Appendix II. Detailed Survey Methods and Results

In July 2023, we piloted the survey via an anonymous email link to Oakridge Air "ambassadors" and the South Willamette Solutions Board Members/Southern Willamette Forest Collaborative Steering Committee (n=8), a group of community volunteers who help extend the reach and impact of Oakridge Air communications and programs. In September 2023, immediately following wildfire season, we distributed a link to subscribers of Oakridge Air's text alert service that is managed by Lane Regional Protection Agency (LRAPA). As of May 2024, there are currently 913 subscribers. Oakridge Air also promoted the survey through their e-newsletter, which had 1,094 subscribers as of January 2023. In this initial distribution, a link to the survey was also posted on Oakridge Air's Facebook page. However, we closed this initial distribution receiving nearly 600 responses in less than six hours. We later determined that most of the 600 responses (see "Response Validation" section below) were internet "robots" using the Facebook link to attempt to fraudulently receive an electronic gift card. This did not affect the survey incentive of gift cards since those were only offered in physical form and thus required a valid mailing address within commuting distance of Oakridge. We added additional screening questions to prevent internet robot responses and reopened the survey in October, including a reCAPTCHA for respondents to check "I'm not a robot" and another that asked respondents to answer a question, "What's this survey about? (We are just making sure you are a real person actually reading these questions)." Refer to "Response Validation" section below for more information. This plan was approved by the University of Oregon's Institutional Review Board, study #00000488. The electronic version of the survey was open for responses from October 18th through January 8th.

As an incentive, survey takers were offered a $25 gift card to their choice to either the local supermarket (Rays Food Place) or a local restaurant (3 Legged Crane Pub and Brewhouse). Gift cards were limited to one per household. To receive a gift card, electronic survey takers were directed to click a link at the end of the survey, "Please enter your information in our Google Form here to choose your $25 gift card..." and to enter the survey code "dogs" in the Google Form. In the Google Form, they entered the survey code, their physical mailing address, and select their gift card preference. To prevent "bots" from filling out this form, we entered a question: "What will you buy with your gift card? This is not a real question. Select the answer that says forty-five and the UO Mascot." We then mailed physical gift cards to respondents who provided a mailing address.

Paper Survey Version: To reach populations that may not have access to a computer or smart phone, we designed a paper version of the survey and made it available at five public locations in Oakridge (Library, Pharmacy, Orchid Health, City Hall, and Oakridge Air's office). Each of these locations had a confidential drop box ("Blue Box") for depositing completed surveys, which had been used by Oakridge Air for surveys they had distributed in the past. We also included a QR code on the outside of the Blue Box as an additional option to take the survey on a smart phone. To receive a gift card, we included a paper form at the end of the survey for respondents to write-in their physical mailing address and place a checkmark next to their gift card preference, and instructed them on the form to drop off their completed survey and gift card form in the provided envelope at one of the "Blue Boxes". Paper surveys were distributed November 30, 2023; and collected every two to three weeks with final collection on January 12, 2024.

Response Validation

We considered responses to be valid given the following criteria:

1. **Response was 100 percent complete.** Incomplete responses hinder the ability to compare across responses to systematically analyze the data.

2. **Respondent relationship to Oakridge-Westfir.** This was a filtering question. If respondents selected "I do not live or work in Oakridge-Westfir" they could not complete the survey.
3. **ReCAPTCHA Score was greater than 0.8.** ReCAPTCHA scores are a measure of the likelihood that the respondent is an actual human as opposed to an internet "bot" or automated software program designed to accomplish specific, often fraudulent tasks.
4. **Response took longer than 5 minutes to complete.** We considered responses complete in less than 5 minutes to be invalid based on the fact that most humans would not be able to fully comprehend and accurately answer all of the questions in the survey.
5. **Response was not a duplicate.** We considered duplicate responses invalid due to the probability that the respondent was intending to defraud the survey for financial gain.
6. **Response Latitude between 43.00 and 44.5, and Longitude less than 122.4431.** We considered that responses coming from outside of commuting distance to Oakridge (based on respondent IP address locations) were likely to be fraudulent since the respondent was less likely to live or work in Oakridge. Although we acknowledge that using this criterion may have eliminated a small number of valid responses, we did not think that exceptions, such as respondents with seasonal residency or on vacation would be very numerous.
7. **Response correctly answered "What's this survey about" question.** In our second electronic distribution, we added a question that required the respondent to indicate that they were paying attention as they responded in contrast to simply clicking through the answers. Our question asked what the survey was about and informed the respondent that "we are just making sure you're a real person actually reading these questions". The correct answer was "air quality" whereas incorrect answers were "Blue Boxes", "skiing", "cats", "boats", "$25 gift cards", or "none of the above".

Analysis

We tallied responses for each question and provide these results in percentages below. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal place. Wherever possible we present the percentage of total respondents such that if a respondent left a question un-answered they are nevertheless counted as part of the total. However, in cases where we report results from sub-questions that were dependent on how respondents answered a previous question, we present percentages of the subpopulation who were shown that sub-question. These instances are clearly spelled out below.

We also conducted statistical analysis of the following respondent subsets:

1. People 55 years or older;
2. People who responded that they were highly or somewhat concerned about air quality in Oakridge-Westfir; and
3. People who identified themselves or someone in their household as having non-age- or work-related conditions classed by the Oregon Health Authority as being more sensitive to poor air quality. This latter group included pregnant people, people with asthma or another respiratory disease, people with cardiovascular diseases, and people with other conditions not listed.[1]

We used binary logistic regression analysis to individually assess the statistical likelihood that these groups answered questions differently that respondents not included in those groups. So, for example, we compared how older people (55 years old or older) answered questions in comparison to younger

[1] Refer to Oregon Health Authority's "Health threats from wildfire smoke": https://www.oregon.gov/oha/ph/preparedness/prepare/pages/prepareforwildfire.aspx.

people (under 55 years of age). Similarly, we compared the responses of people who reported that they were highly or somewhat concerned about air quality in Oakridge-Westfir to the responses of people who were either uncertain about their concern or were unconcerned with air quality. We assessed statistical significance at the p-value of less than 0.05.

Results

Our validated electronic and paper survey responses totaled 214. In the original launch of the survey, we received a total of 778 responses from two different electronic recruitments (n=605 and 157 respectively) and the paper survey distribution (n=36). The majority of responses from the initial survey distribution were determined to be internet bots responding to a link posted on Oakridge Air's Facebook page. However, after inspecting these responses, we were able to retain 85 valid responses (out of 605) from this initial recruitment. Although our confidence in our second electronic distribution was much higher, we nevertheless subjected them to the same data filtering standards applied to the first round. This resulted in a total of 178 validated electronic responses. We accepted all 36 responses from the paper survey distribution.

Age

Nearly half of respondents (48%) were 65 and older, and 44 percent were between the ages of 35 and 64. Only 9 percent were between the ages of 18-34. Refer to Table 1 for more detail.

Table 1. Respondents' self-reported age.

SELECTION	COUNT	PERCENT
18 – 24 years old	2	0.9%
25 – 34 years old	16	8%
35 – 44 years old	26	12%
45 – 54 years old	36	17%
55 – 64 years old	32	15%
65 – 74 years old	77	36%
75 – 84 years old	24	11%
85 or older	1	0.5%

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

Gender Identity

A majority of respondents (77%) identified as women; 22 percent identified as men; and 2 percent selected non-binary/non-conforming, typed in their own self-description, or preferred to not answer.

Ethnicity

Ethnicity can encompass multiple identities; therefore, respondents could select more than one response. Most respondents identified as white (89%), while 14 percent selected other options as noted in Table 2.

*Table 2. Respondents' self-reported ethnicity.**

SELECTION	COUNT	PERCENT
White	191	89%
Prefer not to answer	12	6%
Native American or American Indian or Alaskan Native	7	3.3%
Black or African American	4	1.9%
Hispanic or Latino/a/x	4	1.9%
Native Hawaiian or Pacific Islander	3	1.4%
Asian or Asian American	0	0%

**Respondents could select more than one choice; therefore, percent response total will not add up to 100%. We calculated the percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

Preferred Spoken Language

A majority of respondents (98%) preferred English as their spoken language, while 0.5 percent preferred Spanish, and another 0.5 percent shared that they were bilingual in English and Spanish. The remaining one percent (n=2) selected "other", but did not enter a preferred spoken language.

Household Composition

Over half of respondents (59%) reported that their households included adults over the age of 65. Nearly half of respondents reported that their households' included individuals with asthma or other respiratory diseases (46%) and nearly one quarter reported their households' included individuals with cardiovascular disease (24%). Refer to Table 3 for more detail.

*Table 3. Respondents' self-reported smoke sensitive individuals in their household.**

SELECTION	COUNT	PERCENT
Older adult(s), > 65 years of age	126	59%
Individuals with asthma and/or other respiratory diseases	98	46%
Individuals with cardiovascular disease	52	24%
Outdoor workers	45	21%
Children, <18 years of age	41	19%
Others considered at high risk	18	8%
None of these apply	12	6%
Individuals who are pregnant	3	1.4%

**Respondents could select more than one choice; therefore, percent response total will not add up to 100%. We calculated the percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

Residency

Nearly all respondents (94%) reported that they lived full time in Oakridge-Westfir. Refer to Table 4 for more detail. Most respondents (41%) have lived in Oakridge-Westfir for ten years or less, followed by 29 percent reporting that they have lived in the area for over 30 years. Refer to Table 5 for more detail.

Table 4. Respondents' self-reported experience of living and/or working in Oakridge-Westfir.

STATEMENT	COUNT	PERCENT
Live full-time in Oakridge-Westfir.	201	94%
Mostly live in Oakridge-Westfir.	6	2.8%
Other.	6	2.8%
Own or rent a second home in Oakridge-Westfir.	1	0.5%

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

*Table 5. Respondents' self-reported years living in Oakridge-Westfir.**

SELECTION	COUNT	PERCENT
0 to 10 years	88	41%
11 to 20 years	42	20%
21 to 30 years	19	9%
Over 30 years	63	29%

**Two respondents did not answer this question; therefore, count responses will not add up to 214. We calculated percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

Air Quality: Experiences and Concerns

Over half of the survey respondents (57%) rated air quality as "Sometimes Good: The air quality is sometimes clean and healthy and sometimes polluted and unhealthy." Some respondents (33%) rated air quality as "Good: The air quality is clean and healthy most of the time." Refer to Table 6 for more detail. Additionally, 40 percent stated that they were "highly concerned" about air quality in their community, while 46 percent were "somewhat concerned." Refer to Table 7 for more detail.

Table 6. Respondents' self-rating of air quality in their community of Oakridge-Westfir.

STATEMENT	COUNT	PERCENT
Very good - My community has some of the best air quality in the state.	4	1.9%
Good - The air quality is clean and healthy most of the time.	70	33%
Sometimes good - The air quality is sometimes clean and healthy and sometimes polluted and unhealthy.	122	57%
Poor - The air quality is polluted and unhealthy most of the time.	6	2.8%
Very poor - My community has some of the worst air quality in the state.	12	6%

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

Table 7. Respondents' self-reported level of concern about air quality in their community of Oakridge-Westfir.

SELECTION	COUNT	PERCENT
Highly concerned	85	40%
Neither concerned nor unconcerned	21	10%
Somewhat unconcerned	7	3.3%
Completely unconcerned	2	0.9%
Somewhat concerned	99	46%

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

We also asked respondents whether the 2022 Cedar Creek Fire changed their concerns about air quality in their community. Most respondents (71%) shared that it greatly increased their concerns, while 17 percent responded that they were slightly more concerned. Refer to Table 8 for more detail.

Table 8. Respondents' self-reported changes in level of concerns about air quality following the 2022 Cedar Creek fire.

STATEMENT	COUNT	PERCENT
It greatly increased my concerns.	152	71%
It slightly increased my concerns.	36	17%
It neither increased nor decreased my concerns.	21	10%
It slightly decreased my concerns.	1	0.5%
Unsure.	4	1.9%

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

Lastly, we asked participants to rank their concerns for different sources of smoke. The scale ranged from 0 to 10; with 0 defined as "unconcerned", 5 as "unsure", and 10 as "very concerned." For respondents that selected "other" (n=10), responses ranged from: neighbors burning toxic materials and/or trash (n=5); unhoused using fire outdoors for heating (n=4); smoke from locations outside of Oakridge (n=2); exhaust from highway/train/vehicle idling (n=2); and industrial biomass plants (n=2). Refer to Table 9 for more detail.

Table 9. Respondents' self-reported concern level by smoke source (total n=214).

	CONCERN LEVEL										
	0	1	2	3	4	5	6	7	8	9	10
Smoke source	Unconcerned					Unsure			Concerned		
Backyard burning	33% (n=70)					30% (n=64)			37% (n=80)		
Prescribed fires	26% (n=56)					32% (n=68			42% (n=90)		
Woodstoves	27% (n=57)					26% (n=56)			47% (n=101		
Wildfire	0.05% (n=1)					2.5% (n=6)			97% (n=207)		
Other	1.9% (n=4)					0.9% (n=2)			8% (n=17)		

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

Seasons

Nearly all respondents (93%) were concerned about air quality during the summer months. Respondents were least concerned with smoke during the spring (11%). Refer to Table 10 for more detail.

*Table 10. Respondents' self-reported concerns for air quality by season.**

SEASON	COUNT	PERCENT
Summer	198	93%
Fall	75	35%
Winter	70	33%
Spring	24	11%

**Respondents could select more than one choice; therefore, percent response total will not add up to 100%. We calculated the percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

Health Impacts

Most respondents (78%) believed that smoke and long-term exposure to smoke poses a risk for all people. Only eight respondents disagreed. We asked respondents if anyone in their household had experienced health impacts from poor air quality. Refer to Table 11 for more detail.

Table 11. Respondents' self-reported perception of smoke.

STATEMENT	COUNT	PERCENT
Smoke can be a risk for all people, especially with long term exposure.	167	78%
Smoke is a risk for many people with a wide variety of health conditions.	37	17%
Smoke is just a temporary annoyance.	5	2.3%
Smoke is only a risk for people with serious health conditions.	3	1.4%
I don't know	2	0.9%

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

Additionally, we asked respondents to choose from a list of health effects about what symptoms they may have experienced from poor air quality. The three most common symptoms selected were: irritated sinuses and/or runny nose (71%), coughing (64%), headaches and/or migraines (61%). Refer to Table 12 for more detail.

*Table 12. Respondents' self-reported health impacts from poor air quality.**

SELECTION	COUNT	PERCENT
Irritated sinuses / runny nose	153	71%
Coughing	138	64%
Headaches / migraines	130	61%
Wheezing / shortness of breath	102	48%
Feeling more tired than usual	101	47%
Trouble breathing normally	80	37%
Other	30	14%
I don't know	5	2.3%

**Respondents could select more than one choice; therefore, percent response total will not add up to 100%. We calculated the percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

For respondents that selected "other" (n=30), responses can be categorized into the following:

- Exacerbation of current health conditions (asthma, COPD, Raynaud's syndrome, lung cancer, frequent need for oxygen, increased use of inhaler). (n = 8)
- Ear infection, sore throat; burning, irritation, and redness of the eyes. (n=7)
- Psychological distress (depression, anxiety, "cabin fever", feeling "locked in"). (n=8)
- Abdominal (digestive issues, nausea). (n=2)
- Pets coughing. (n=1)
- Other (fatigue, vertigo, dizziness, heart palpitations, skin rash). (n=4)

Indoors: Changes to Plans and/or Behaviors

We asked respondents if they ever changed their behaviors and/or plans because of poor air quality, such as during the 2022 Cedar Creek Fire. Most (94%) responded that they adjusted their actions. Refer to Table 13 for more detail.

Table 13. Respondents' self-reported changes to behaviors and/or plans due to poor air quality.

SELECTION	COUNT	PERCENT
Yes	202	94%
No	9	4.2%
Unsure	3	1.4%

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

For respondents that selected “yes” or “unsure”, we asked them to select what actions they took while indoors and outdoors during poor air quality. The top three indoor behavioral changes taken included: using one or more plug-in air purifiers (90%), keeping windows and doors shut as much as possible (86%), and going to a cleaner air space (23%). Refer to Table 14 for more detail.

*Table 14. Respondents’ self-reported indoor adaptations to poor air quality.**

SELECTION	COUNT	PERCENT
Used one or more plug-in air filters.	193	90%
Kept windows and doors shut as much as possible.	184	86%
Went to a cleaner air space.	50	23%
Used an N-95 or KN-95 mask or respirator indoors.	37	17%
Used a special air filter in home heating / AC system.	34	16%
Used a home-made / DIY air purifier (e.g., box fan with an attached “HEPA” air filter).	18	8%
Other.	13	6%
Used another type of mask indoors.	12	6%

**Respondents could select more than one choice; therefore, percent response total will not add up to 100%. We calculated the percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

Of the 90 percent of respondents who reported using a plug-in air purifier, nearly all (98%) used a HEPA air purifier, while only 2.3 percent stated that they used a non-HEPA certified air purifier. Refer to Table 15 for more detail. Some respondents that selected “other” referenced leaving town for better air quality. For example, “I left town, twice in September last year for several days and would have stayed away longer if I'd had the money...”

*Table 15. Respondents’ self-reported plug-in air purifier used.**

STATEMENT	COUNT	PERCENT
I used one distributed by Oakridge Air (these were all “HEPA” purifiers).	170	79%
I used a high efficiency particulate air purifier (“HEPA”).	40	19%
My heating or AC system air filter was a “MERV 13” or greater.	8	3.7%
I don’t know.	7	3.3%
I used a non-HEPA certified air purifier.	5	2.3%

**Respondents could select more than one choice; therefore, percent response total will not add up to 100%. We calculated the percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

Outdoors: Changes to Plans and/or Behaviors

We asked respondents if they adopted any precautions for outdoor activities during poor air quality. The top three outdoor behavioral changes included: spending less time doing usual outdoor activities (e.g., dog-walking, running, biking) (80%), staying at home or reducing the number of times leaving home (65%) and using an N-95 mask, KN-95 mask, or respirator when outside (35%). Refer to Table 16 for more detail. For respondents that selected “other” (n=9), some responses included: “monitored air quality daily and worked outside when air quality was the least harmful” and “used a portable oxygen tank.” Only two respondents reported no changes to their behaviors.

*Table 16. Respondents' self-reported precautions taken while outdoors during poor air quality.**

STATEMENT	COUNT	PERCENT
Spent less time doing usual outdoor activities (e.g., walking, dog-walking, running, or biking.)	171	80%
Stayed at home or reduced the number of times I left my home.	140	65%
Used an N-95 or KN-95 mask or respirator.	75	35%
Left the community and went to an area with better air quality.	73	34%
Used another type of mask.	34	16%
Other.	9	4.2%
No changes.	2	0.9%

**Respondents could select more than one choice; therefore, percent response total will not add up to 100%. We calculated the percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

Information Sources: Air Quality

We asked respondents what sources they used to find information about air quality. The top three sources of information respondents used included: mobile phone (77%), internet (74%), and/or television (37%). Refer to Table 17 for more detail. For respondents that selected "other" (n=10), responses included: "local fire meetings", "air purifier unit numbers", "feeling physical health effects/sick", "looked outside and smelled the air", and "seeing thick smoke outside and smelling it inside with everything closed tight."

*Table 17. Respondents' self-reported sources used to find air quality information.**

SELECTION	COUNT	PERCENT
Mobile phone (app or text message)	165	77%
Internet (website, social media)	159	74%
Television	80	37%
Friends and family	69	32%
Email	64	30%
Roadway sign or community fliers	28	13%
Radio	24	11%
Print newspaper or newsletter	20	9%
Other	10	5%
Employer	9	4.2%

**Respondents could select more than one choice; therefore, percent response total will not add up to 100%. We calculated the percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

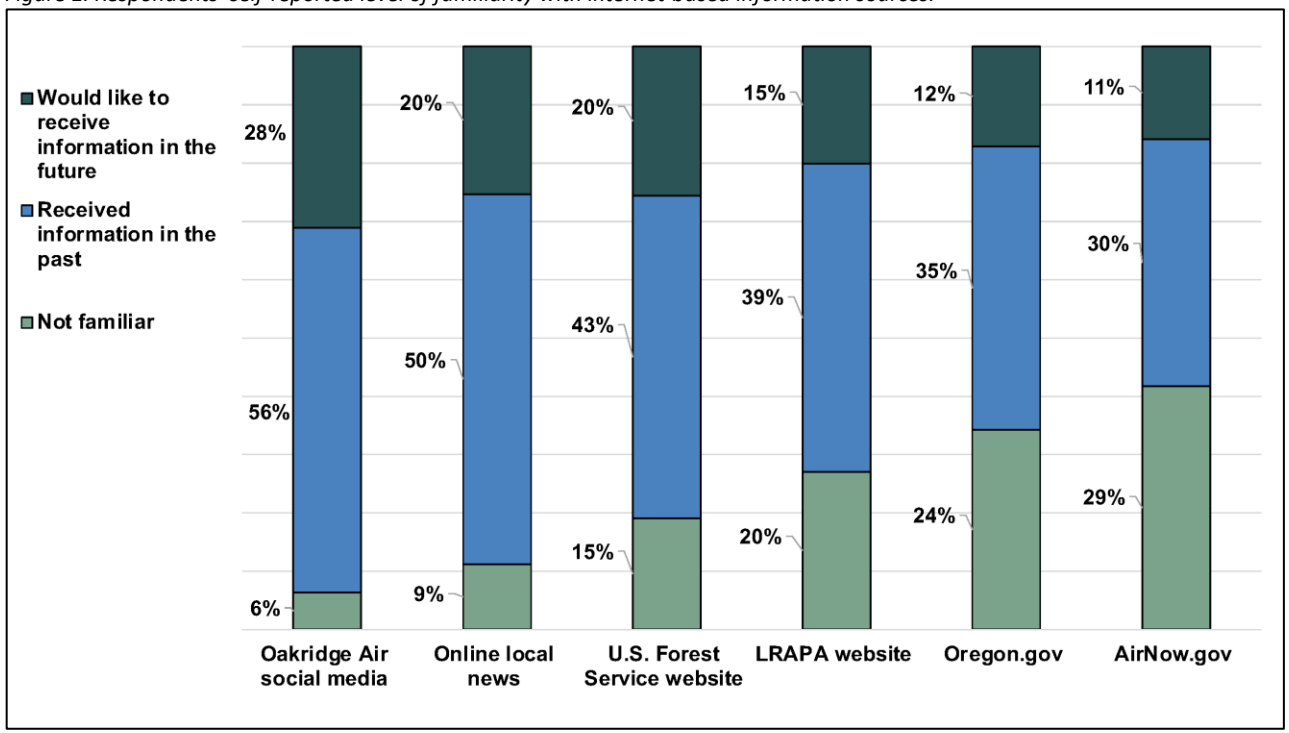
Internet (website and/or social media)

For those that selected "internet" as an information source, we asked them to share their past experience and preference for commonly available and/or recommended online and social media sources. Respondents were most likely to have received information from Oakridge Air social media (56%), followed by online local news sources (50%), and U.S. Forest Service websites (43%). These were also listed as the top information sources respondents would like to receive information from in the future. Refer to Figure 1 for more detail.

For respondents that selected "other" (n=9), there were a range of responses, such as:

- Websites: Purple Air, National Oceanic & Atmospheric Administration, New York Times, weather.com, weatherbug.com, aqicn.org
- Social media: Oakridge Facebook, Oakridge chat forum
- Alert system: Everbridge, Lane alerts
- Mobile phone apps: Watch Duty, MyRadar
- In person: U.S. Forest Service community meetings, word of mouth

Figure 1. Respondents' self-reported level of familiarity with internet-based information sources.

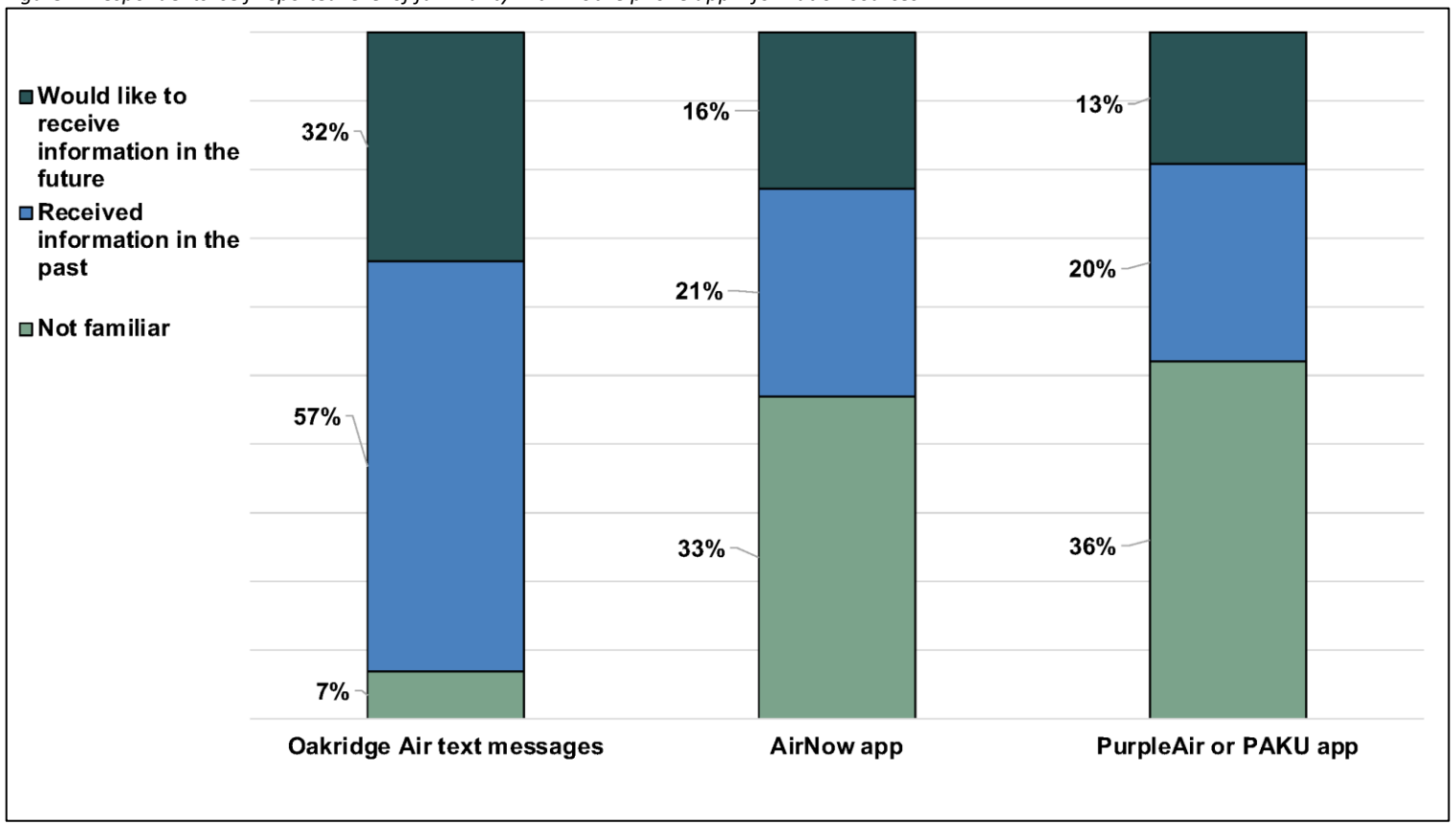


Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

Mobile Phone Apps

We asked respondents to share their past experiences and preferences for each information source. Respondents were most likely to have received Oakridge Air's text messages (57%), followed by AirNow app (21%), and PurpleAir or PAKU app (20%). These were also listed as the top information sources respondents would like to receive information from in the future as noted in Figure 2.

Figure 2. Respondents' self-reported level of familiarity with mobile phone app information sources.

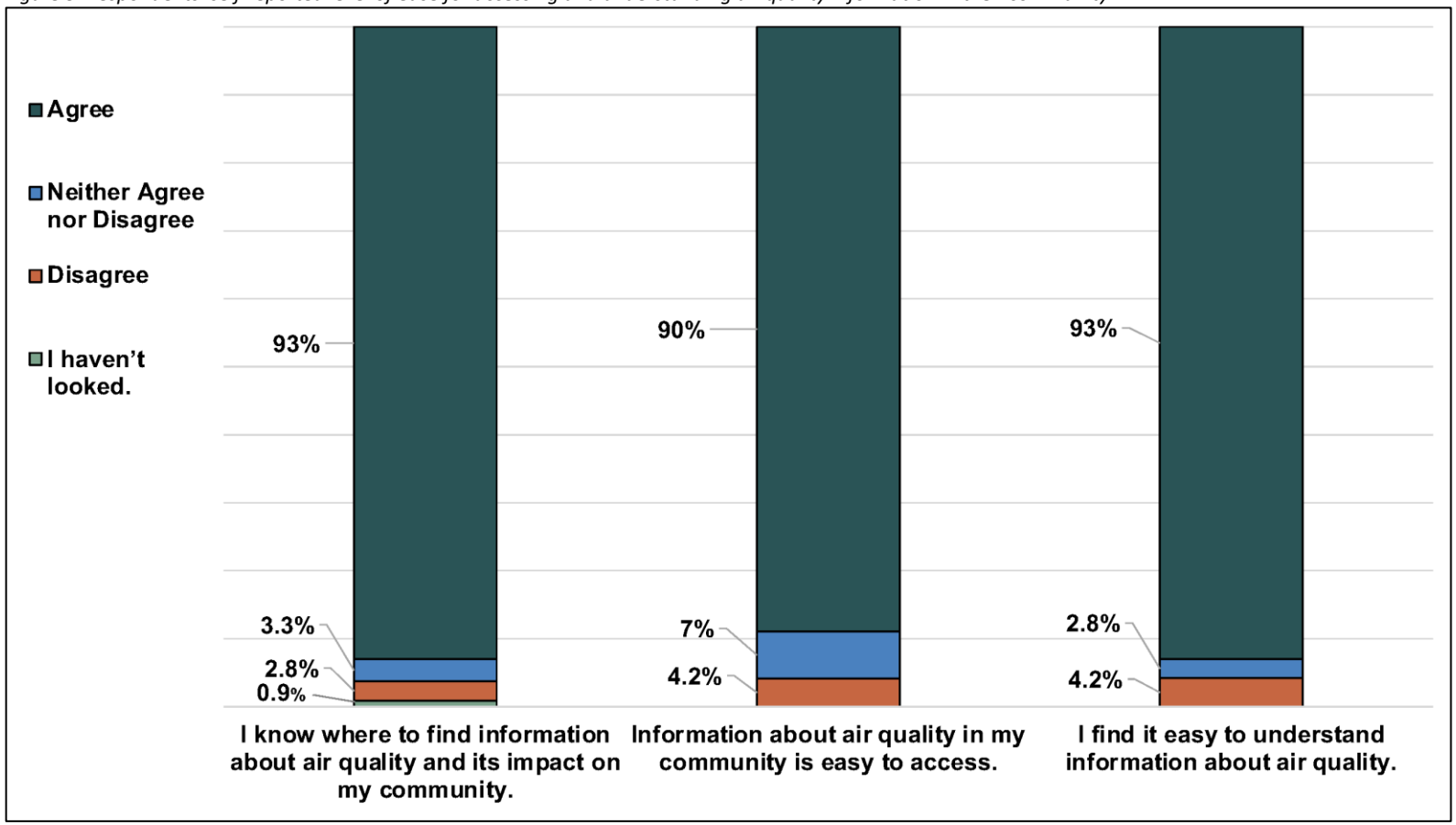


Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

Information: Access to and Understanding Impacts of Poor Air Quality

We asked respondents how much they agreed or disagreed with the following statements on a five-point Likert scale from "strongly agree" to "strongly disagree". We included an additional option for: "I haven't looked for information about air quality." Most respondents strongly agree that they know where to find information about air quality and its impacts (61%), that the information is easy to access (56%), and that the information is easy to understand (60%). Refer to Figure 3 for more detail.

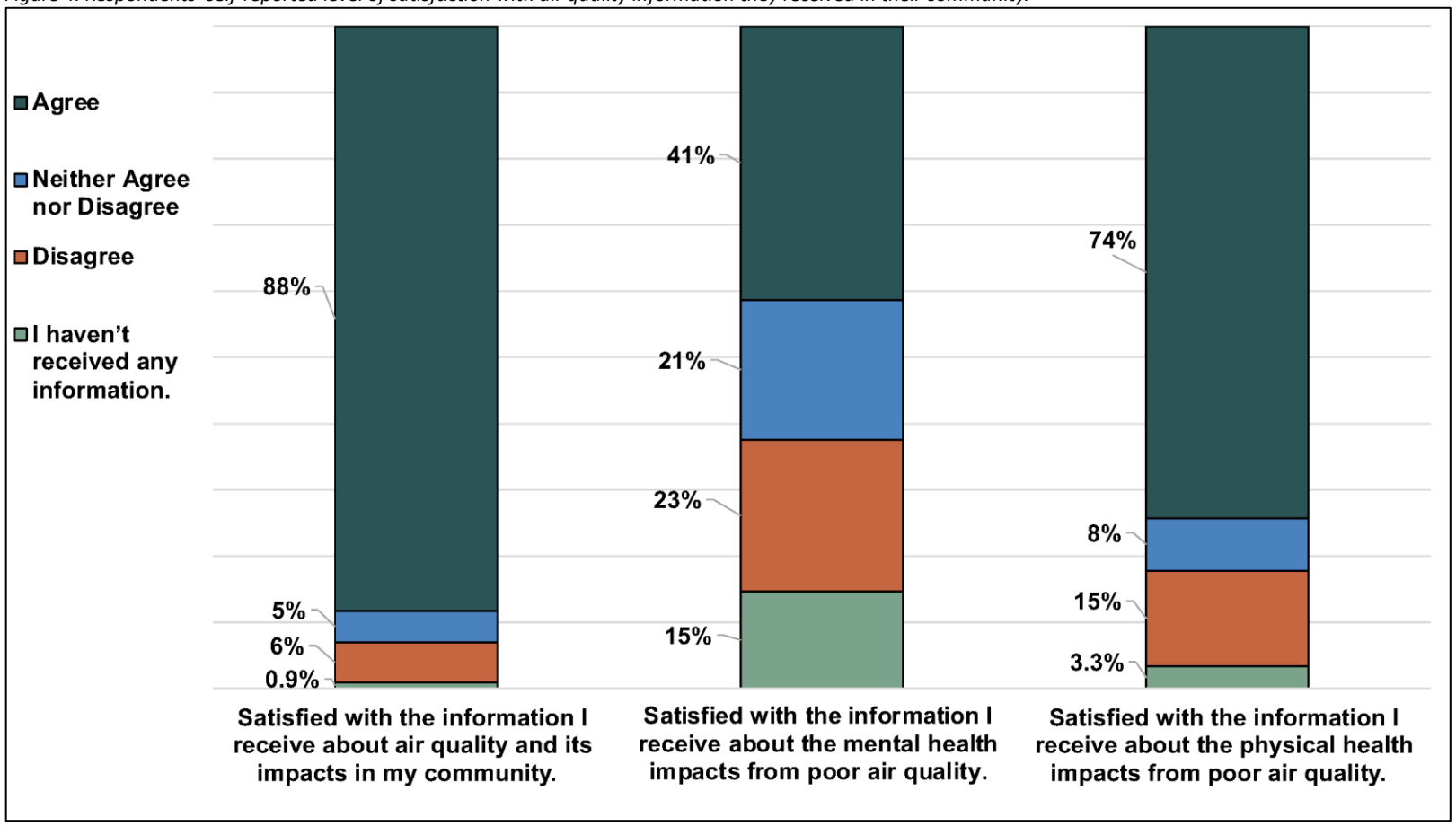
Figure 3. Respondents' self-reported level of ease for accessing and understanding air quality information in their community.



Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

We asked respondents how much they agreed or disagreed with the following statements on a five-point Likert scale from "strongly agree" to "strongly disagree". We included an additional option for: "I haven't received any information." Most respondents (51%) "strongly agree" that they are satisfied with the information they receive about air quality and its impacts. Seventy-five percent of respondents agreed (41% "somewhat agree" and 34% "strongly agree") that they are satisfied with the information they receive about physical health impacts from poor air quality. In contrast, only 41 percent of respondents agreed that they are satisfied with the information they receive about mental health impacts (24% "somewhat agree" and 17% "strongly agree"). Refer to Figure 4 for more detail.

Figure 4. Respondents' self-reported level of satisfaction with air quality information they received in their community.

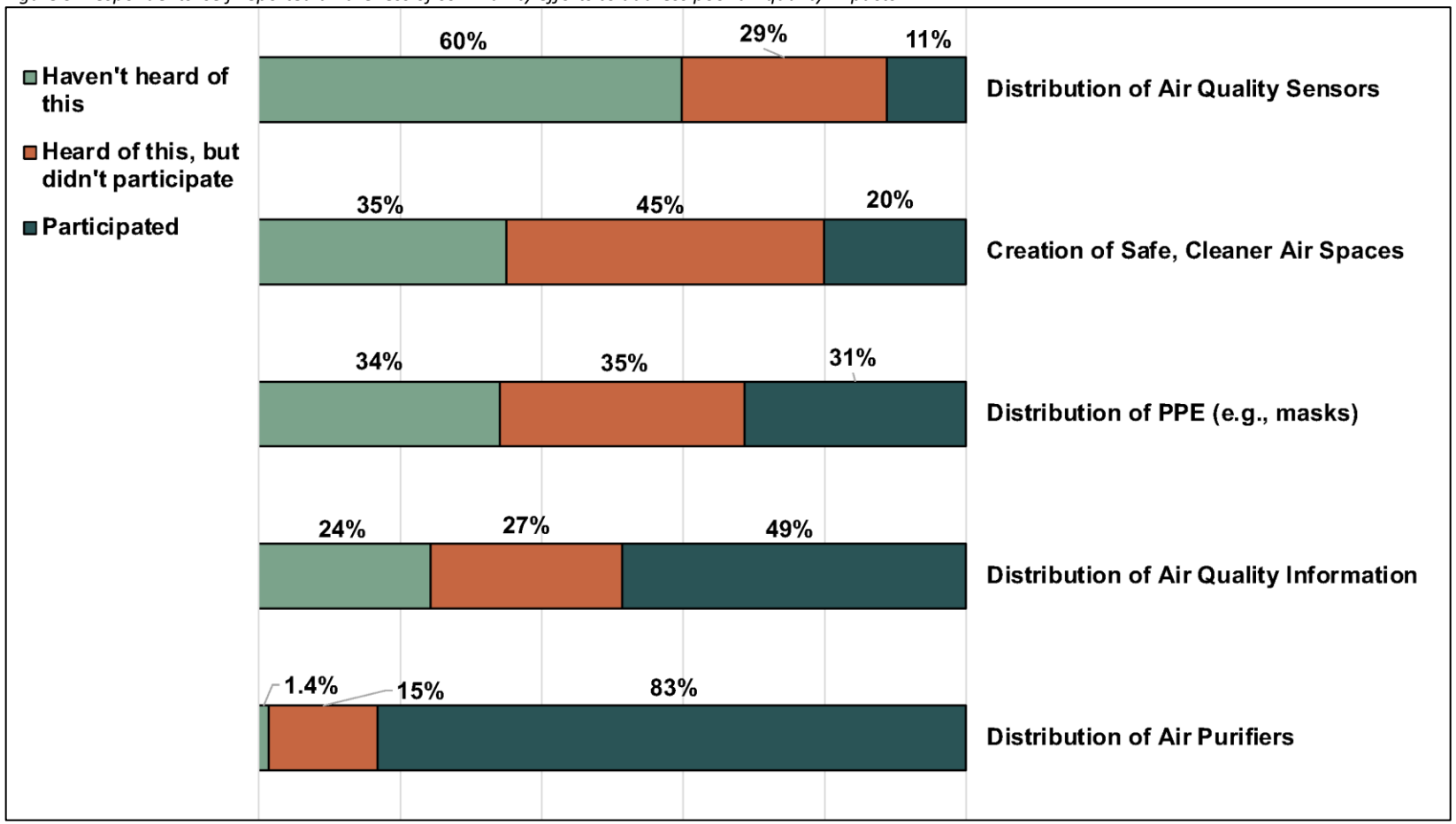


Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

Community Efforts to Reduce Impacts from Poor Air Quality

We asked respondents what efforts they have heard about to reduce the impacts from poor air quality in their community. Over 80 percent of respondents participated in the air purifier distribution program, while only 11 percent participated in the air quality sensor distribution. Furthermore, 60 percent of respondents had not heard of the air quality sensor distribution program. Nearly half of respondents (49%) had heard of local efforts to distribute air quality information, while 24 percent have not heard of it. Refer to Figure 5 for more detail.

Figure 5. Respondents' self-reported awareness of community efforts to address poor air quality impacts.

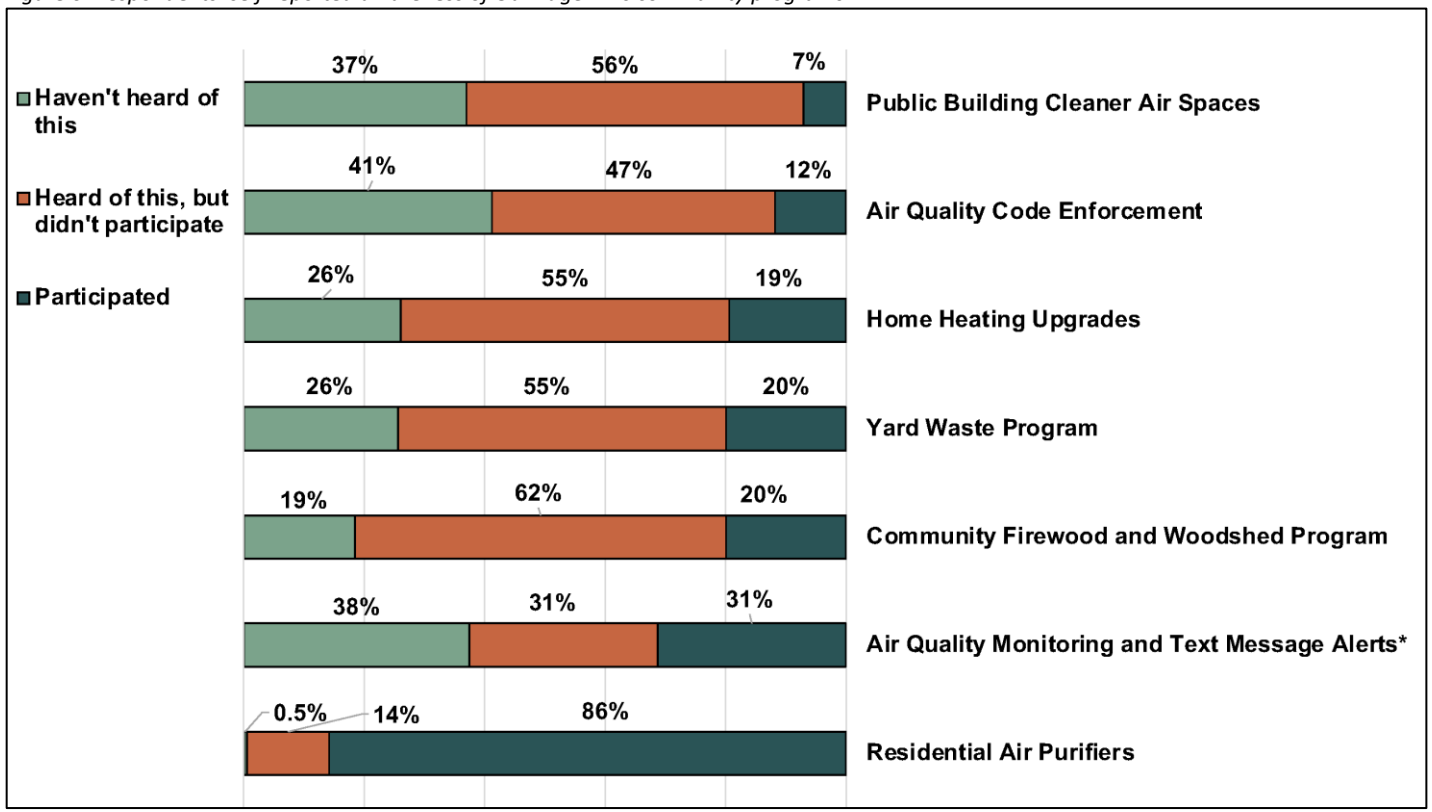


Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

Awareness of Oakridge Air's Community Programs

We asked respondents whether they had heard of programs Oakridge Air offered to the community. Respondents were most familiar with the residential air purifier program (86% participated) and least familiar with the air quality code enforcement program (41% had not heard of this). It is also important to note that 56 percent of respondents had heard of the public building cleaner air spaces, but did not participate. Although, from an equity standpoint of offering services regardless of utilization, 7 percent participated. It is also interesting to note that over 50 percent of respondents have heard of most of Oakridge Air's programs, even if they did not choose to participate (including the community firewood and woodshed program, the yard waste program, and the home heating upgrades program). This may indicate a need to better understand the reasoning for why people are not using these programs. Refer to Figure 6 for more detail.

Figure 6. Respondents' self-reported awareness of Oakridge Air's community programs.



**Note: We distributed the survey primarily over the text alert system, however, we also offered a paper survey version with Blue Boxes distributed throughout the community in publicly accessible locations, as described earlier in the section, "Detailed survey methods and results." For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

Experiences with Oakridge Air

We asked respondents if they had heard of Oakridge Air. Nearly all respondents (97%) reported that they had heard of Oakridge Air. Refer to Table 18 for more detail.

Table 18. Respondents' self-reported awareness of Oakridge Air.

SELECTION	COUNT	PERCENT
Yes	208	97%
No	3	1.4%
Unsure	3	1.4%

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

If respondents selected "yes" or "unsure", we asked them about their perception of how the Oarkidge-Westfir community views Oakridge Air. Most respondents (65%) reported an "extremely positive" community view, while 23 percent reported "somewhat positive" and 4.7 percent "somewhat negative". Refer to Table 19 for more detail.

Table 19. Respondents' perspective on how the Oakridge-Westfir communities view Oakridge Air.

SELECTION	COUNT	PERCENT
Extremely positive	138	65%
Somewhat positive	48	23%
Neither positive nor negative	14	7%
Somewhat negative	10	4.7%
Extremely negative	1	0.5%

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

Satisfaction with Oakridge Air and Lane Regional Air Protection Agency (LRAPA)

We asked respondents to share how satisfied they are with information from Oakridge Air from a 4-point Likert scale of "extremely satisfied" to "extremely dissatisfied." Before respondents could answer these questions, they first had to respond that they had received information from these organizations.

Oakridge Air

Seventy-five respondents selected that they had received information from Oakridge Air. Of those respondents, most respondents (76%) reported that they were "extremely satisfied", 19 percent were "somewhat satisfied" with the information they received. Refer to Table 20 for more detail.

Table 20. Respondents' self-reported satisfaction with information received from Oakridge Air.

SELECTION	COUNT	PERCENT
Extremely satisfied	57	76%
Somewhat satisfied	14	19%
Neither satisfied nor dissatisfied	3	4%
Extremely dissatisfied	1	1.3%

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

Lane Regional Air Protection Agency (LRAPA)

Eighty-four respondents selected that they had received information from LRAPA. Of those respondents, over half of respondents (51%) were "extremely satisfied", 32 percent were "somewhat satisfied" and 1.9 percent were "somewhat dissatisfied" with the information they received. Refer to Table 21 for more detail.

Table 21. Respondents' self-reported satisfaction with information received from LRAPA.

SELECTION	COUNT	PERCENT
Extremely satisfied	43	51%
Somewhat satisfied	27	32%
Neither satisfied nor dissatisfied	10	12%
Somewhat dissatisfied	4	4.8%

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

Information Respondents Would Like to Receive from Oakridge Air

We also asked respondents to select what types of information they would be interested in receiving from Oakridge Air. Over half of respondents indicated an interest in receiving information about upcoming prescribed fires (54%), followed by information about physical health risks from smoke and protective measures (48%), information about home heating program updates (43%), and information about mental health for coping with smoke events (41%). For respondents that selected, "other" (n=5), they expressed an interest in information about "access to air quality sensors", "fire updates", and "need green waste management". Refer to Table 22 for more detail.

*Table 22. Information respondents reported they would like to receive from Oakridge Air.**

SELECTION	COUNT	PERCENT
Information about Upcoming Prescribed Fires.	116	54%
Physical Health Information Related to Smoke Events (e.g., health risks and recommended protective measures for populations with various medical conditions).	102	48%
Home Heating Program Updates (including eligibility, applications, etc.)	92	43%
Mental Health Information for Coping with Smoke Events.	88	41%
How to Prepare Your Home for Wildfire Season.	87	41%
Information about Temporary Relocation from Smoky Areas During Fire Events.	87	41%
Stories about Oakridge Air Staff and their Projects (e.g., Wildfire Safety Night or Tree Planting Festival).	76	36%
Other Protective Actions (e.g., how to improve air filtration in the home).	74	35%
How to Set Up a Cleaner Air Room Inside Your Home.	68	32%
Community Firewood Program Updates.	63	29%
How to Find Air Quality Information and Smoke Forecast on my Smartphone.	60	28%
Other Community Event Information.	55	26%
How to Access a Cleaner Air Space in Your Community.	52	24%
I am not interested in information from Oakridge Air.	16	7%

**Respondents could select more than one choice; therefore, percent response total will not add up to 100%. We calculated the percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

Household and Community Preparedness

We asked respondents about their own feelings of preparedness: if they felt prepared for poor air quality, what contributed most to their preparedness, and what would allow them to feel more prepared. Most respondents (66%) reported they felt prepared for poor air quality and 18 percent selected that they felt unprepared. Refer to Table 23 for more detail. Only 12 percent of respondents were aware that their community had a wildfire smoke response plan. Refer to Table 24 for more detail.

Table 23. Respondents' perceived level of preparedness.

SELECTION	COUNT	PERCENT
Yes	141	66%
No	34	16%
Unsure	39	18%

Note: For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.

*Table 24. Respondents' perspective of what contributes most to their preparedness.**

STATEMENT	COUNT	PERCENT
I know what to do when there is poor air quality.	114	53%
I already have emergency supplies stored in my home.	77	36%
I have experienced poor air quality before.	73	34%
My household has a response plan for wildfire smoke.	62	29%
My community has a response plan for wildfire smoke.	25	12%
Other	6	2.8%
Air quality doesn't concern me.	0	0%

**Respondents could select more than one choice; therefore, percent response total will not add up to 100%. We calculated the percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

For respondents that selected "other" (n=6), there were a range of responses, such as:

- "Don't allow biomass plants to operate."
- "I am deeply concerned about the long-term effects of poor air quality despite using masks and air purifiers. I can't afford to leave for a month each summer and am seriously wondering if I should move."
- "I can leave the air when air quality is bad."
- "Need planning for livestock in case of prolonged smoke."
- "The information and services provided by Oakridge Air have been critical to me surviving the smoke season and the Cedar Creek fire smoke."

Identified Needs for Improving Preparedness

Community Level

At the community scale, most respondents identified a need for assistance for home weatherization to address indoor air quality in their community (72%), a need for distribution of air purifiers and filters (67%), and a need for personal protective equipment, such as masks and asthma medications (54%). Refer to Table 25 for more detail.

*Table 25. Respondents' perspective of what the communities of Oakridge-Westfir need to be more prepared for poor air quality.**

SELECTION	COUNT	PERCENT
Assistance for households to weatherize their homes.	154	72%
Distribution of air purifiers and filters.	143	67%
Improved access to protective equipment (masks, asthma medications).	115	54%
More information on what to do in case there is poor air quality.	102	48%
Access to cleaner air spaces.	78	36%
Other	21	10%
I do not believe the community could or should be more prepared.	6	2.8%

**Respondents could select more than one choice; therefore, percent response total will not add up to 100%. We calculated the percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

Household Level

At the household level, respondents indicated they their households were fairly well prepared. Less than one-third of respondents (27%) indicated that they would feel more prepared if they had adequate household protections (e.g., air filters, doors and windows that seal, and emergency supplies). Refer to Table 26 for more detail.

*Table 26. Respondents' perspective of what their household needs to be more prepared for poor air quality.**

SELECTION	COUNT	PERCENT
Adequate household protections (air filters, doors and windows that seal, emergency supplies)	58	27%
Information about the possibility of a smoke event	43	20%
Up-to-date local air quality information	39	18%
More information on what to do during a smoke event	38	18%
PPE (respirators, masks, asthma medications)	35	16%
Cleaner air spaces in my community	27	13%
Nothing would make me feel more prepared	2	0.9%

**Respondents could select more than one choice; therefore, percent response total will not add up to 100%. We calculated the percentage based on the 214 validated electronic and paper survey responses. For all percentages over 5%, we rounded up to whole numbers. For all percentages below 5% we included the first decimal.*

For respondents that selected "other" (n=6), there were a range of responses, such as:

- **Improve access to healthy indoor air:** A few respondents mentioned the need to improve indoor air quality in schools during smoke events, as well as improving access to air purifiers and filter eligibility and after-hours pick up or drop-off for those that work 9:00 am to 5:00 pm, and providing around-the-clock, clean air spaces.
- **Stop allowing backyard burning:** This included prohibiting burning of trash and yard waste, as well as not allowing biomass burning below the typical inversion elevation. One person mentioned a need for a yard waste pick-up service.
- **Changing US Forest Service management practices:** Input varied with some respondents voicing a need for "managing fires instead of fighting them", while another stated they wanted to see more suppression methods to "clean up our air quality." Another respondent described a need to harvest trees more frequently followed by replanting to reduce underbrush as a fuel source, while some mentioned the importance of reducing logging and to not have a biomass facility.
- **Support mental health needs:** A few respondents mentioned a need for more mental health preparedness and options for socializing during smoke events, but did not provide details.
- **Provide a safe place for livestock:** A single respondent mentioned this, but did not offer details.