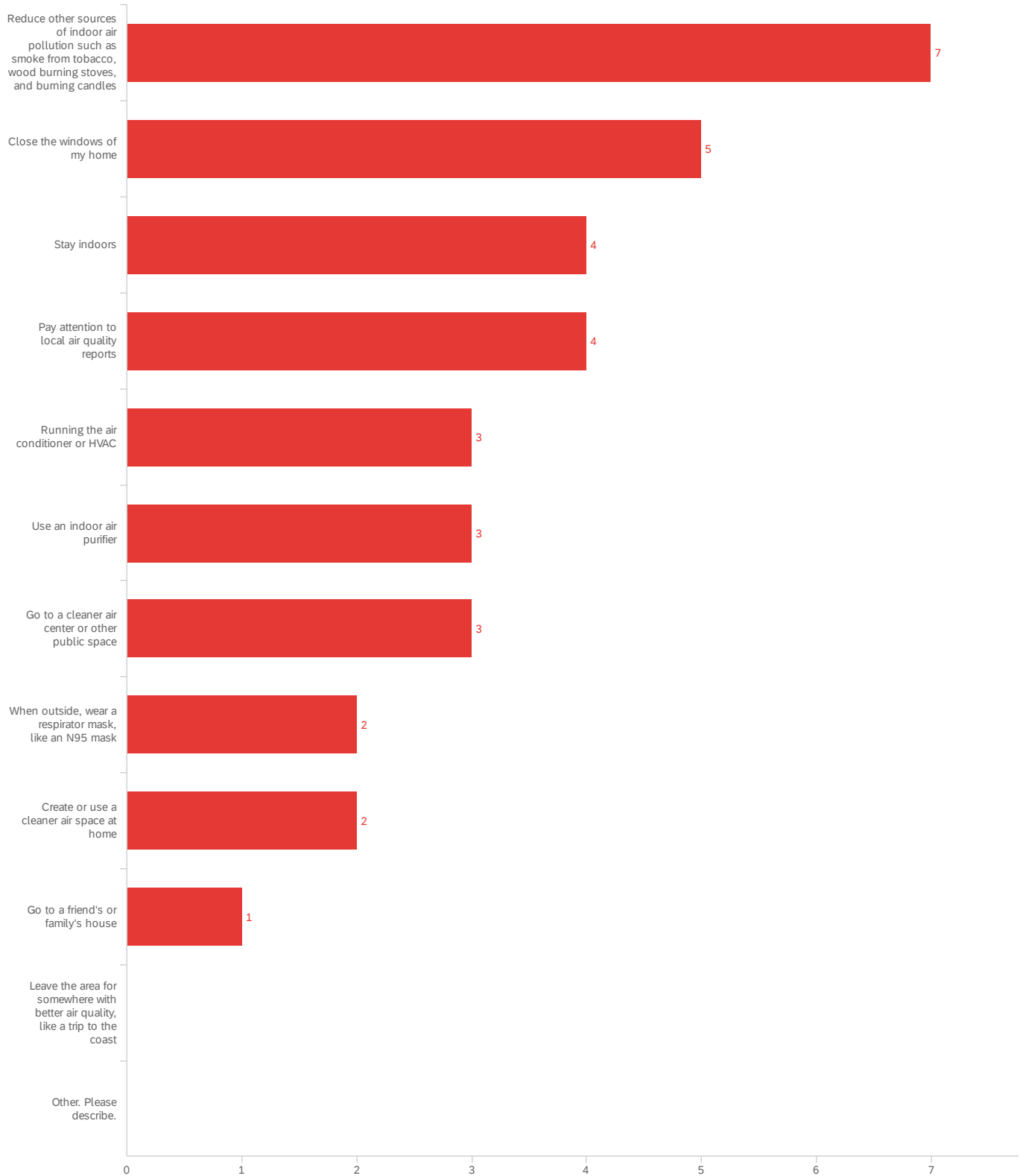


Q6. Please mark how concerned you are about the impact of wildfire smoke on your health during smoke events.

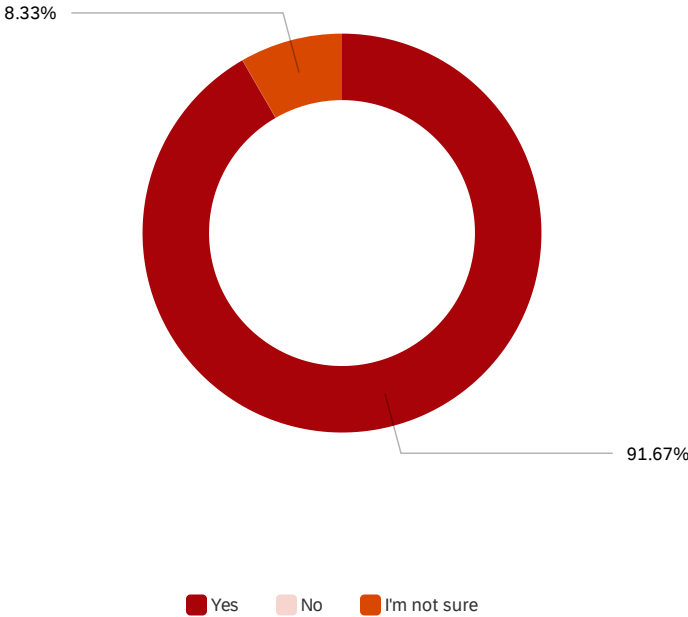
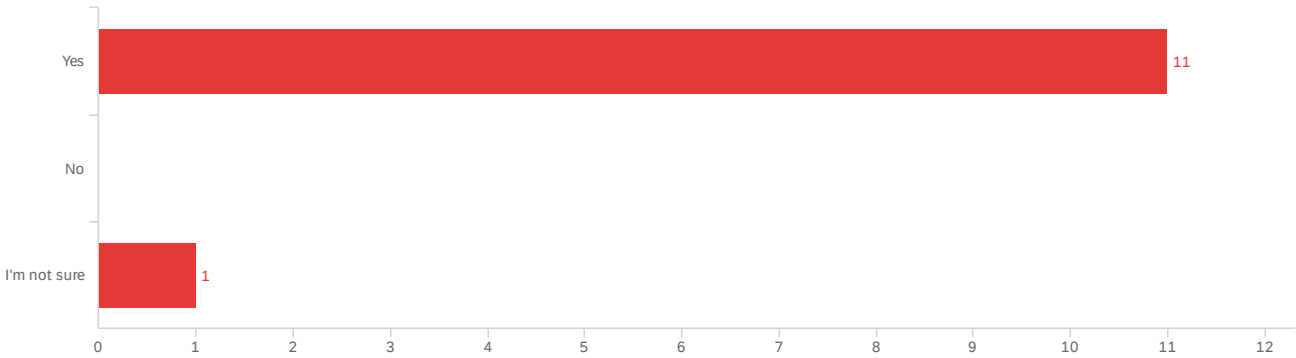


Q7. How do you and the people you live with protect yourselves from a smoke event?

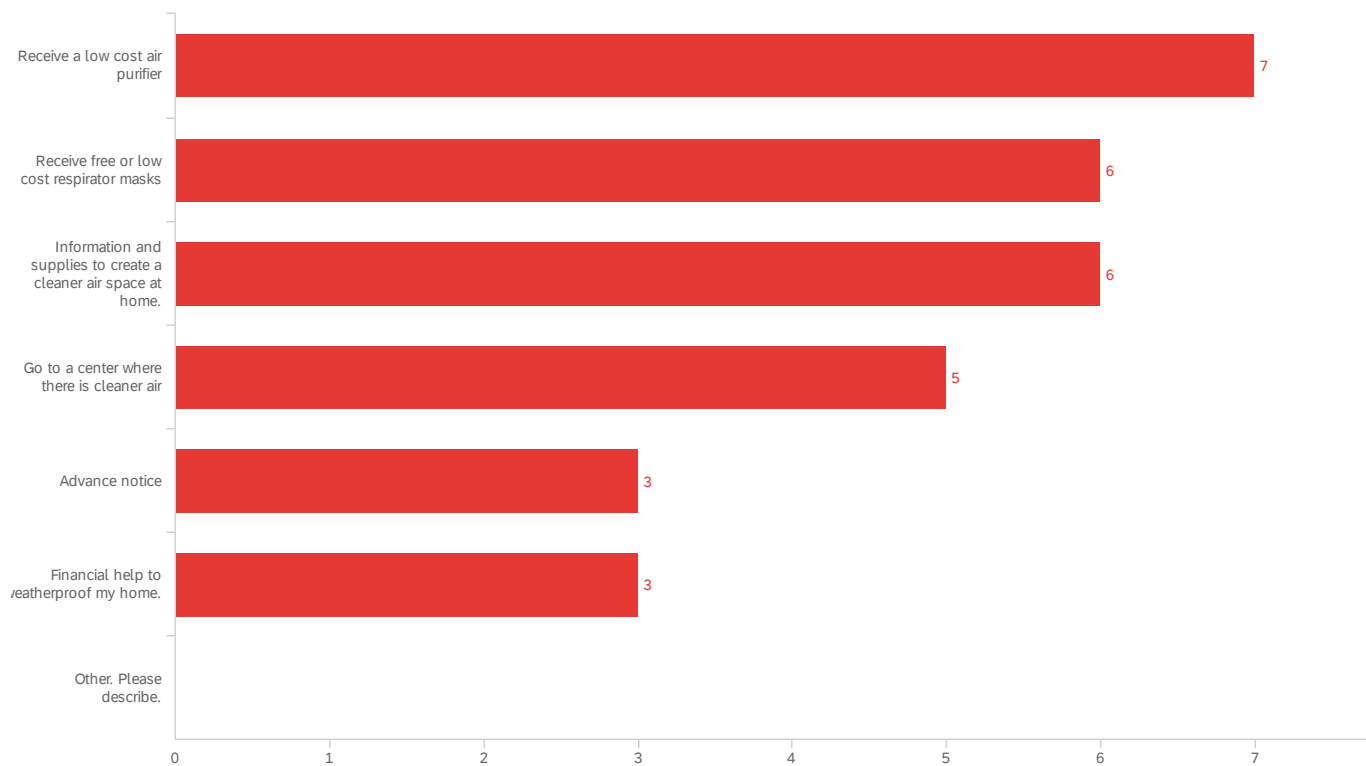
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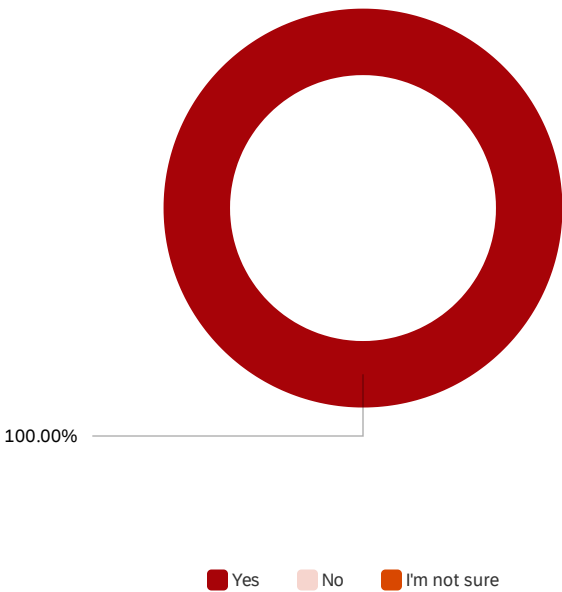
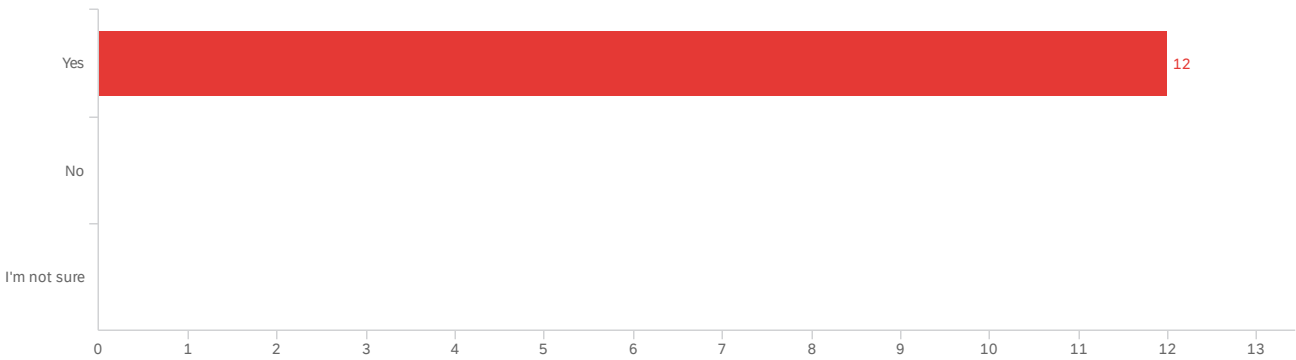
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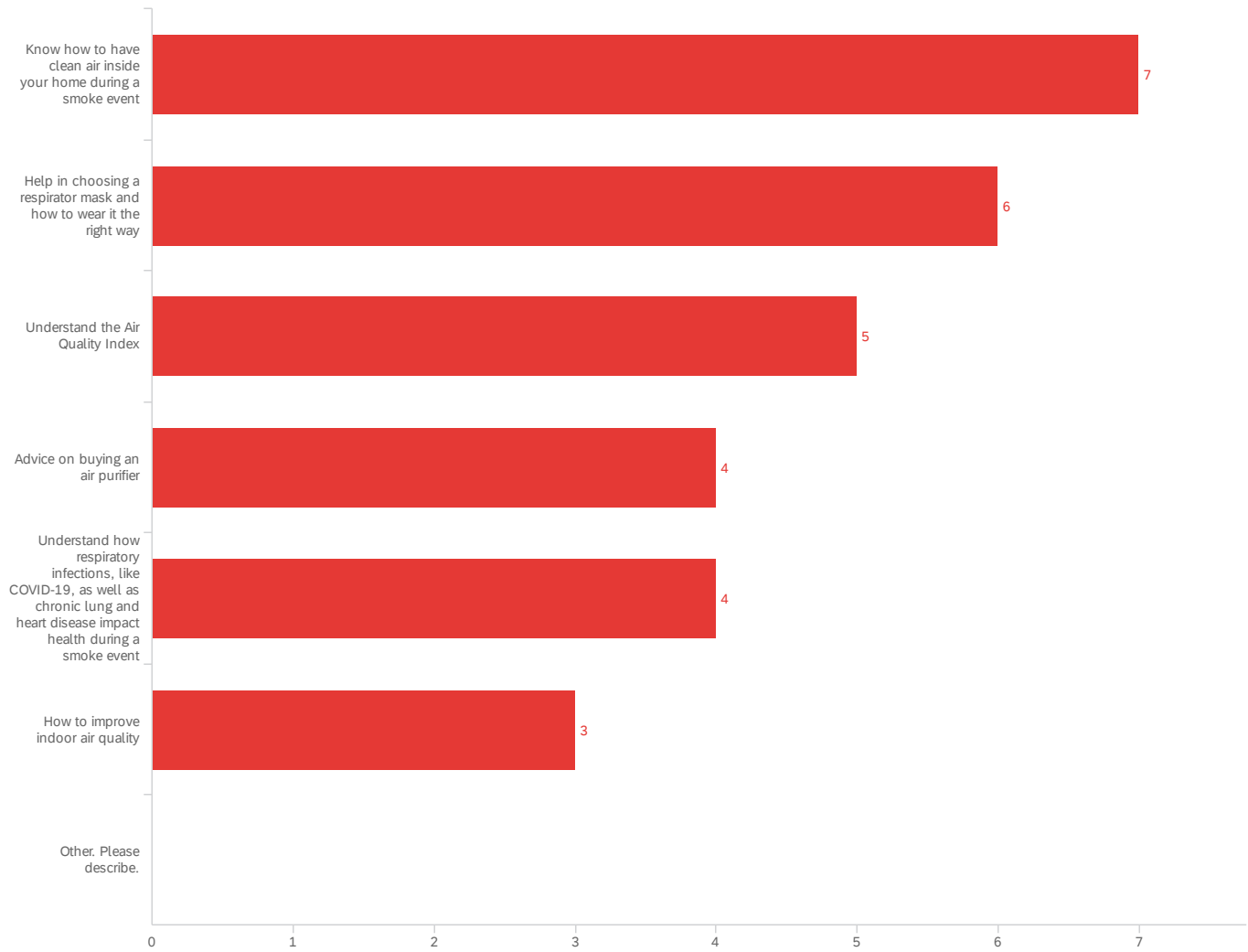
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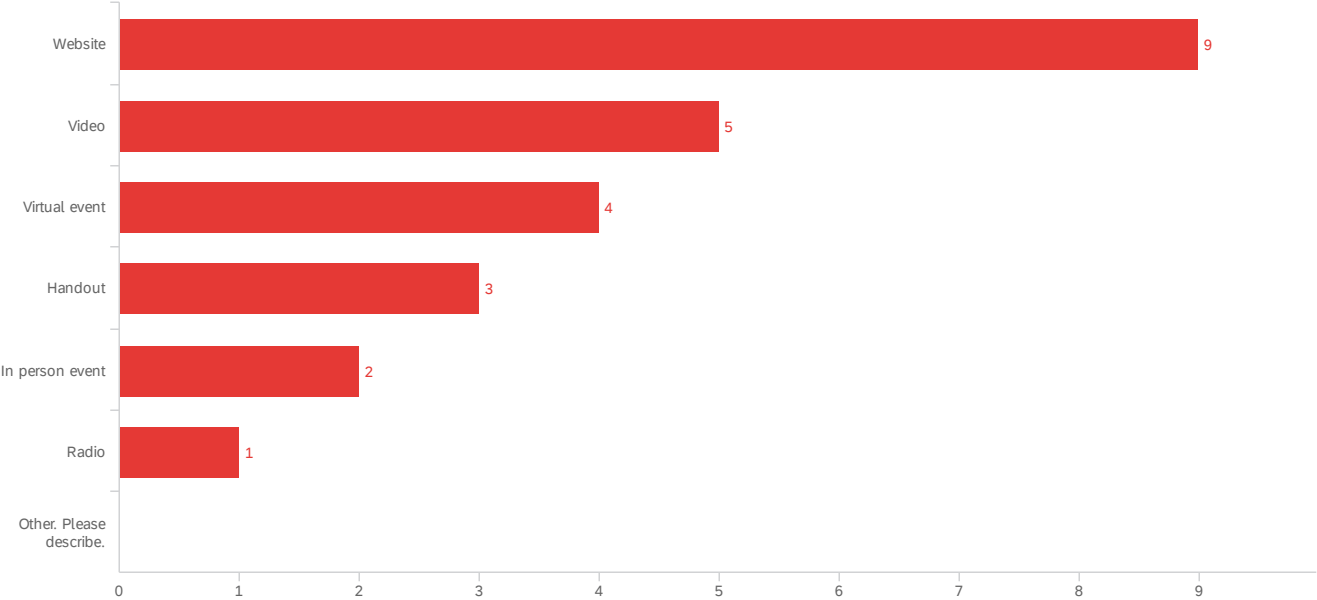
Q10. Would you like more information on ways to protect yourself from smoke?



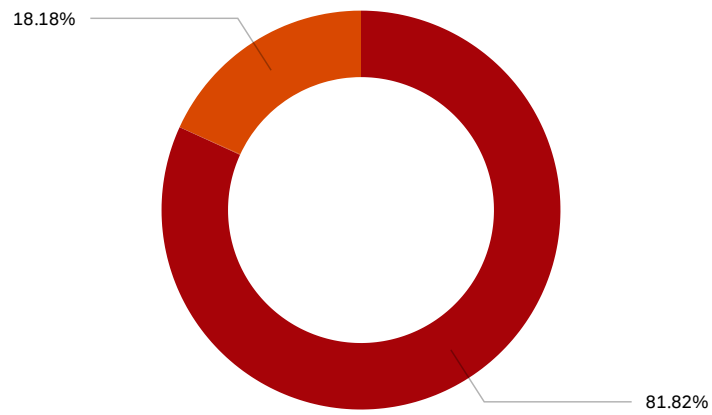
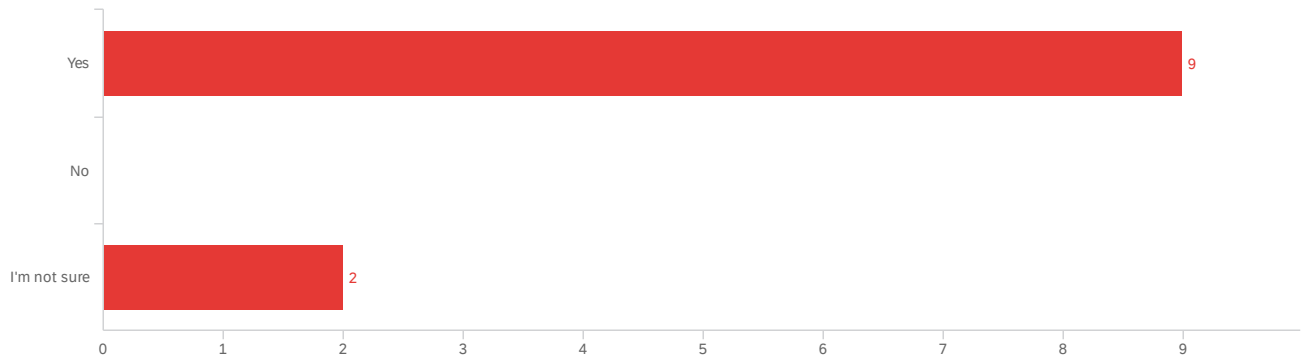
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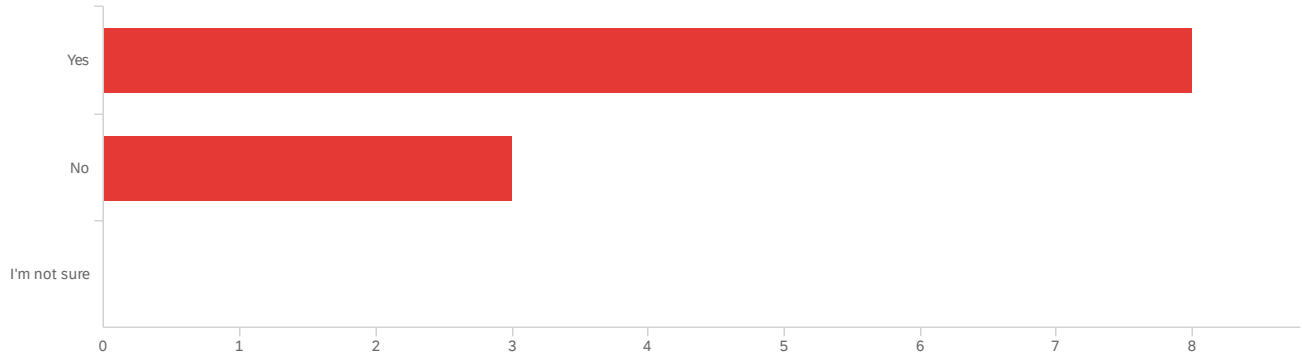


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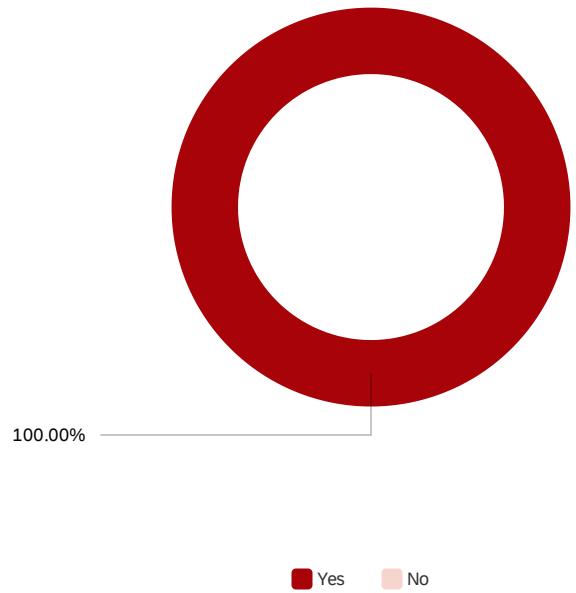
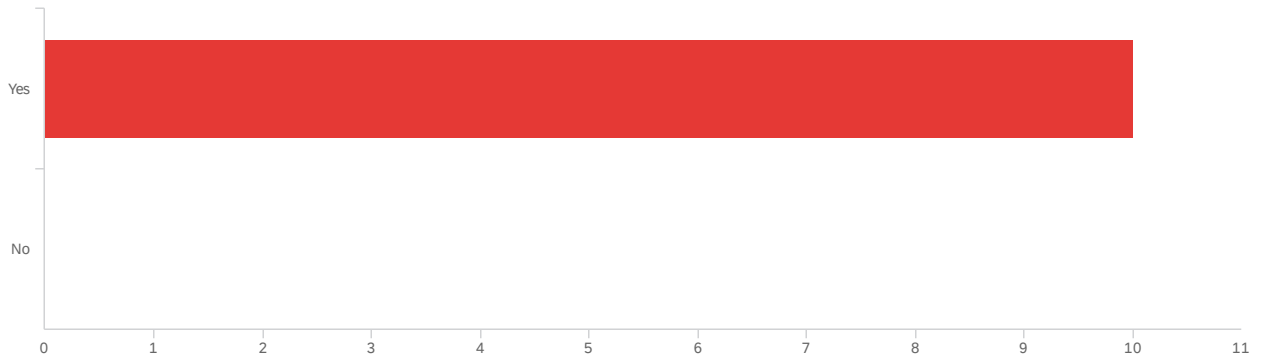


■ Yes ■ No ■ I'm not sure

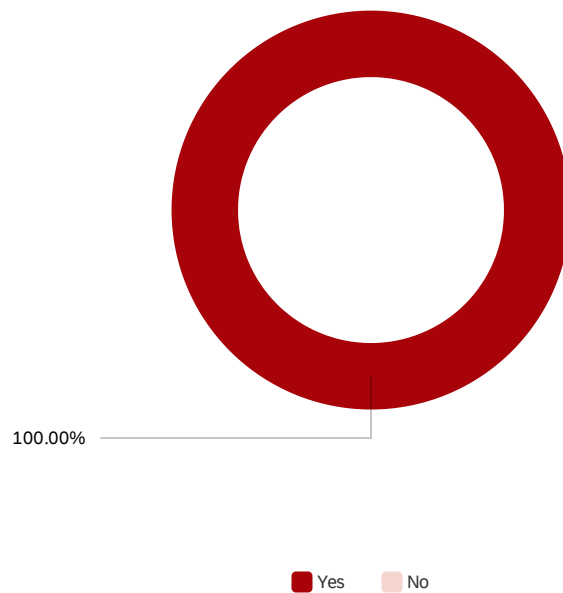
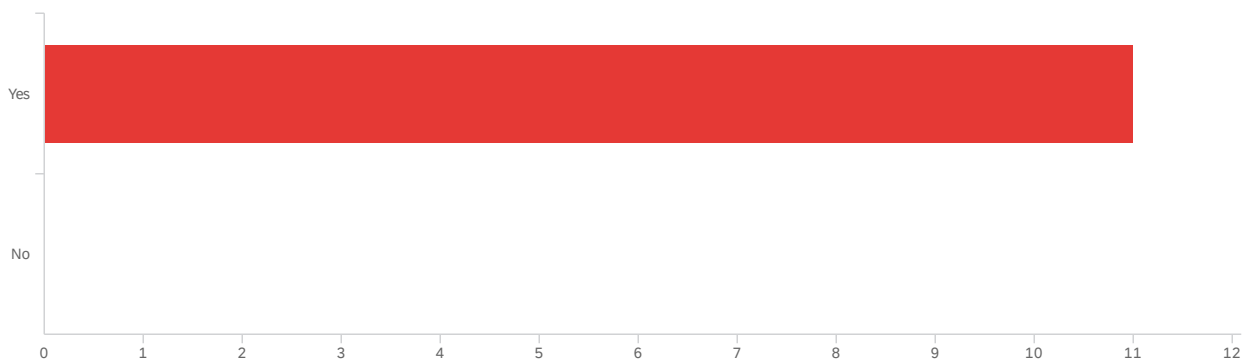
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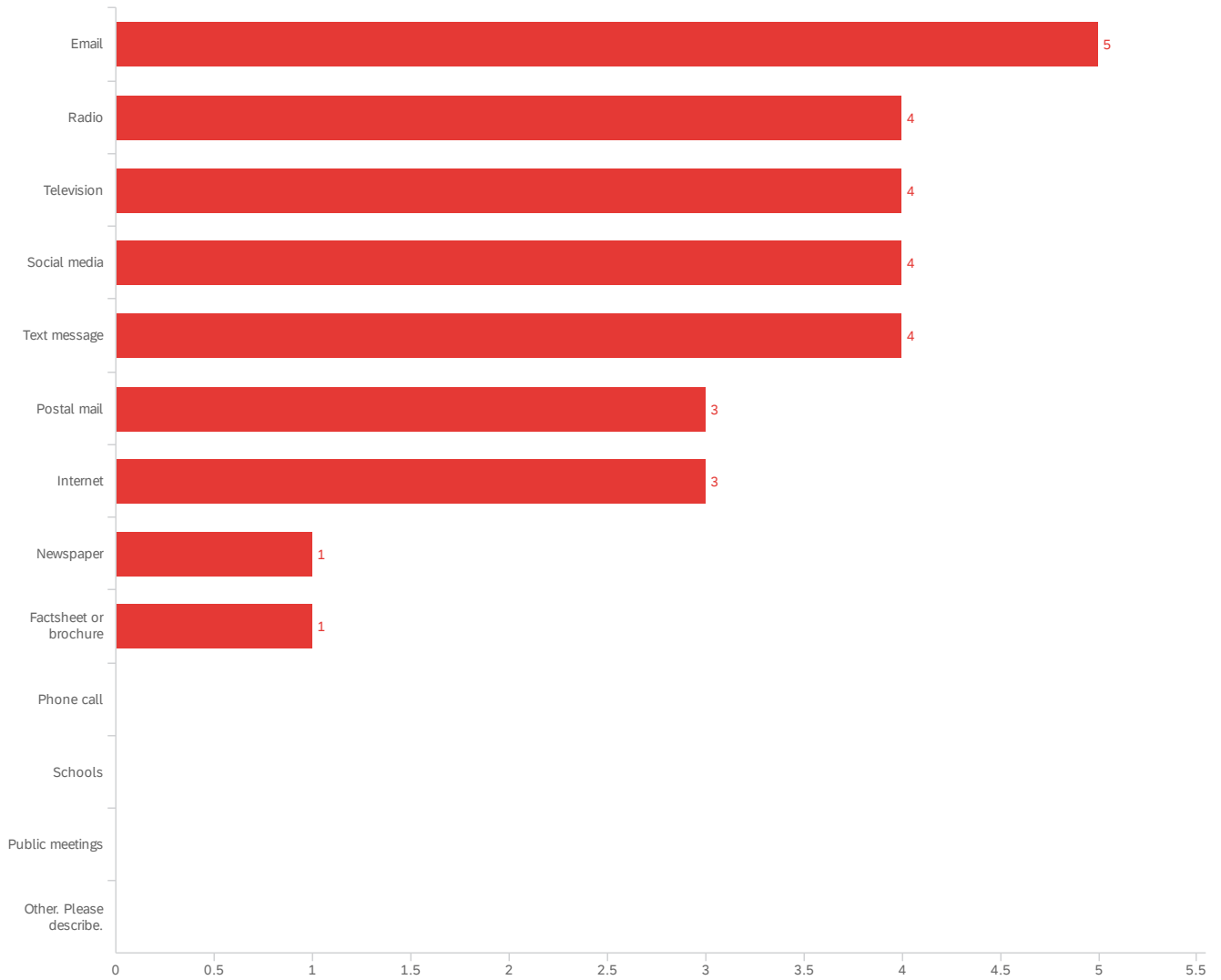
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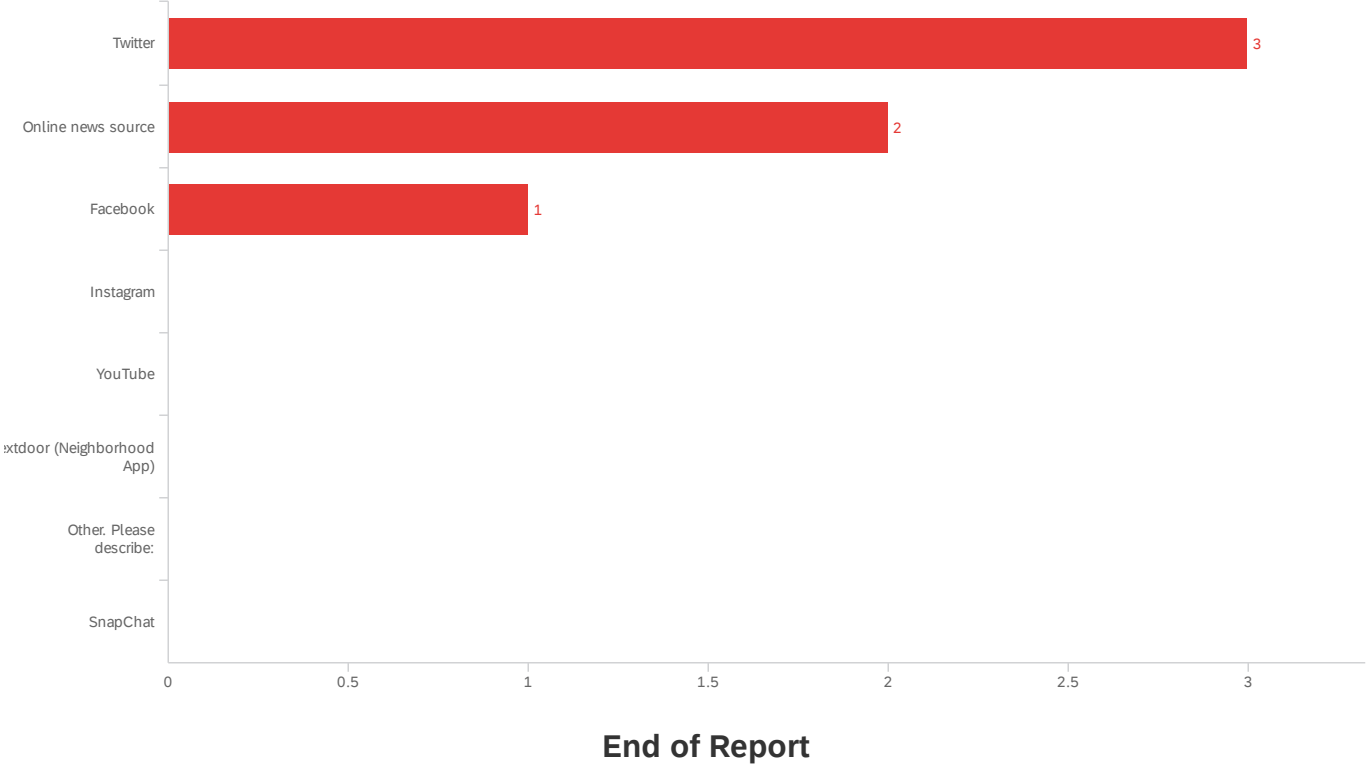
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Q18. How do you prefer to get news about community information? Please select all that apply.



Q19. Which online platforms do you get your information from? Please select all that apply.

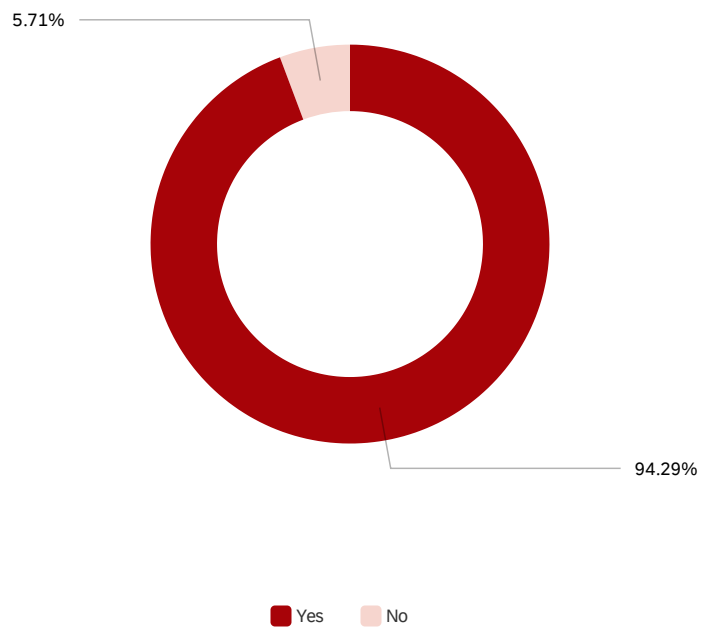
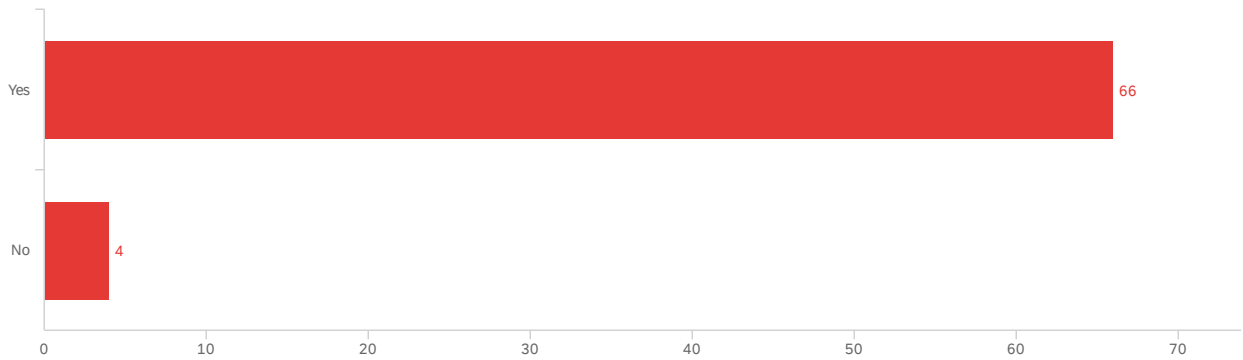


CRP Data for Klickitat County

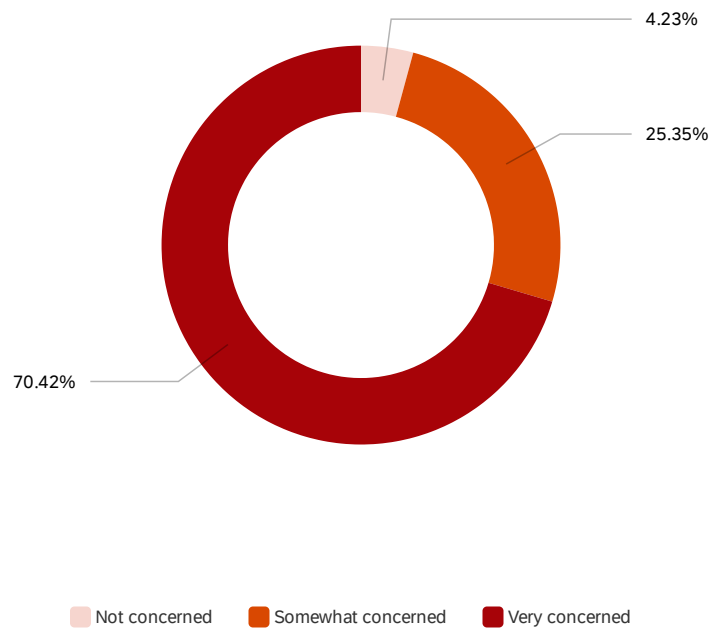
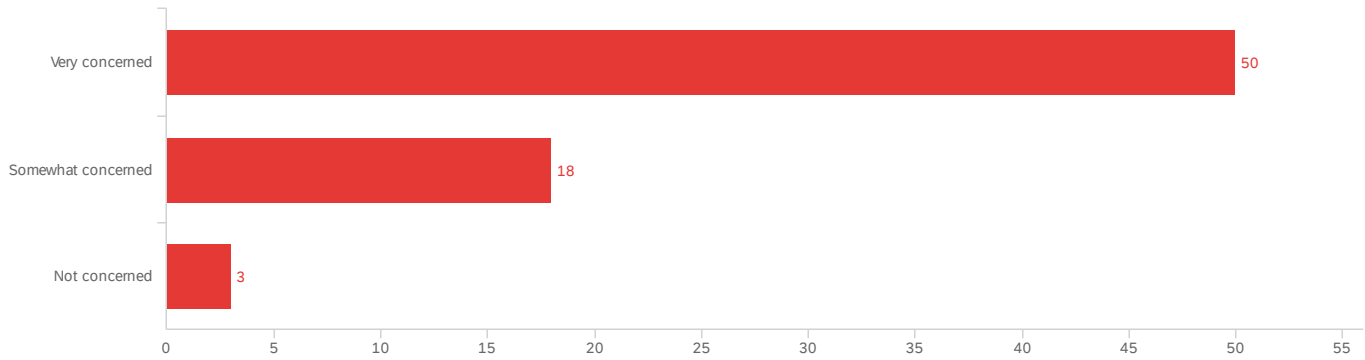
Columbia Gorge Community Response Plan Survey

December 19, 2024 1:49 PM PST

Q5. Do you know about the Air Quality Index (AQI)?

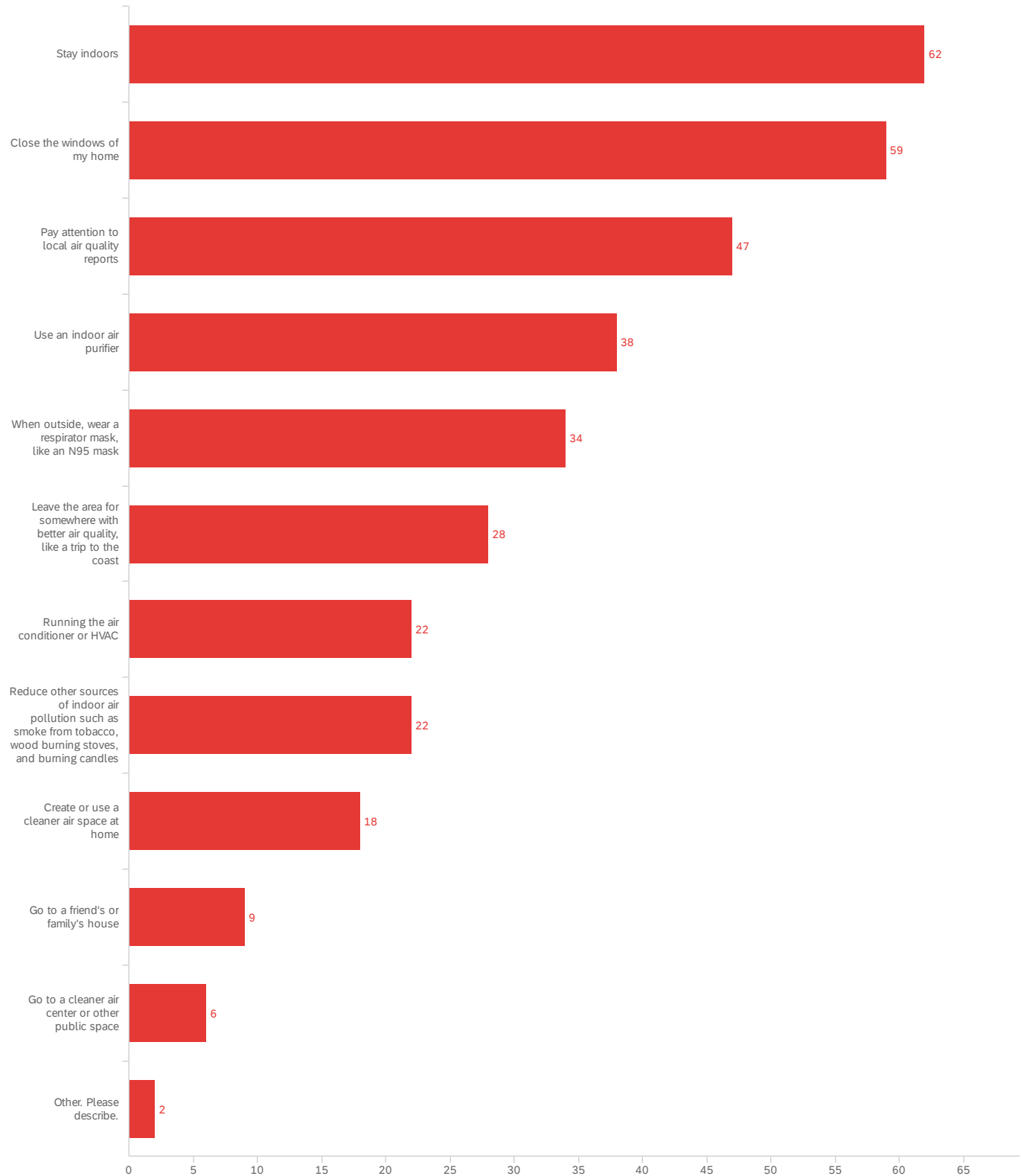


Q6. Please mark how concerned you are about the impact of wildfire smoke on your health during smoke events.



Q7. How do you and the people you live with protect yourselves from a smoke event?

Please select all that apply.

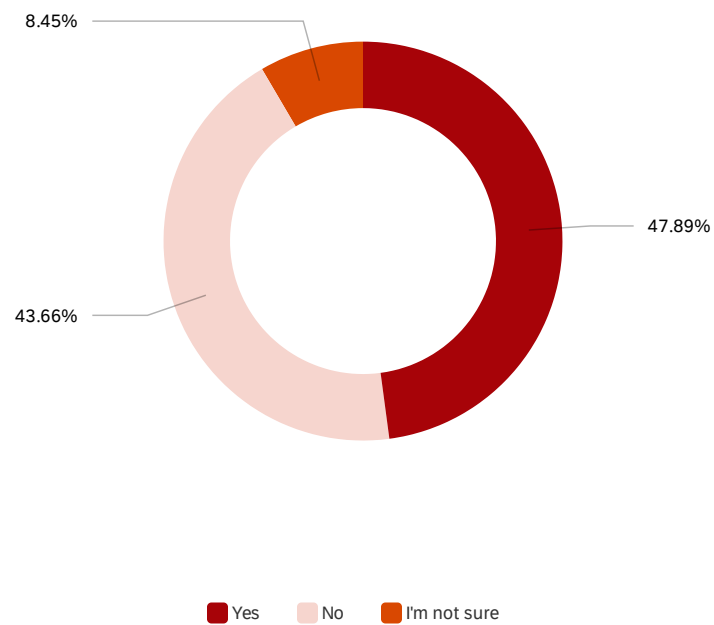
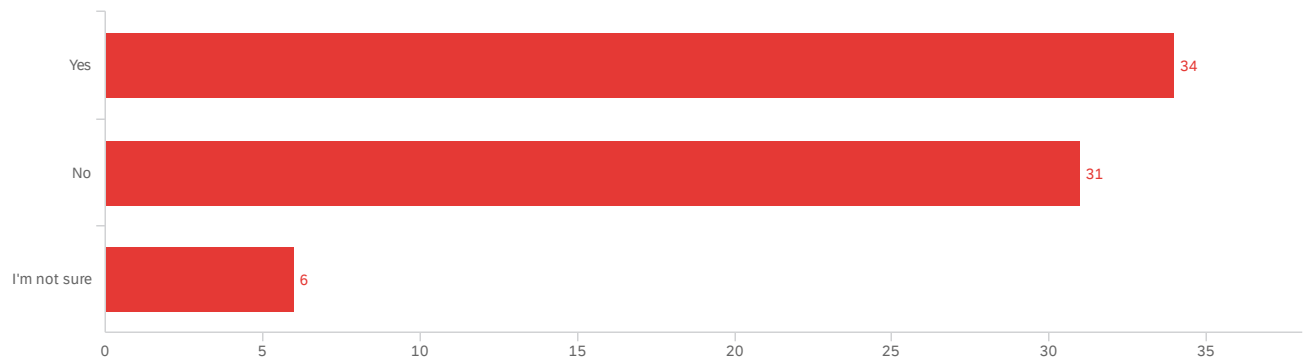


Other. Please describe.

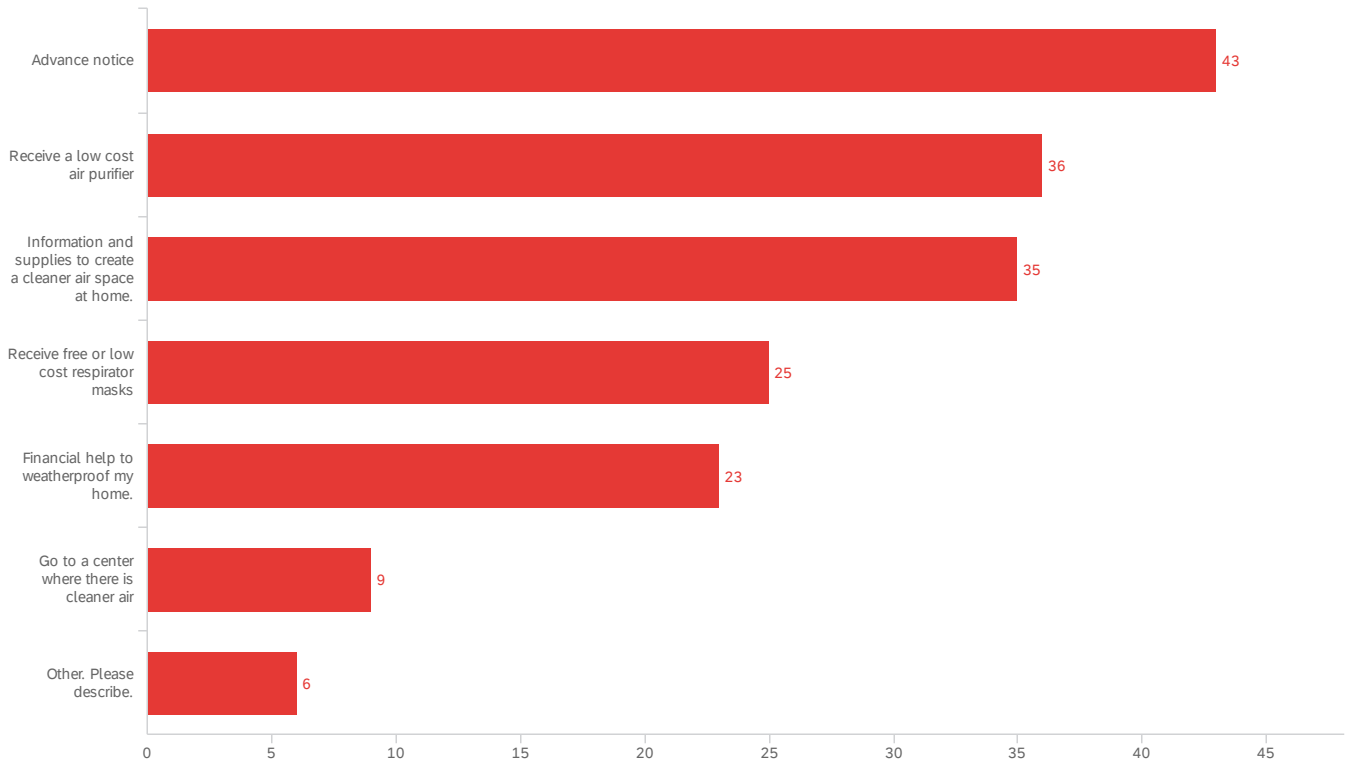
Seal doors and window with plastic.

don't have AC, but lean an furnace filter against a fan - disgusting how quickly it gets brown!!

Q8. Do you have a way to clean or purify the air in your home?



Q9. What would help you to prepare for a smoke event? Please select up to three choices.



Other. Please describe.

Educate people on how to dispose of wood from their property. We have neighbors upwind of us who have cut multiple trees down and spent 3 of the last 4 fall/spring seasons burning their green wood.

yes we need new windows and doors

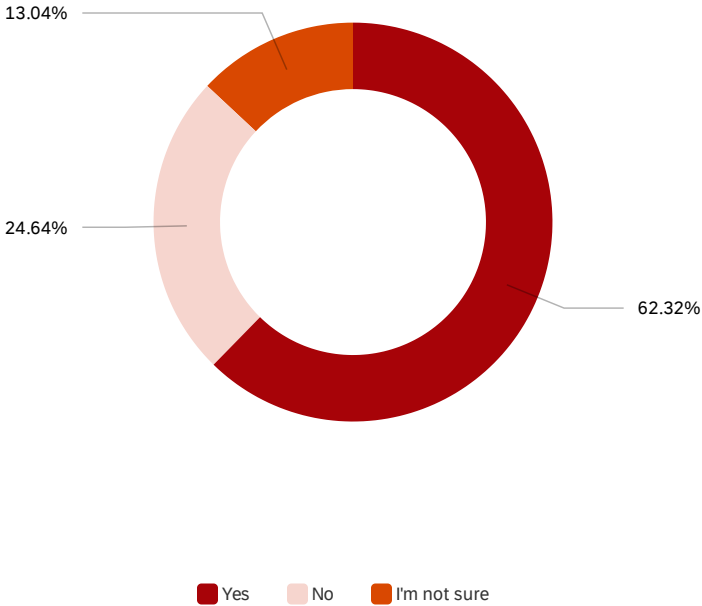
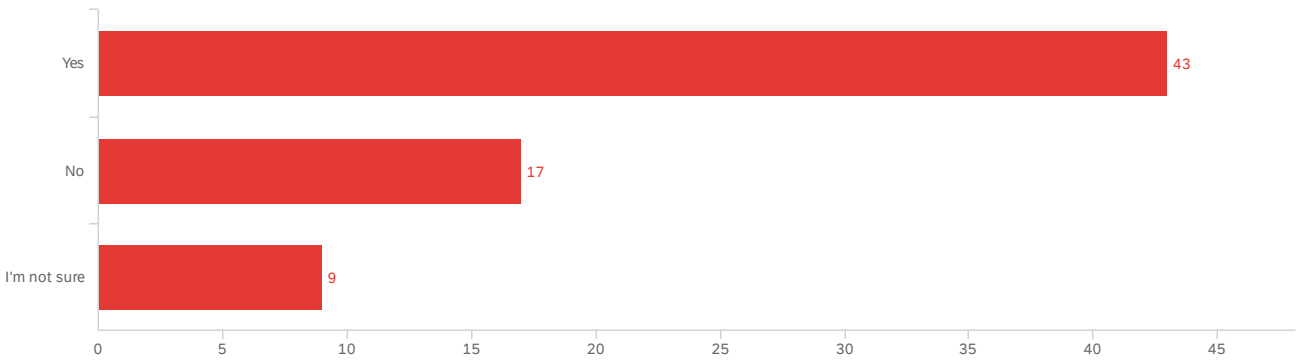
better forecasting from NWS

Prohibit prescribed burning during dry periods

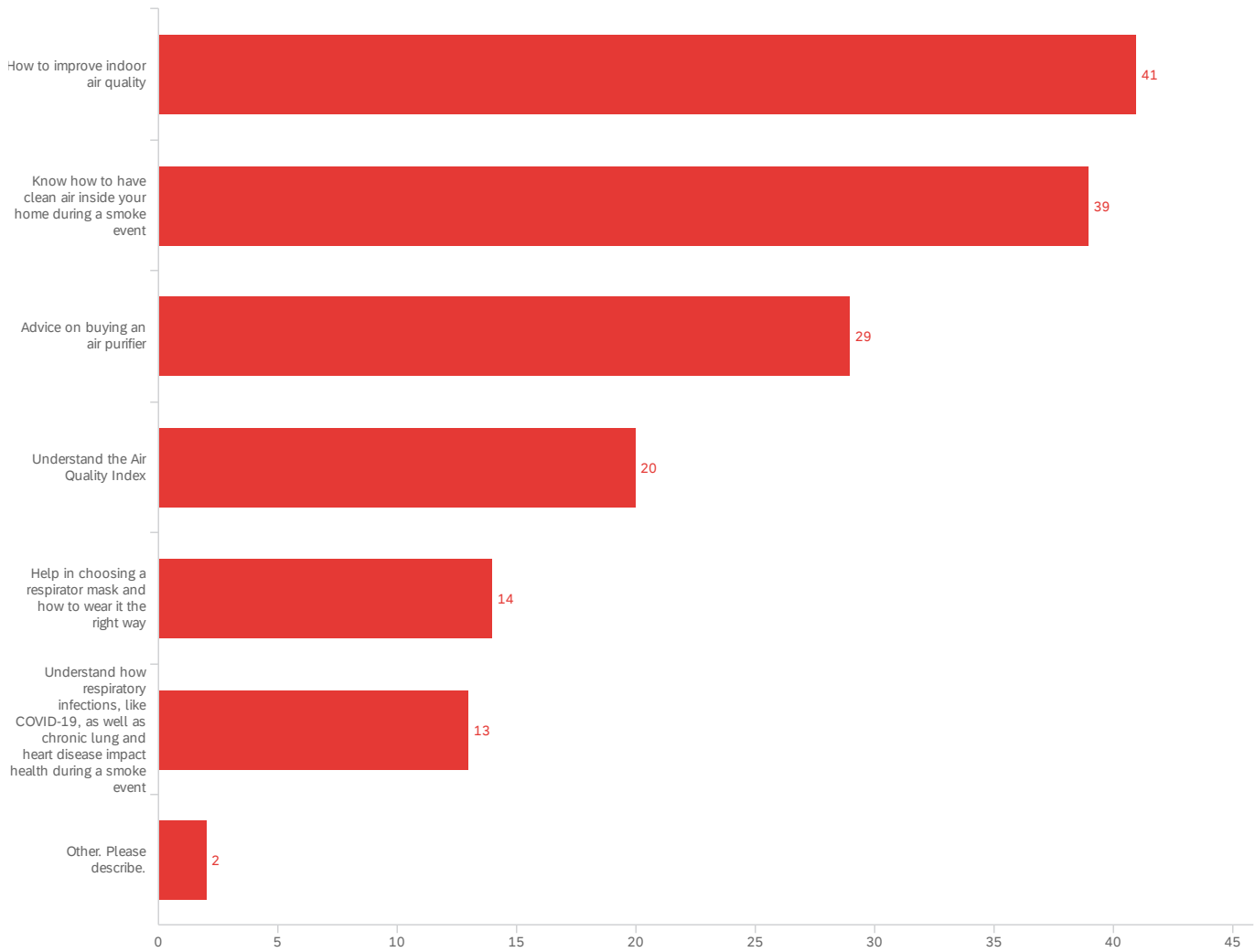
direction to high quality, effective, air cleaner I can buy - and assurance that it will make a significant difference

No help needed. Smoke events in the gorge are few, far between, short duration and have been happening since before humans arrived here. I'm a healthy, intelligent adult and know how to protect myself and family from smoke if necessary.

Q10. Would you like more information on ways to protect yourself from smoke?



Q12. What topics would you most like to learn about? Please select all that apply.

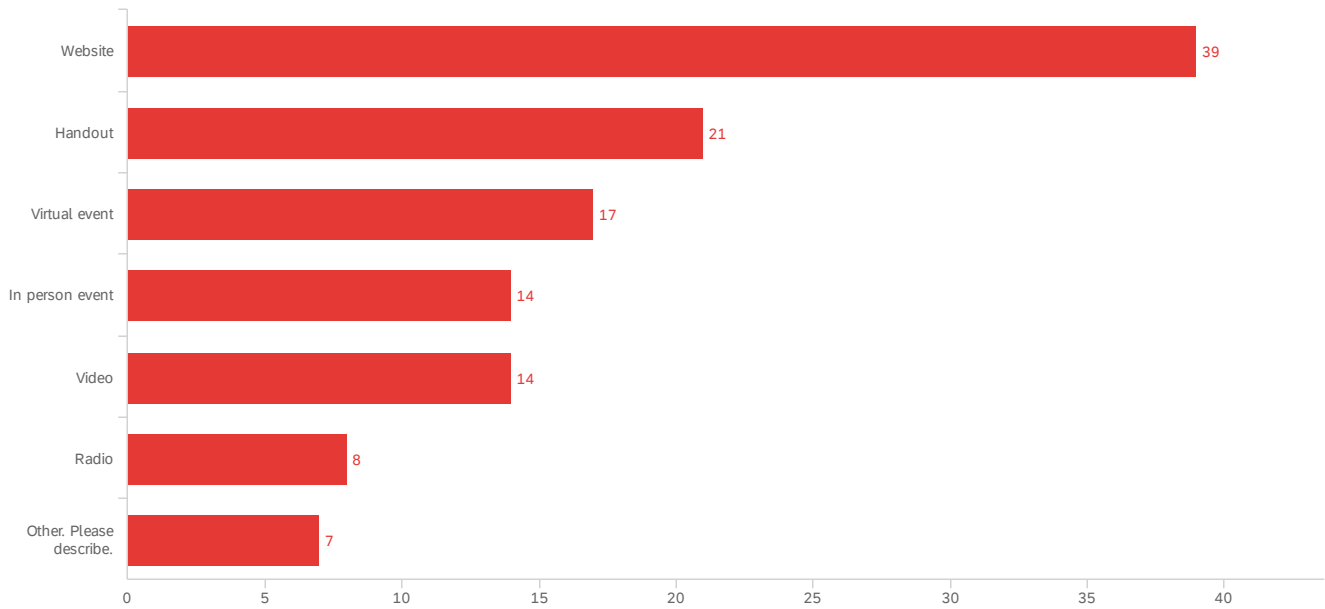


Other, Please describe.

Community education on the health effects of being exposed to the smoke including children and animals

actual degree of damage - we know it's bad, but I'd really like to know how bad. Are the scientists and forestry officials sending their families away during smoke events? or are they OK with masks outside and a filter or 2 inside???

Q11. How would it be most helpful to get information? Please select up to three choices



Other. Please describe.

Mail delivered by post office or handouts available in post office

Text

Any and all. The neighbors that I've spoken of do not live there, they only visit from time to time. Their gardeners tend the piles. I don't know how to "get" to the owners.

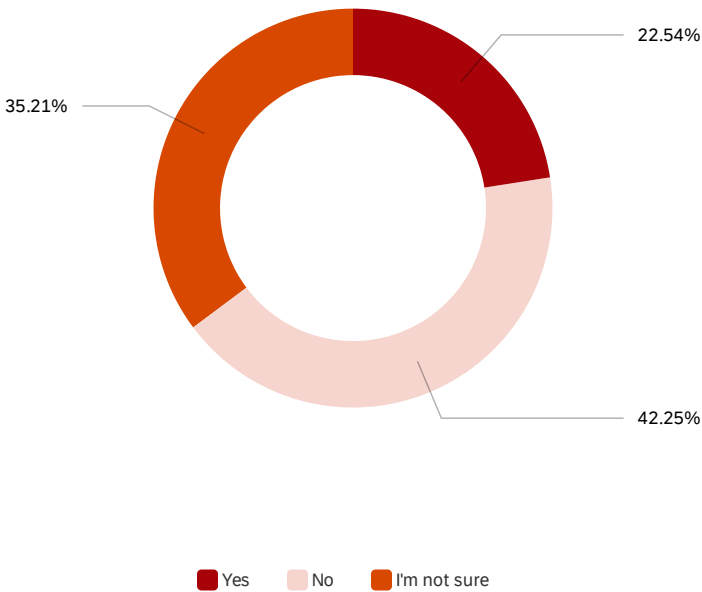
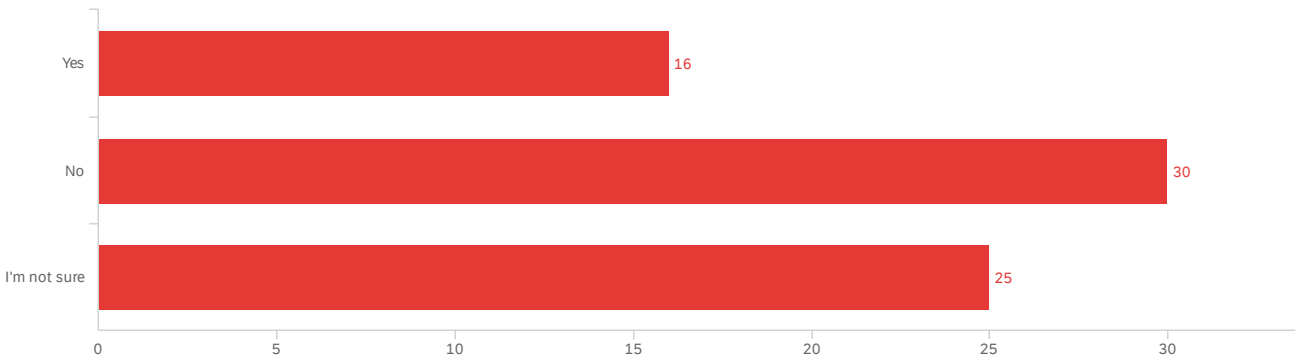
Webinar

Email

weninar

email, facebook (our community seems to rely on facebook for a lot of information)

Q13. Would you go to a cleaner air center for the public during smoke events?



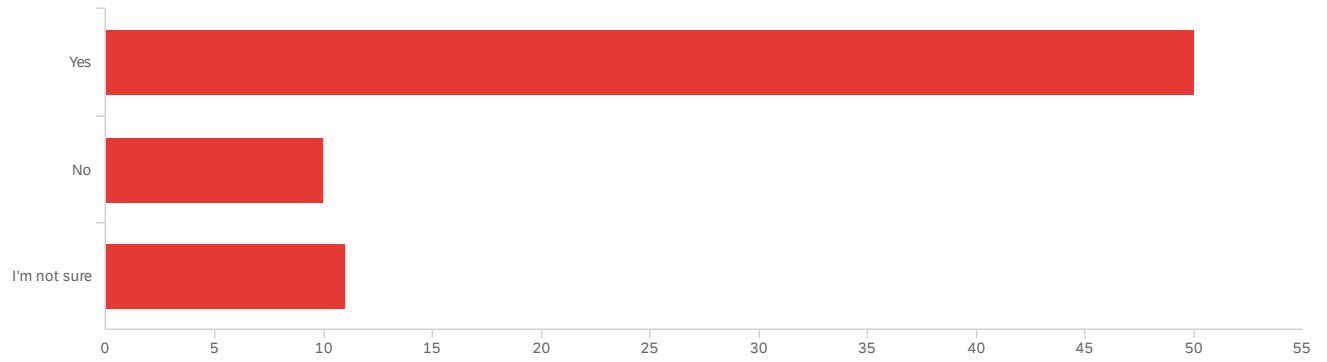
Q14. Please use the space below to tell us why you would not use a cleaner air center.

For instance, "I have an air purifier at home."

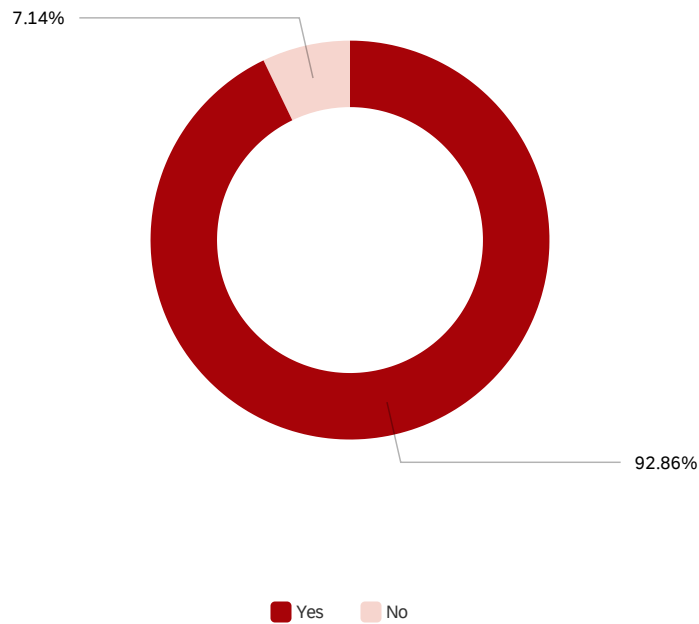
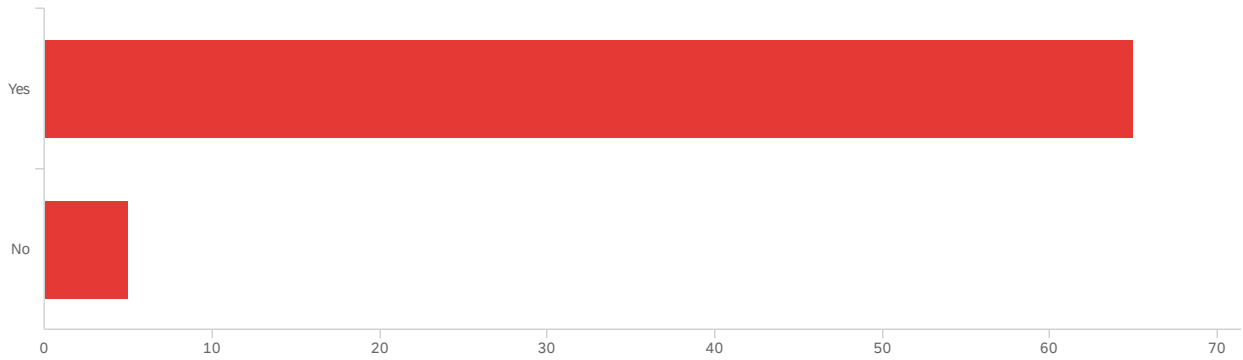
Key Themes and Responses

- **Creating clean air at home**
 - "I have a whole house air filter because of what I went through in the crisis in 2020 or 2021. I was in a drafty 1970's double-wide, and the indoor air was horrible."
 - "I have an air purifier but I support the idea of clean air centers for others."
 - "I have a whole-house air filtration system. But during the crisis a couple of years ago, I was in a drafty old place. No one warned us to close the windows that night."
- **Safety and comfort**
 - "Do not like being around others in closed spaces."
 - "Purifier at home and autoimmune compromised."
 - "Spending time indoors with a bunch of strangers "killing time" does not appeal to me."
 - "Sleeping on a cot next to 200 other people does not sound like fun. BUT, if I knew I would be significantly damaging my lungs, I would consider it."
- **Pets and livestock**
 - "I work at home and also need to be there to care for animals."
 - "It would be a significant distance from my home and we have livestock that need our attention."
 - "I would have gone to a cleaner air center, except that I have a dog, and I assume the dog would not be allowed?"
- **Work responsibilities and inconvenience**
 - "I live at some distance from town so this would not be convenient."
 - "I am too busy to spend time away from work and home."
 - "I work from home. going somewhere would be too much of a hassle."
- **Leaving the area**
 - "I have an air filter at home or I would go to the beach."
 - "Air purifiers at home. We are fortunate to have a family beach cabin to retreat to. Also we have 3 kids and a dog, so indoor public space isn't a ln easy place to hang out."

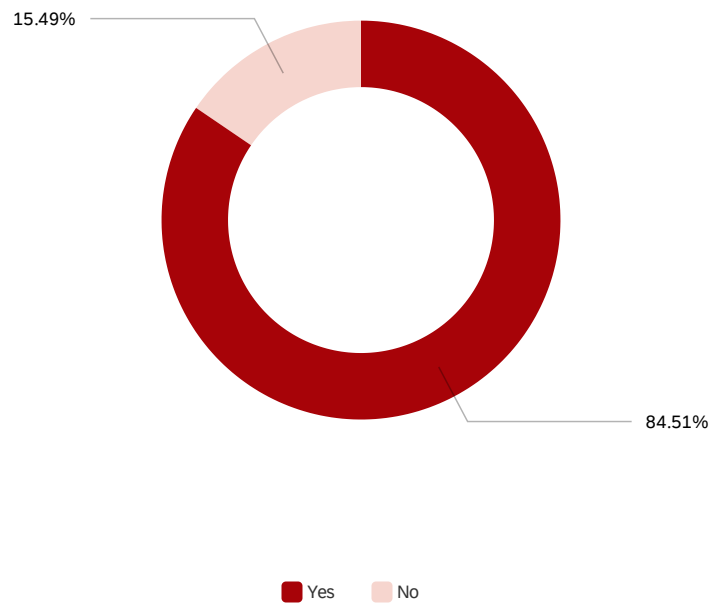
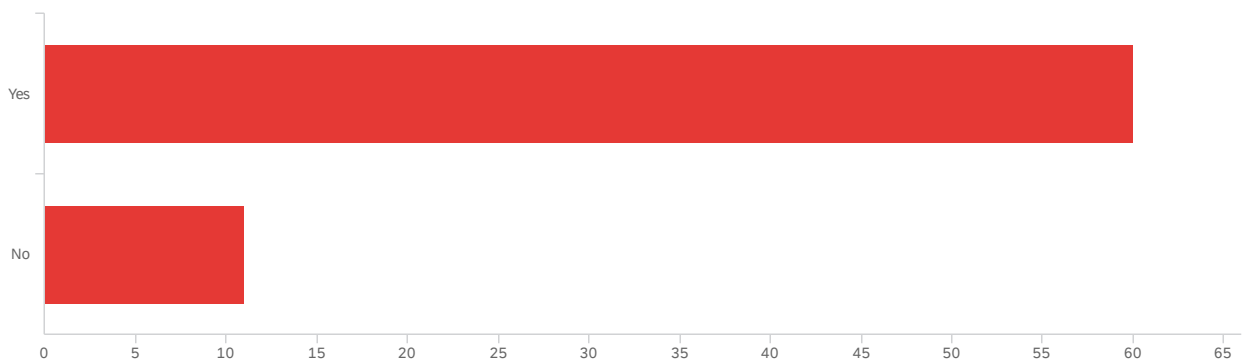
Q15. Are you signed up for your County's "Emergency Alert" or Everbridge emergency communication system?



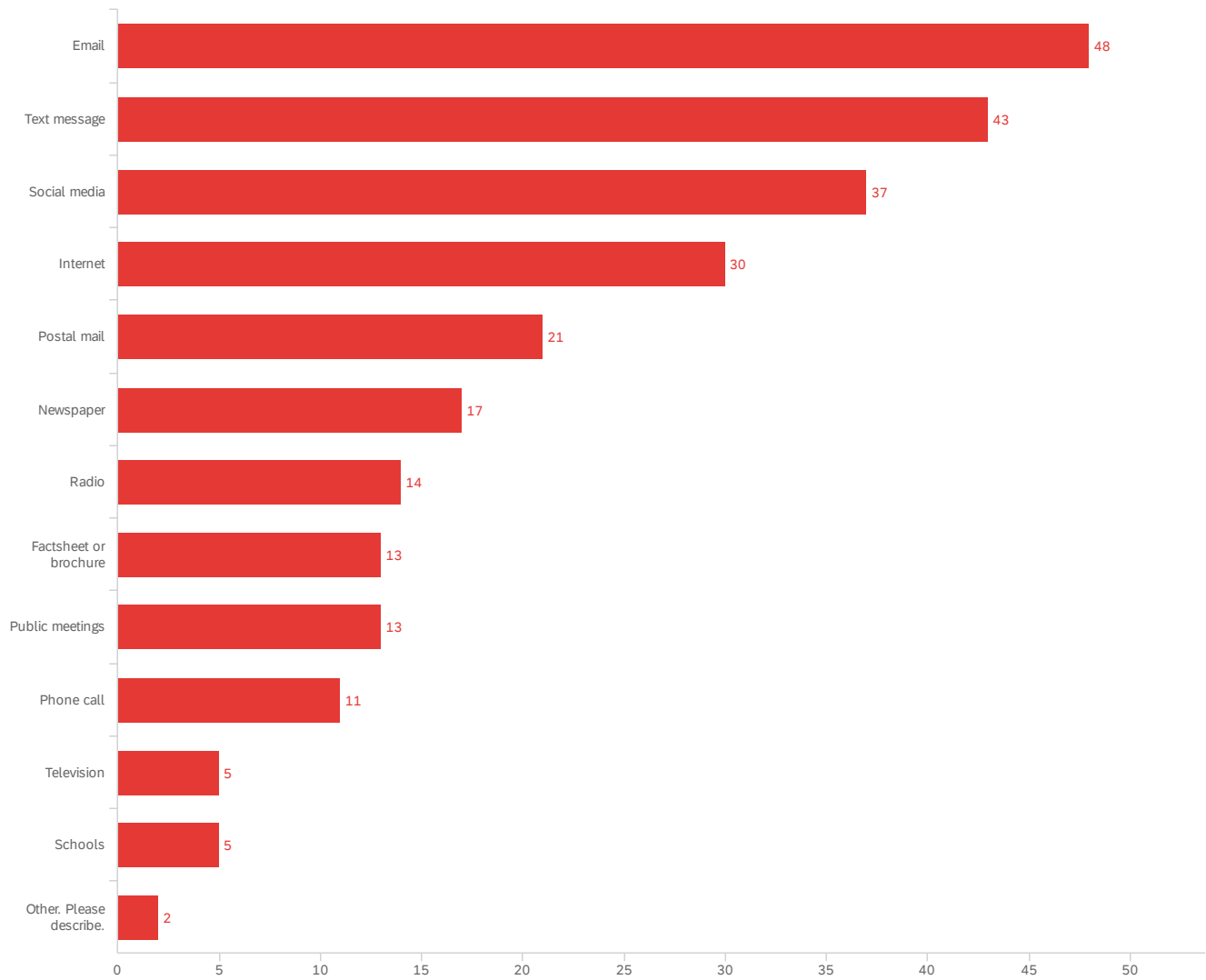
Q16. County “Emergency Alert” or Everbridge emergency communication systems have been used only to notify in an emergency. A smoke event is not considered an emergency. Would you “opt-in” to get a notice about smoke events if your County offered that option?



Q17. Would you like to get notices about prescribed burns? Prescribed burns are when forest managers reduce the amount of fuels in the forest with a controlled fire. This is to lower the chance that catastrophic fires will occur. These burns can only be used outside of fire season during times when the wind direction will carry the smoke away from where people live.



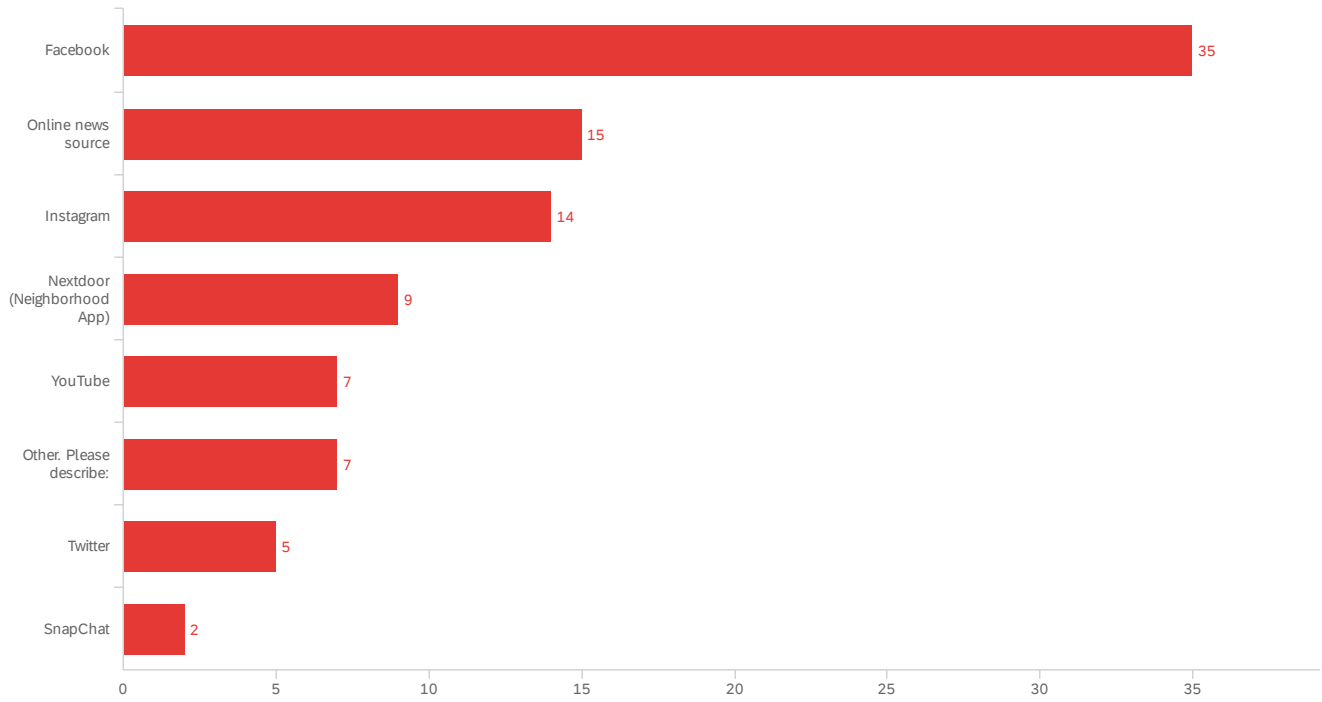
Q18. How do you prefer to get news about community information? Please select all that apply.



Key Themes and Responses From "Other: please describe."

- **Community Health Workers**
- **The library**

Q19. Which online platforms do you get your information from? Please select all that apply.



Other. Please describe:

Radio local

Mastadon

hoodriverweather.info

Facebook

Email newsletters from Gorge news sources.

Columbia gorge news

white-salmon.net

Q20. What else do you want to tell us? Please use the space below to tell us anything else you think we should know about how we can better inform you about the impacts of smoke from wildfires and prescribed fires.

Key Themes and Responses

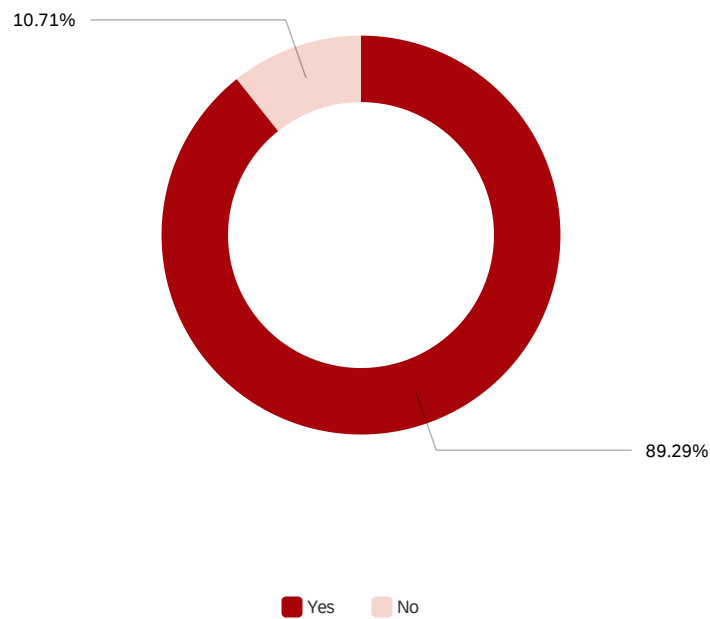
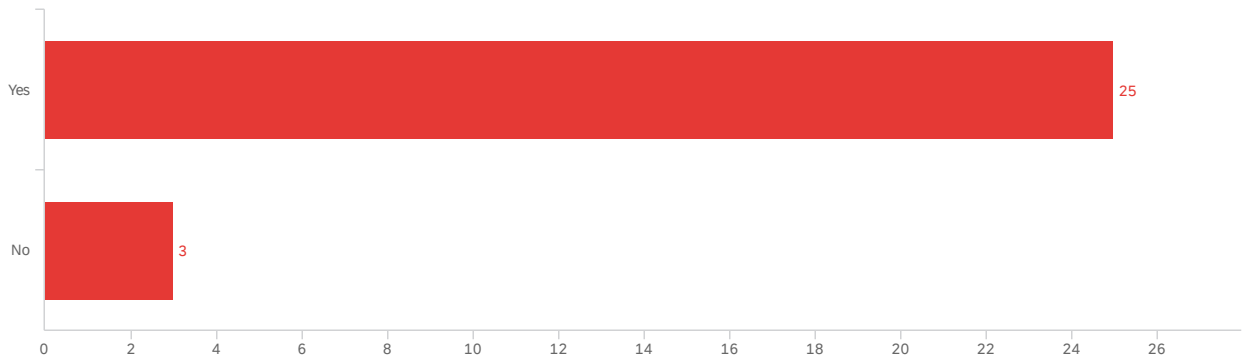
- **Advance notice for smoke forecasts, prescribed burns, and wildfires**
 - "Make sure to let people know before the smoke gets here!"
 - "As someone with chronic asthma and allergies that are impacted by smoke, I appreciate notice of all smoke events, especially a day or two in advance when possible so I can make appropriate plans."
 - "I would really like to know how to find out about nearby wildfires."
 - "We feel pretty well informed. Just need better smoke forecasts. It's hard to know where to travel to to get out of the smoke with the existing forecasts."
 - "perhaps a printed schedule of the planned burns"
 - "Better maps of where burns are occurring. It's often really hard to tell the scope of where the burn is and the area it's impacting."
- **Burn bans**
 - "Slash burns are not generally classified as "prescribed burns" so there is no advance notice of any kind. I would like to them included in your program and in any public alerts, and to be acknowledged as a public health concern."
 - "Please no prescribed fires on inversion days!!!"
 - "Prescribed burns have sometimes occurred during what I would consider fire season. They also occur repeatedly year after year in the same area. Forest Service practices should be reviewed to prevent repeatedly subjecting the same areas to burning smoke 3,4 5 years in a row and doing so in the fall."
 - "Thanks for doing this. I think we need regulations on the timber companies so they can't do prescribed burns when it will create widespread poor air. We had a lot of that this fall from them."
- **Health information**
 - "Worried about long term and cumulative effects."
 - "Best ways to protect pets"
 - "I don't there is a very good public understanding of how the smoke affects people. I see kids out playing in it. Maybe saying something like "at this level ___ it's like smoking 3 cigarettes every 10 min that you are out in the smoke" to help parents quantify the risk"
 - "Know more about long term effects of breathing wildfire smoke and how it affects sensitive populations."
 - "Again, would really like to know the hard science on damage that occurs to our lungs during smoke events, and the results of the damage. e.g (& I'm making this up) 5 hours of exposure to an AQI over 500 will clog 20% of your lung cells, making breathing more difficult for 3 months and making it 10% more likely you will get lung cancer"
- **Word of mouth**
 - "Word of mouth is by far the best form of advertising, so the first thing people do generally is call someone they think might know more than they do. A friend, family member, business owner someone else with the perceived answer or reassurance. My suggestion is to get the information about a website that is current or is live during an event so people can ask questions and interact with authorities that know what is going on. This would also help with false information being spread. If several community members in all the communities are aware of this resource, then the word would spread amongst those that may not otherwise have access to the information."
 - "Lo trabajadores Comunitarios de la salud estan en contacto con la comunidad y tienen la confianza para recibir informacion de ellos." (Translation: Community health workers are in contact with the community and have the confidence to receive information from them.)
- **Avoiding messaging fatigue and miscommunication**
 - "The emergency notification system is appreciated but I feel when it sends information it's repetitive. For example multiple animated calls and texts in a row"
 - "I think prescribed burns are necessary to keep us and our forests safe and healthy. I think proactively communicating w. the community is a good idea, but starting to do more comms all at once will give the impression that we're all the sudden doing more burns, as opposed to all the sudden communicating about them more. I don't want people to wrongly push back on them."
 - "In general people need to be educated to understand the Benefits of prescribed fire."
- **Materials available to the community**
 - "Just hand out mask during smoky fires would help out a lot."
 - "Just please warn people to shut their windows in advance of the smoke event through all means, including the road sign at the foot of the HR Bridge near Dock Grade in White Salmon."
 - "When a smoke event occurs, people dont seem to be prepared ... They ask on social media what they should do and everyone tells them to make a box fan air filter. I know in a few instances that supplies for these have run really low during a smoke event. Perhaps having a surplus of these materials that community members can purchase instead of buying out walmart could help people stay safe. Maybe theres a grant to get funds for this, or discounts for buying in bulk, and then community members can have access to the materials they need and maybe even at a discounted price."

CRP Data for Skamania County

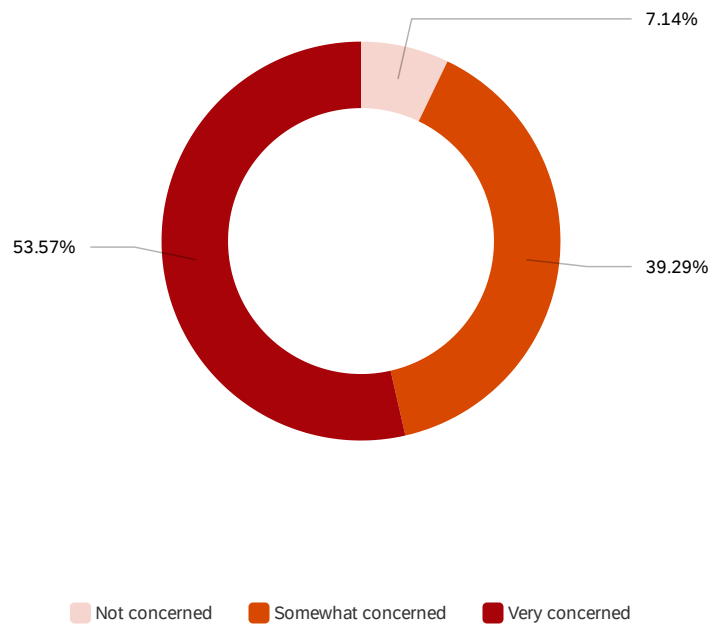
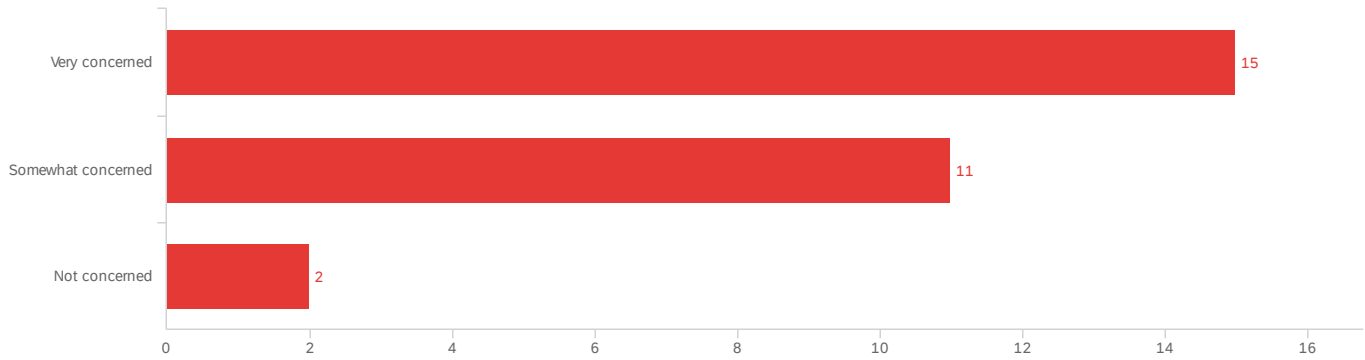
Columbia Gorge Community Response Plan Survey

December 19, 2024 1:05 PM PST

Q5. Do you know about the Air Quality Index (AQI)?

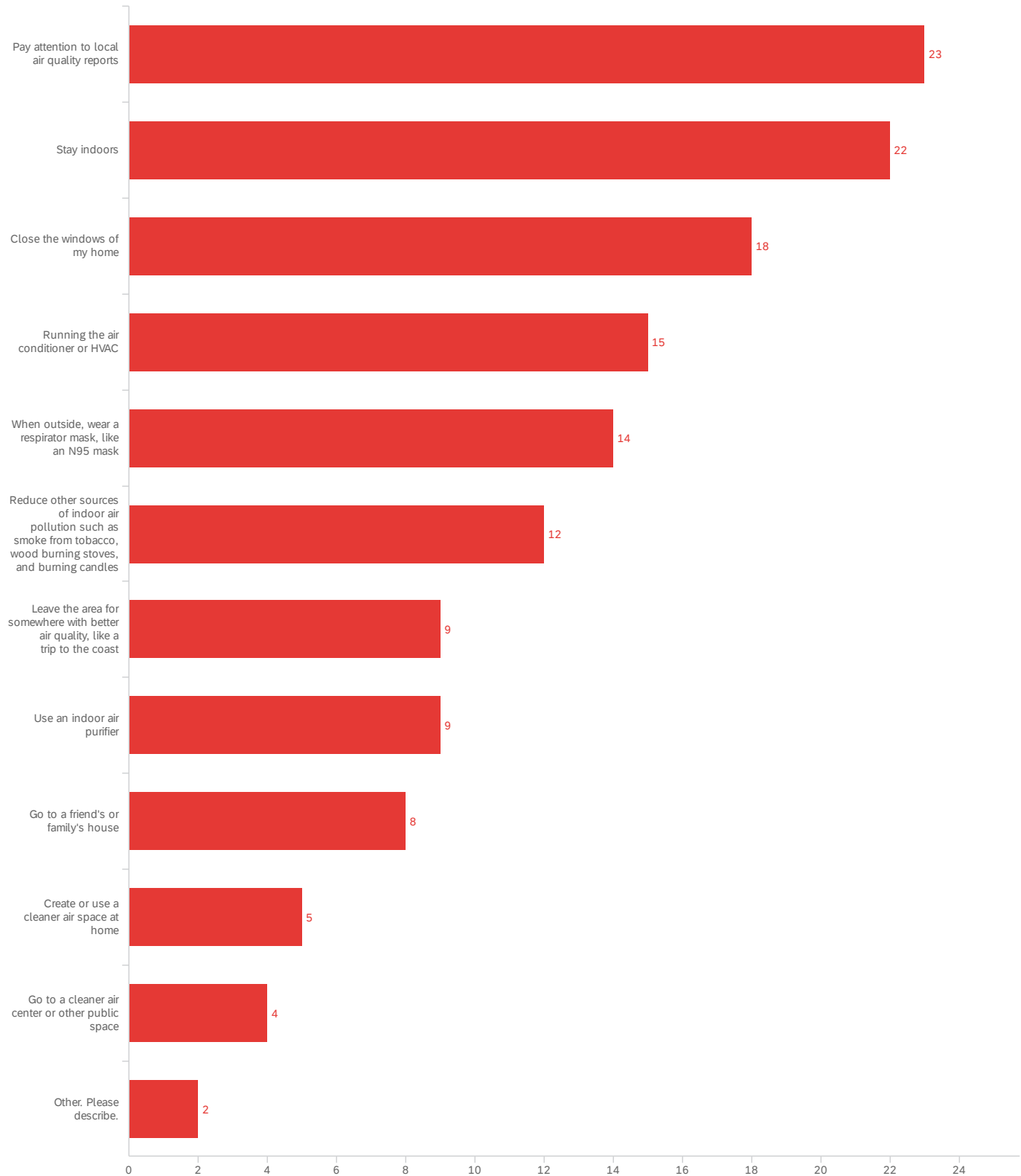


Q6. Please mark how concerned you are about the impact of wildfire smoke on your health during smoke events.



Q7. How do you and the people you live with protect yourselves from a smoke event?

Please select all that apply.

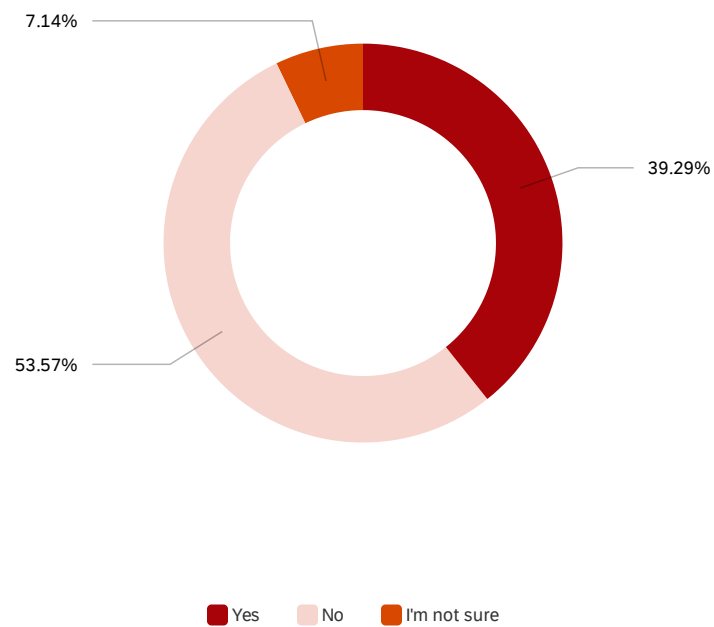
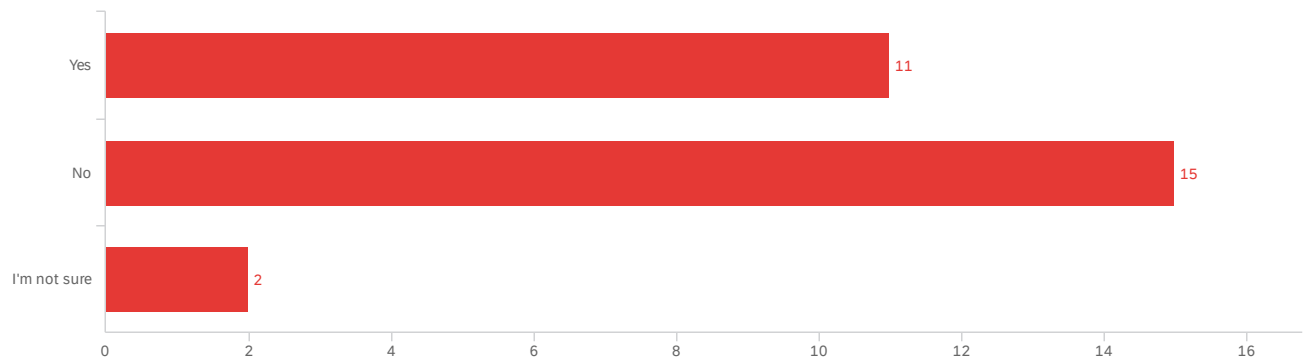


Other. Please describe.

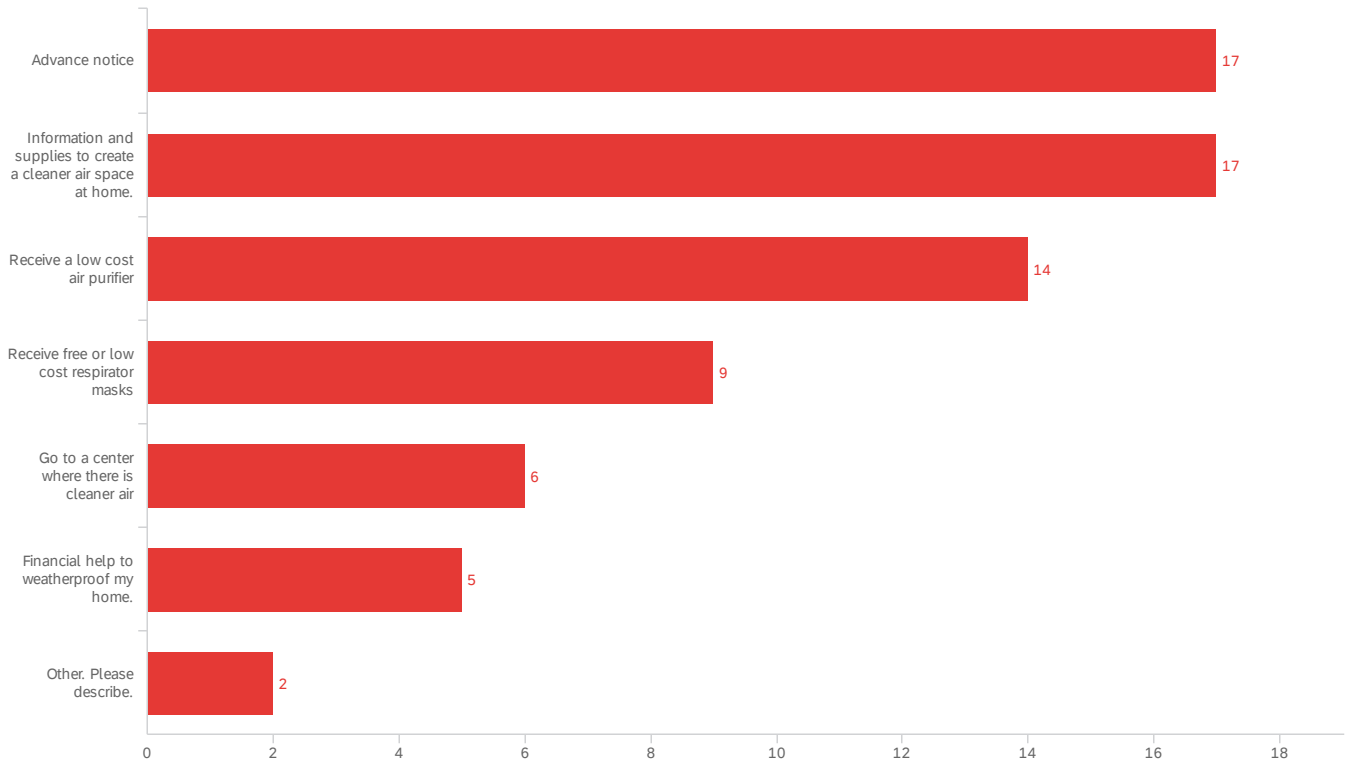
nothing

Do nothing

Q8. Do you have a way to clean or purify the air in your home?



Q9. What would help you to prepare for a smoke event? Please select up to three choices.

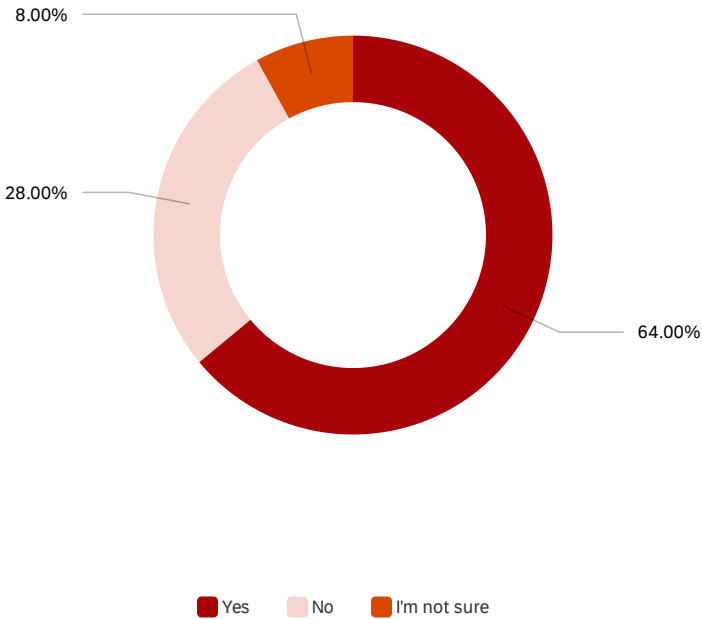
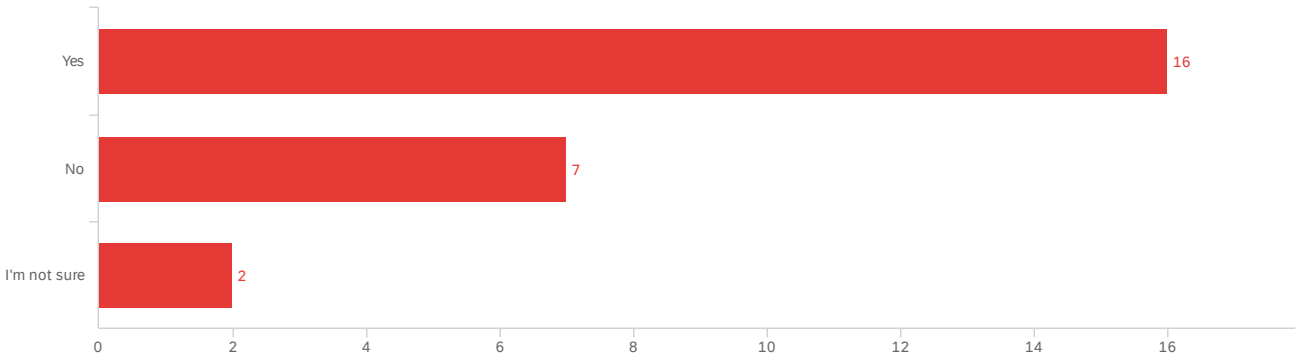


Other. Please describe.

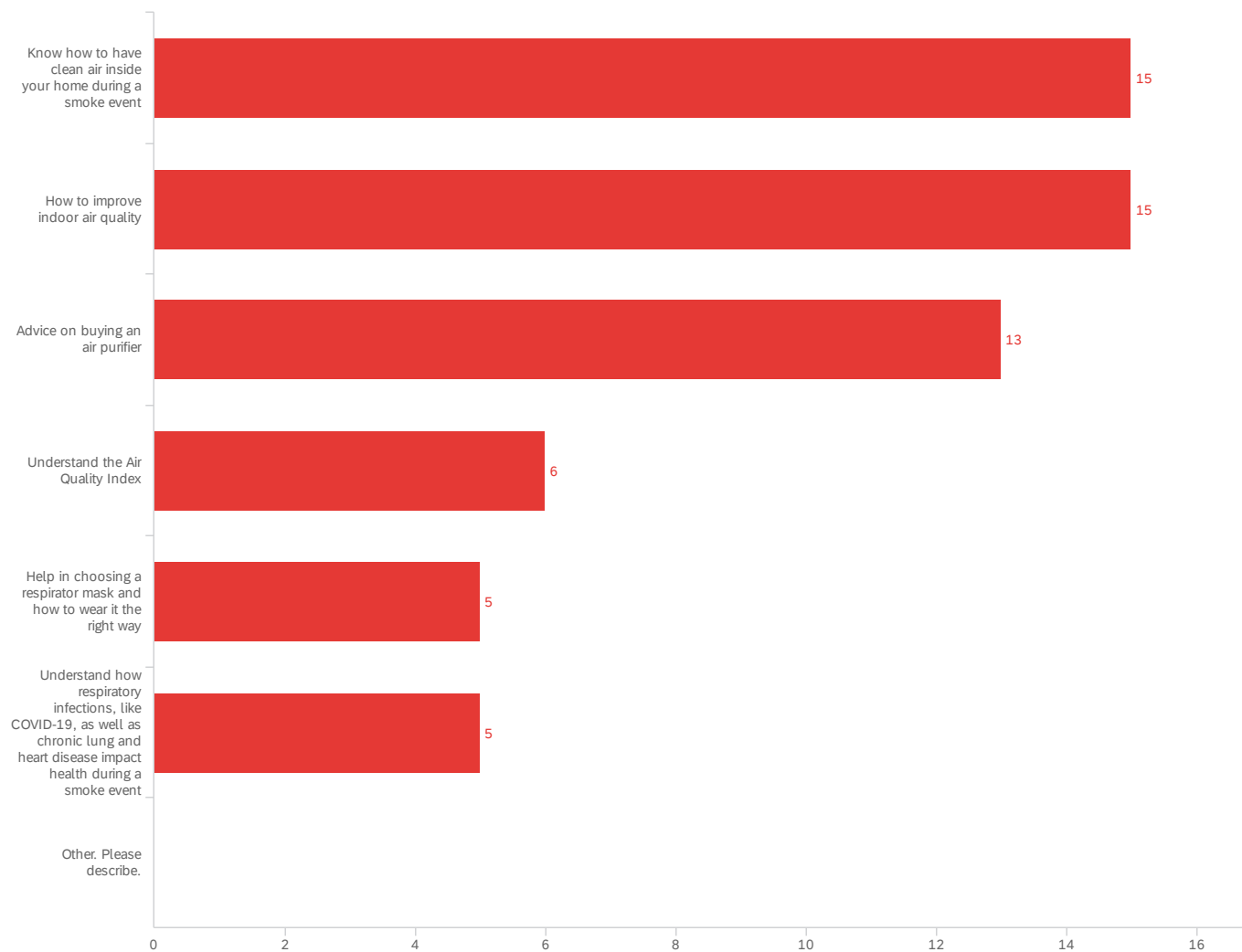
nothing

Do nothing

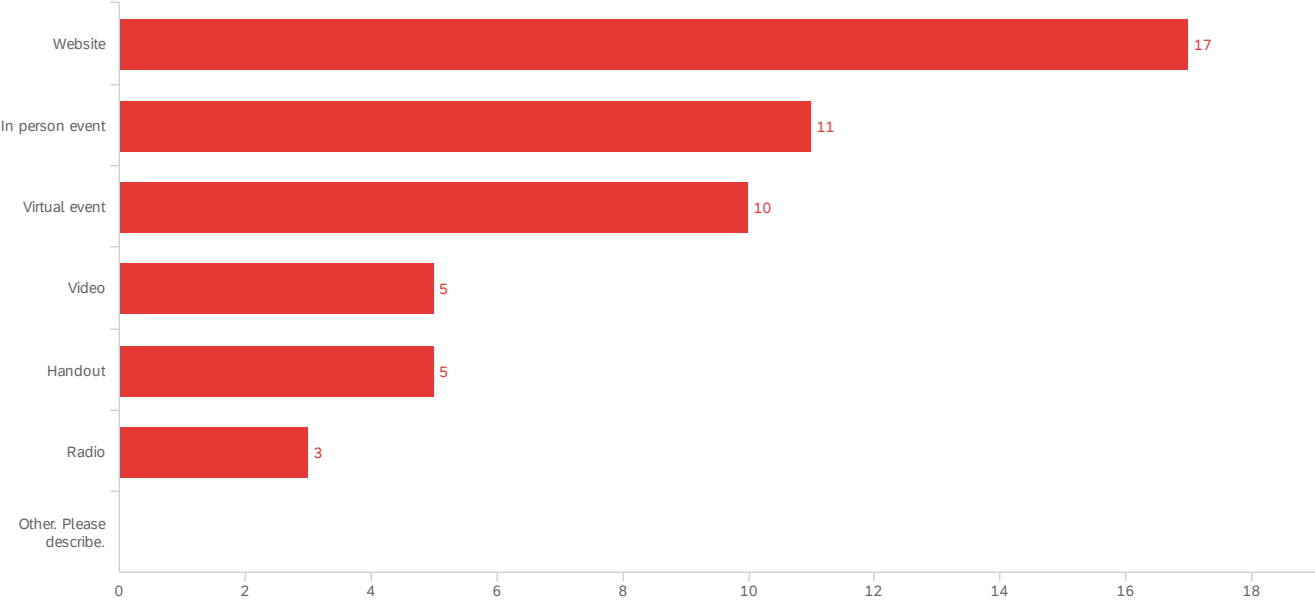
Q10. Would you like more information on ways to protect yourself from smoke?



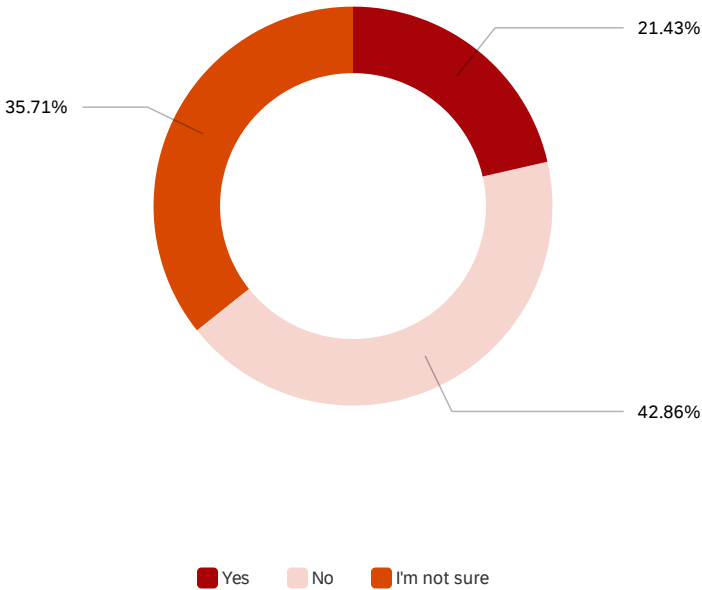
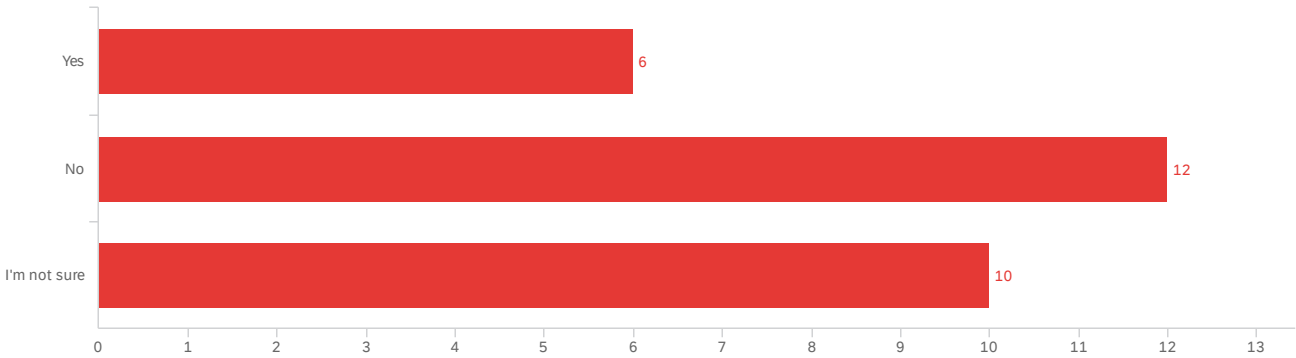
Q12. What topics would you most like to learn about? Please select all that apply.



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Q13. Would you go to a cleaner air center for the public during smoke events?



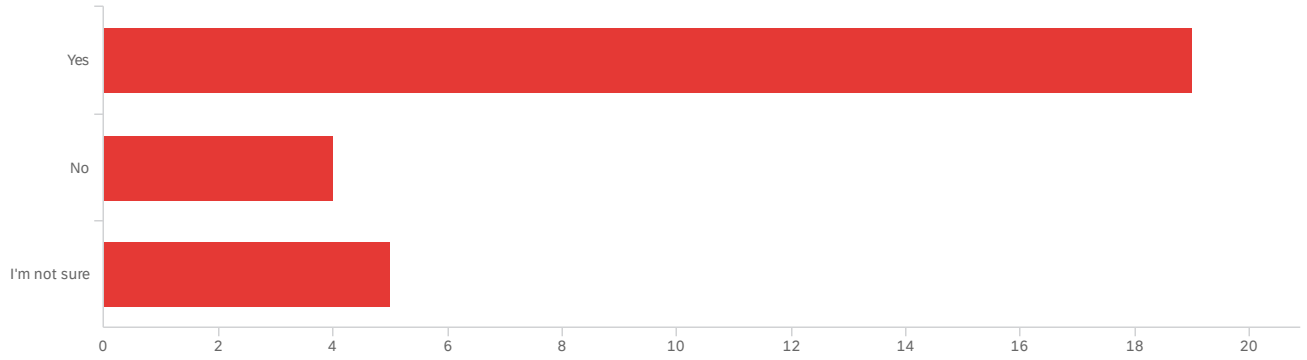
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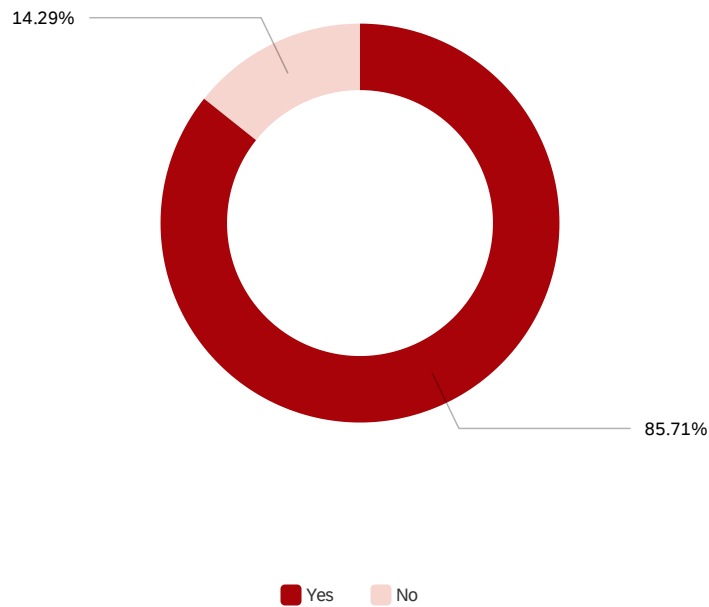
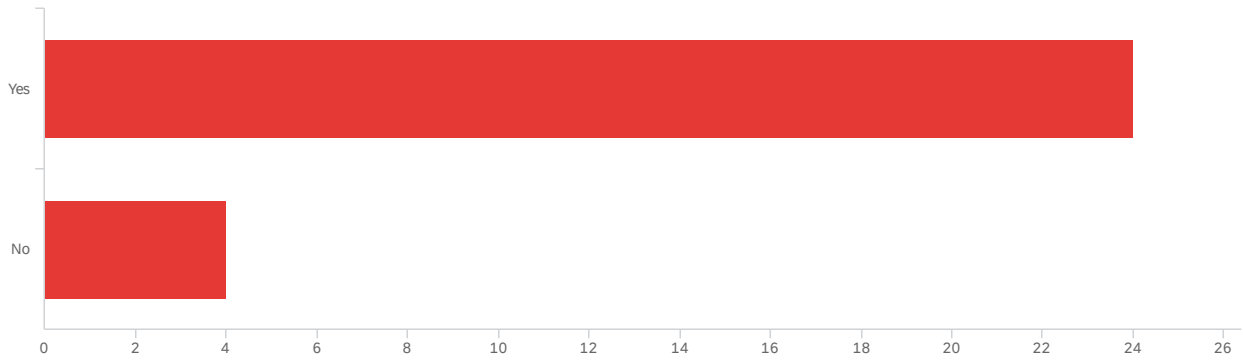
Key Themes and Responses

- **Creating clean air at home**
 - "I have an air purifier at home."
- **Safety and comfort**
 - "With covid and rsv, I avoid crowded spaces. But also, if a smoke event goes on for a month, doing too a community center is really not viable."
 - "I feel more comfortable in my home and I felt I was able to breath ok inside my home when we have had very poor air quality"
- **Family and pets**
 - "I have 2 kids and 3 dogs, I would prefer to stay home then lug everyone and their things around."

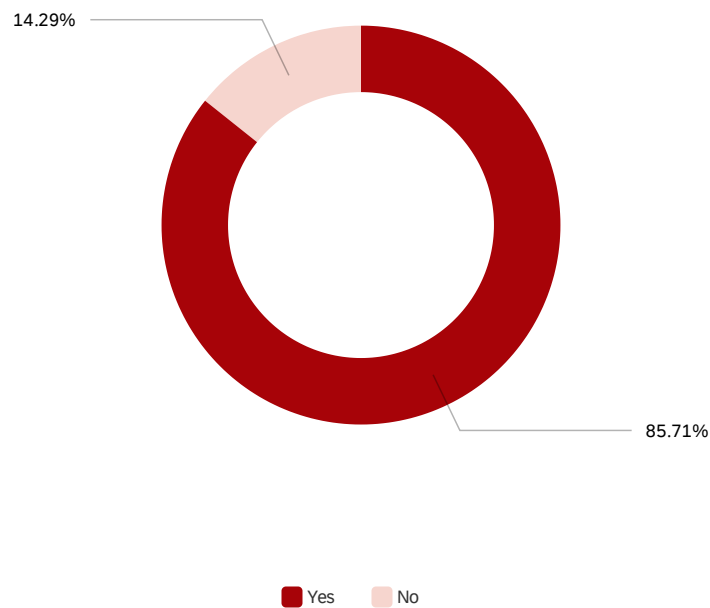
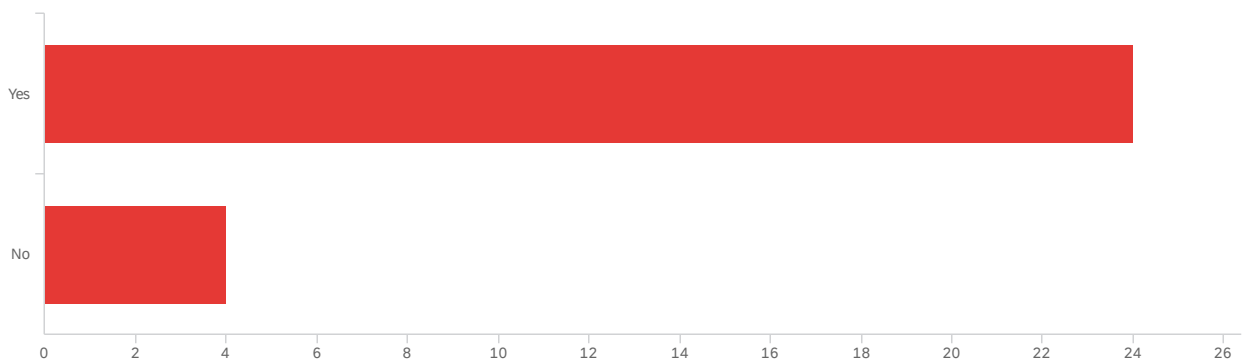
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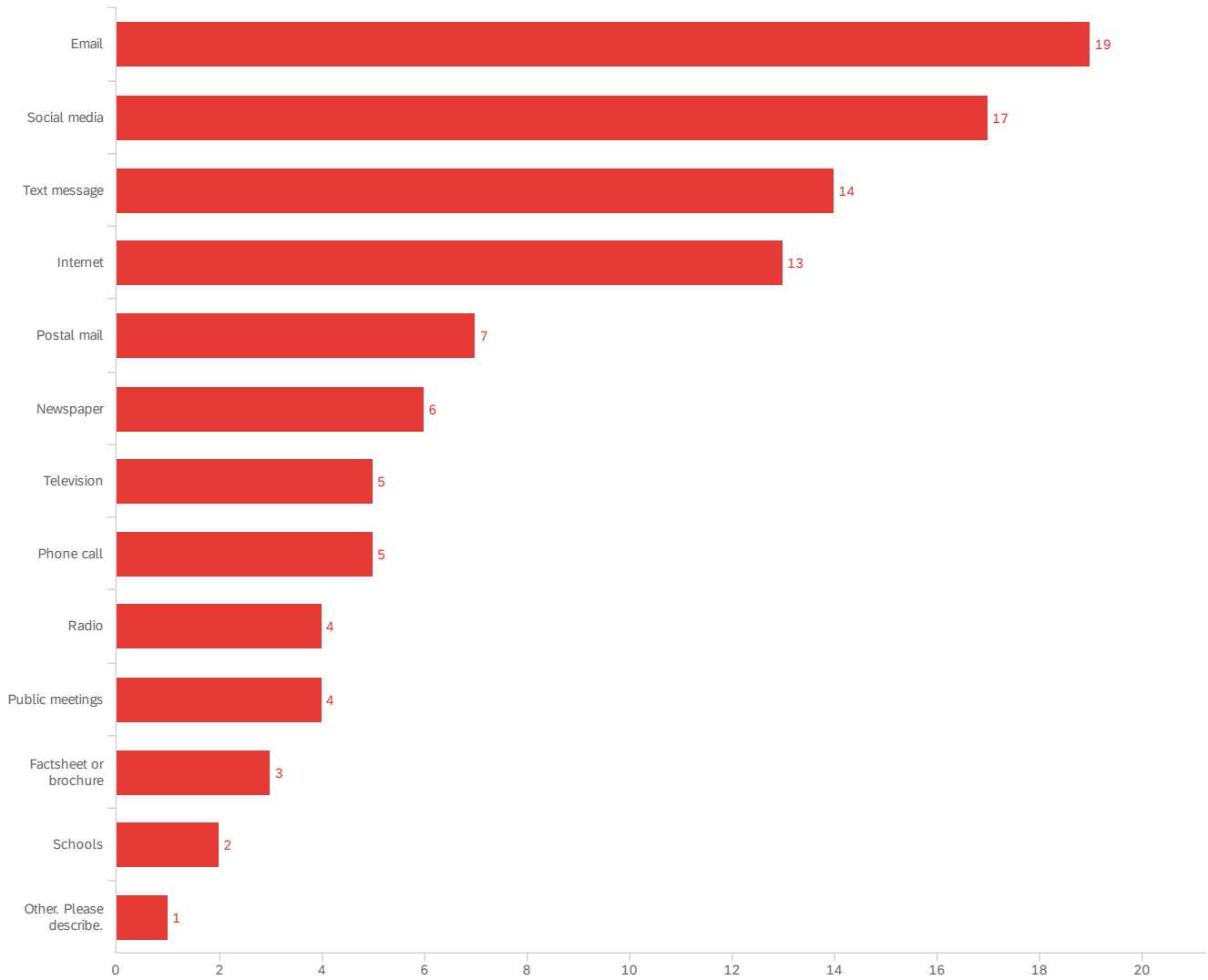
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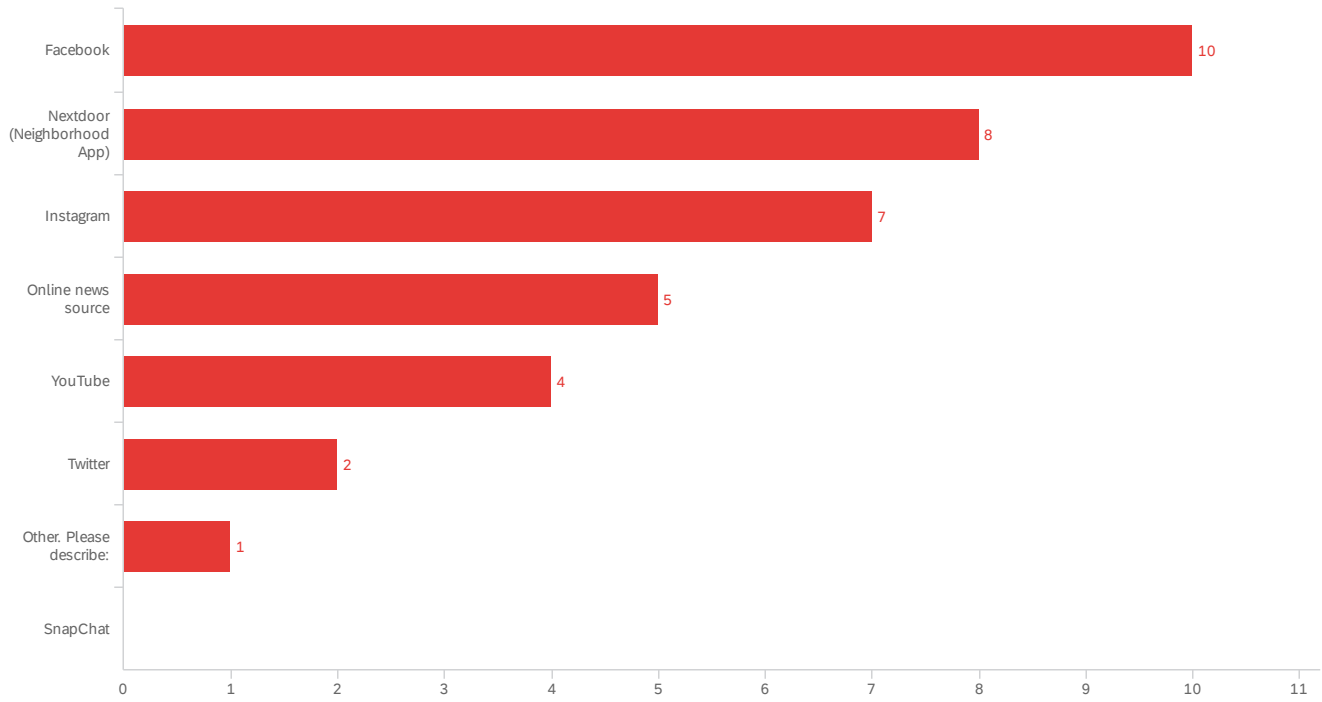
Q18. How do you prefer to get news about community information? Please select all that apply.



Other. Please describe.

i dont get an news

Q19. Which online platforms do you get your information from? Please select all that apply.



Other, Please describe:

Air quality apps

Q20. What else do you want to tell us? Please use the space below to tell us anything else you think we should know about how we can better inform you about the impacts of smoke from wildfires and prescribed fires.

Key Themes and Responses

- **More information**
 - "Most of our news comes from news stations in Portland. Would love expanded coverage from Portland or even Vancouver."
 - "I would like to see detailed smoke maps for the Gorge: lateral, longitudinal, and by elevation."
- **Multi-channel communication**
 - "I am informed about happenings that impact our community by radio, Facebook, Email, Hood River News"
- **Concern for children, seniors, and pets**
 - "When I should be most concerned for children, seniors, those with health conditions, and pets in smoke."
 - "Concern for pets."

End of Report