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Living with Wildfire in Funny River, Alaska: 2023 Data Report

**Colleen Donovan, Suzanne Wittenbrink,
Hannah Brenkert-Smith, Josh Kuehn,
Paul McBride, Patricia A. Champ,
Christopher M. Barth, James R. Meldrum,
Carolyn Wagner, Christine Taniguchi**



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Abstract: Homeowner wildfire risk mitigation and preparedness are important components of community wildfire readiness. This report describes the data collected through two efforts conducted in the Funny River, Alaska, study area: (1) parcel-level rapid wildfire risk assessments performed by trained assessors and (2) homeowner surveys in which respondents provided self-assessments of their parcel-level wildfire risk. This project was undertaken to support the Kenai Peninsula Borough Office of Emergency Management and Central Emergency Services to inform decisions about wildfire adaptation. The household surveys explored the social dimensions of wildfire, including understanding of wildfire risk, outreach or communication preferences, mitigation and evacuation preparedness activities, and perceptions of community risk reduction strategies. Overall, the study indicated a community that was engaged in preparing for and mitigating the risk of wildfire; however, more mitigation work with respect to defensible space and home hardening could help reduce overall wildfire risk.

Keywords: WiRē (wildfire research), co-produced research, risk assessment, survey data, social science, community, resident, wildfire risk, preparedness, mitigation, wildland urban interface (WUI)

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Authors

Colleen Donovan, Wildfire Research (WiRē) Center, Niwot, Colorado

Suzanne Wittenbrink, Wildfire Research (WiRē) Center, Niwot, Colorado

Hannah Brenkert-Smith, University of Colorado Boulder, Institute of Behavioral Science, Boulder, Colorado

Josh Kuehn, Wildfire Research (WiRē) Center, Niwot, Colorado

Paul McBride, Office of Emergency Management, Kenai Peninsula Borough, Alaska

Patricia A. Champ, U.S. Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado

Christopher M. Barth, U.S. Forest Service, Washington Office and Fire and Aviation Management, Missoula, Montana

James R. Meldrum, U.S. Geological Survey, Fort Collins Science Center, Fort Collins, Colorado

Carolyn Wagner, Wildfire Research (WiRē) Center, Niwot, Colorado

Christine Taniguchi, University of Colorado Boulder, Institute of Behavioral Science, Boulder, Colorado

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¹ Goolsby, Julia B.; Brenkert-Smith, Hannah; Donovan, Colleen; [et al.]. 2024. Preparing mobile home park residents for wildfire in Lake County, Colorado. Boulder, CO: Natural Hazards Center. 20 p. <https://doi.org/10.2737/RMRS-RN-106>

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Executive Summary

Funny River is a community on the Kenai Peninsula that is bordered on the south by the Kenai National Wildlife Refuge and bordered on the north and east by the Kenai River. The community is dispersed across a relatively flat, but difficult to access landscape. This fire-prone community is served by Central Emergency Services (CES), which has one station staffed by two firefighters on the west side of the community. The community has one bridge across the Kenai River on the far east side of the community for egress and emergency access, making evacuation planning and preparedness of particular importance for wildfire and other emergencies.

In 2023, CES and the Kenai Peninsula Borough Office of Emergency Management partnered with the Wildfire Research (WiRē) team to collect local data to improve understanding of residents' wildfire risk mitigation and preparedness activities and their support of wildfire risk mitigation in and around the Funny River area. The effort prioritizes two types of data: parcel-level wildfire risk assessment data and household survey data. We followed the WiRē Rapid Wildfire Risk Assessment (WiRē RA) protocol, which measures parcel-level risk as the sum of a set of 13 attributes related to access to the property, background fuels and topography, vegetation near the home, and home structure characteristics. The protocol for this project was adapted to the unique availability of high-resolution aerial imagery in support of this effort.

First, WiRē RAs were conducted on all properties with residential structures within the study area, which included 873 residential parcels. Next, a household survey was sent to the owners of all residential properties in the study area, collecting homeowners' self-assessment of their property's wildfire risk as well as a range of social data related to how survey respondents live with the risk of wildfire. The household survey was sent to 837 homeowners of which 308 returned a completed survey; this effort resulted in a 37 percent response rate. Overall, there were 285 properties for which a risk assessment paired with a household survey response. There are an additional 588 properties with only a risk assessment, for a total of 873 risk assessments in the study area. This report summarizes the results of the study.

Household survey respondents were generally aware of wildfire risk, with high levels of stated awareness (87% reported being somewhat or very aware of risk when they moved in (fig. 18)). Forty percent of respondents had evacuated their Funny River home due to wildfire or threat of wildfire (fig. 19), and 45 percent estimated that there had been a wildfire within two to ten miles of their home (fig. 20). Despite this, only 51 percent agreed or strongly agreed with the statement, "My property is at risk of wildfire" (fig. 21).

Most respondents, however, reported undertaking actions to reduce wildfire risk on their properties including reducing vegetation on their property (92%), regularly mowing or raking (80%), and clearing roof and gutters (71%) (fig. 33). Critically, 87 percent agreed or strongly agreed that "Reducing wildfire risk on private property improves firefighter safety" (fig. 45).

Despite respondents reportedly taking action, the WiRē RA from paired records—those that have both a WiRē RA and a household survey—found only 14 percent of properties were clear of overgrown dense, or unmaintained vegetation within 30 feet of the home (fig. 9), and most properties had combustible items within 30 feet of (92%) and attached to (98%) the home (fig. 10 and fig. 7, respectively). The data also highlight limited options for safe egress from the community in the event of a wildfire. While the WiRē RA observed that about half

the properties (47%) had only one road in/out of the immediate area (fig. 15), the Funny River community currently only has one bridge to enable safe evacuation out of the broader community area.

Notably, over half of the respondents (52%) agreed or strongly agreed with the statement, “During a wildfire, I will receive an evacuation order with enough time to safely evacuate” (fig. 44), and most respondents (79%) reported having an evacuation plan for the people in their household (fig. 31). However, when asked about specific evacuation planning actions, only 35 percent of respondents had identified how they would be notified of an evacuation, and only 33 percent reported having signed up for emergency notification (fig. 32). Despite this low rate of participation in the system that would provide an emergency notification, there was a high level of interest in evacuation preparedness measures. Forty-six percent of respondents wanted to know more about how they would be notified, and 45 percent wanted more information on how to sign up for emergency notification (fig. 32). Further, in the paired records, 74 percent of properties had a house number sign that meets local standards of being made of durable materials, visible from the road, having contrasting background and reflective, 3-inch numerals, standards that facilitate swifter emergency response (fig. 14).

Results also indicate interest in many programs supporting mitigation on private property, including interest in receiving help to do mitigation work (39%), interest in financial assistance to reduce risk (38%), in one-on-one site visit with wildfire experts on their properties (38%), and in reports describing their properties’ wildfire risk factors (37%) (figs. 38 and 39).

Despite the fact that half of respondents identified their property as a second home (51%), respondents indicated receiving wildfire risk information from local and State sources including CES (51%), KPB Office of Emergency Services (43%), Alaska Firewise (37%), community group (37%), and the Alaska Division of Forestry and Fire Protection (30%) (fig. 29).

Finally, most survey respondents (81%) agreed or strongly agreed with the statement “Wildfires are a natural part of a healthy forest or ecosystem” (fig. 44). Likewise, there was a high level of acceptability for public lands treatments to reduce wildfire risk, though variation in acceptability is noted based on the type of management technique (fig. 41) with the highest acceptability of non-fire techniques including removing vegetation along utility right of ways to reduce wildfire starts (81%), creating a fuel break on nearby public lands (71%), and removing trees and other vegetation (thinning) on nearby public lands (70%).

What is WiRē?

The Wildfire Research (WiRe) team partners with wildfire risk mitigation and education organizations to support the development of local, evidence-based wildfire programs that are tailored to the needs of individual communities. The team works with wildfire practitioners to collect, interpret, and use paired parcel-level wildfire risk and social data for all homes within study communities. While certain components of the data collection and analyses are standardized across all communities, local practitioners drive research questions, how the research is shared with their community and what kinds of wildfire risk mitigation programs develop from the research. Communities have used the data from this research to shape the programs they offer, populate grant proposals, and facilitate understanding of wildfire risk mitigation.

The WiRē Approach

The WiRē Approach includes two central data collection efforts:

1. A WiRē parcel-level wildfire risk assessment (WiRē RA) based on attributes related to home structure characteristics, fuels near the home, background fuels and topography, and access to the property. The WiRē RA also includes an overall risk rating for the property. WiRē risk scores are not an absolute measure of risk but are estimates of risk using a standardized suite of variables observed by a particular person at one point in time (refer to Methods).
2. A household survey sent to the owner of each assessed property, which represents their notions of wildfire risk, how they communicate about wildfire risk, risk mitigation behaviors, including evacuation planning, and barriers and incentives to mitigate wildfire risk on private properties.

The WiRē Approach aims to empower the voice of wildfire practitioner partners. These partners participate in the data collection process and share the results with their communities. Experience has demonstrated that sharing results with the community provides a common platform for constructive discussion about adapting to wildfire. During these discussions, wildfire practitioner partners can draw from data that reflect the entire community, not just a vocal few. To support these discussions and other partner goals, WiRē works with partners to summarize and interpret research results.

WiRē compiles the data from individual projects to provide insights that transcend community uniqueness and contribute to the wildfire social science state of knowledge. In addition, replication of the WiRē Approach within a study area can be used to monitor change over time.

Study Area: What Does the Community and Environment Look Like?

In 2023, the Kenai Peninsula Borough Office of Emergency Management (KPB OEM) engaged with the Wildfire Research (WiRē) Center to implement the WiRē Approach. The KPB OEM had just updated their Community Wildfire Protection Plan (CWPP) and were prioritizing community engagement with respect to wildfire risk mitigation and evacuation preparation. KPB OEM identified Funny River (refer to fig. 1) to be included in the WiRē project based on several characteristics: high risk communities with limited egress and resident engagement in wildfire risk mitigation and preparedness programs.

Funny River

The community of Funny River is surrounded by the Kenai National Wildlife Refuge and has created successful contributions to defensible space projects through the years. This prevention-based mindset was largely influenced by the 2014 Funny River Horse Trail Fire when evacuation measures were challenged due to the one road in and out of the community. In 2021, their interaction with the Community Wildfire Protection Plan process reiterated the importance of reducing hazardous fuels. Residents' commitment and interest in the CWPP process placed the community in a good position to transition from planning to completing projects using WiRē core concepts.

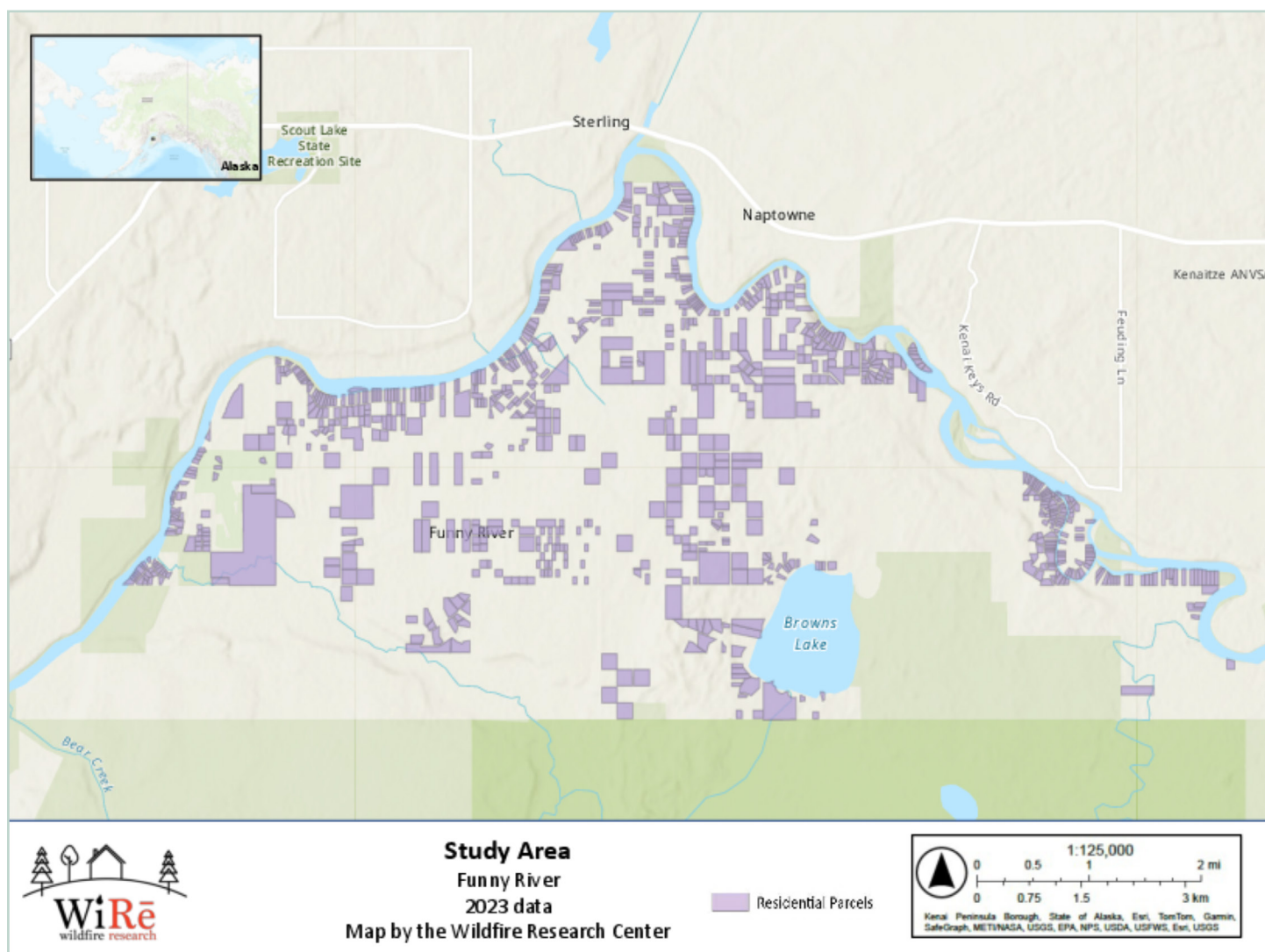


Figure 1—Map of residential parcels in 2023 in the Funny River, Kenai Peninsula Borough, Alaska, study area. Inset map shows the location of the study area in Alaska. Map image is the intellectual property of Esri and is used herein under license. Copyright © 2020 Esri and its licensors. All rights reserved.

WiRē Partner: Kenai Peninsula Borough Office of Emergency Management

The KPB OEM has the primary, day-to-day, area-wide responsibility for natural and human-caused disaster management, community preparedness, and mitigation planning programs and activities. The OEM actively participates in the “All Lands / All Hands Action Plan,” an

interagency strategy that focuses on on-the-ground action that includes implementation of the 2022 Kenai Peninsula Borough Community Wildfire Protection Plan to reduce community and individual vulnerability to wildfire hazards before they occur. Developed to reduce community and individual vulnerability to wildfires, this plan is a collaboratively developed, interagency multi-year plan designed to augment the implementation of mitigation tasks and prevention-based projects in alignment with the National Cohesive Wildland Fire Management Strategy. Participating landowners include local, State, Federal, private and Tribal entities. The plan is designed to be a working document that presents a 5-year implementation schedule for all participating landowners for years 2023 through 2028. Recognizing that full implementation of the plan is contingent on available funding, the schedule provides a basis for identifying what landowners in the KPB can accomplish individually or cumulatively on an annual basis over the 5-year period.

WiRē Partner: Central Emergency Services

Central Emergency Services (CES) is a Kenai Peninsula Borough Fire Service Area funded by a property tax mill rate. Serving over 1,000 square miles—including Soldotna, Sterling, Ridgeway, Kasilof, Funny River, and Kalifornsky Beach—CES protects a year-round population of 25,451, which nearly doubles in summer. The department operates five fire stations with 53 full-time staff and 30 volunteers. In 2024, CES responded to 3,252 fire and Emergency Management System incidents. CES provides structural and wildland firefighting, emergency medical services, technical rescue, dive and water rescue, and off-road response using boats, all-terrain vehicles, utility-task vehicles, and snowmobiles. The department also delivers automatic and mutual aid to the City of Kenai, Cooper Landing, Western Emergency Services, and the Nikiski Fire Service Area, and works in dual response with the State of Alaska Division of Forestry and Fire Protection on wildland fires.

Methods: What Did We Do?

In 2023 and 2024, WiRē partnered with the KPB OEM and CES to implement the WiRē Approach. The study launched by mailing an initial letter in May 2023 to inform residents in the study area of the upcoming activities (Refer to Appendix A for correspondence materials and household survey). Next, the WiRē RA was conducted, and household surveys were sent to homeowners. Additionally, WiRē, CES, and KPB OEM developed a “leave behind” flyer to hand out to residents who wanted more information about the project (refer to Appendix A).

WiRē Parcel-Level Wildfire Risk Assessments

In the spring and summer of 2023, a total of 873 WiRē RAs were conducted on all properties with a residential structure in the study area. WiRē RAs are typically conducted in-person, from the road. However, due to unique project circumstances, including accessibility, safety concerns, lack of capacity, and availability of high-resolution imagery¹, WiRē RA data were collected using a mix of high-resolution imagery and in-person roadside assessments. Specifically, all WiRē attributes that were available in the high-resolution imagery were collected and scored remotely. Address posting was not observable in the remote imagery and was collected in person.

¹ EagleView imagery published through Connect Explorer. 3-inch resolution oblique imagery; May-June 2021.

The WiRē RA is composed of a set of 13 attributes that include home structure characteristics, vegetation near the home, background fuels and topography, and access to the property. The 13 attributes are weighted and summed to produce an overall risk score for each parcel (refer to fig. 2). The weights reflect the attributes' relative contribution (ranging from 1–30 percent, per attribute) to overall wildfire risk. For example, because roofing materials can present a more significant risk than address posting, these attributes are weighted differently, constituting 30 percent and 1 percent of the overall risk score, respectively. Refer to Appendix B for specific assessment attribute weightings.

To support comparison of risk across properties, the overall risk scores for each parcel are placed into five categorical “risk ratings” (low, moderate, high, very high, and extreme). These risk ratings are defined by the distribution of risk scores in WiRē’s compiled dataset, which includes all applicable WiRē studies to date. Specifically, the cut-offs between each risk rating are the 10th, 25th, 75th, and 90th percentile of the full distribution across WiRē studies. This resulted in the following overall risk ratings: low (20–250), moderate (251–325), high (326–455), very high (456–540), extreme (541–1,000).

Importantly, a parcel-level risk rating does not account for all components of risk, including variable or extreme weather conditions, and some factors which can only be captured during a comprehensive on-site consultation (e.g., vent screen size, windows, fire-resistant flashing, etc.). Thus, WiRē risk scores are not an absolute measure of risk but are estimates of risk using a standardized suite of variables observed by a particular person at one point in time. In instances when an attribute could not be observed, the category “unknown/not observed” was selected. During data processing, these responses were assigned to the highest risk score.

The remote WiRē RAs were conducted by several undergraduate students at the University of Colorado, as well as by WiRē team members (hereafter referred to as the “trained assessors”), after receiving training by WiRē. WiRē provided training and regular supervision of the students’ assessments and oversight to ensure consistency across trained assessors.

In addition to the training, WiRē provided two reference documents: (1) an Assessor Reference Guide that orients trained assessors to the data being collected and provides guidance on how to choose which response category reflects the condition observed at the parcel level and (2) Data Collection Instructions on how to use Connect Explorer (refer to Appendix B).

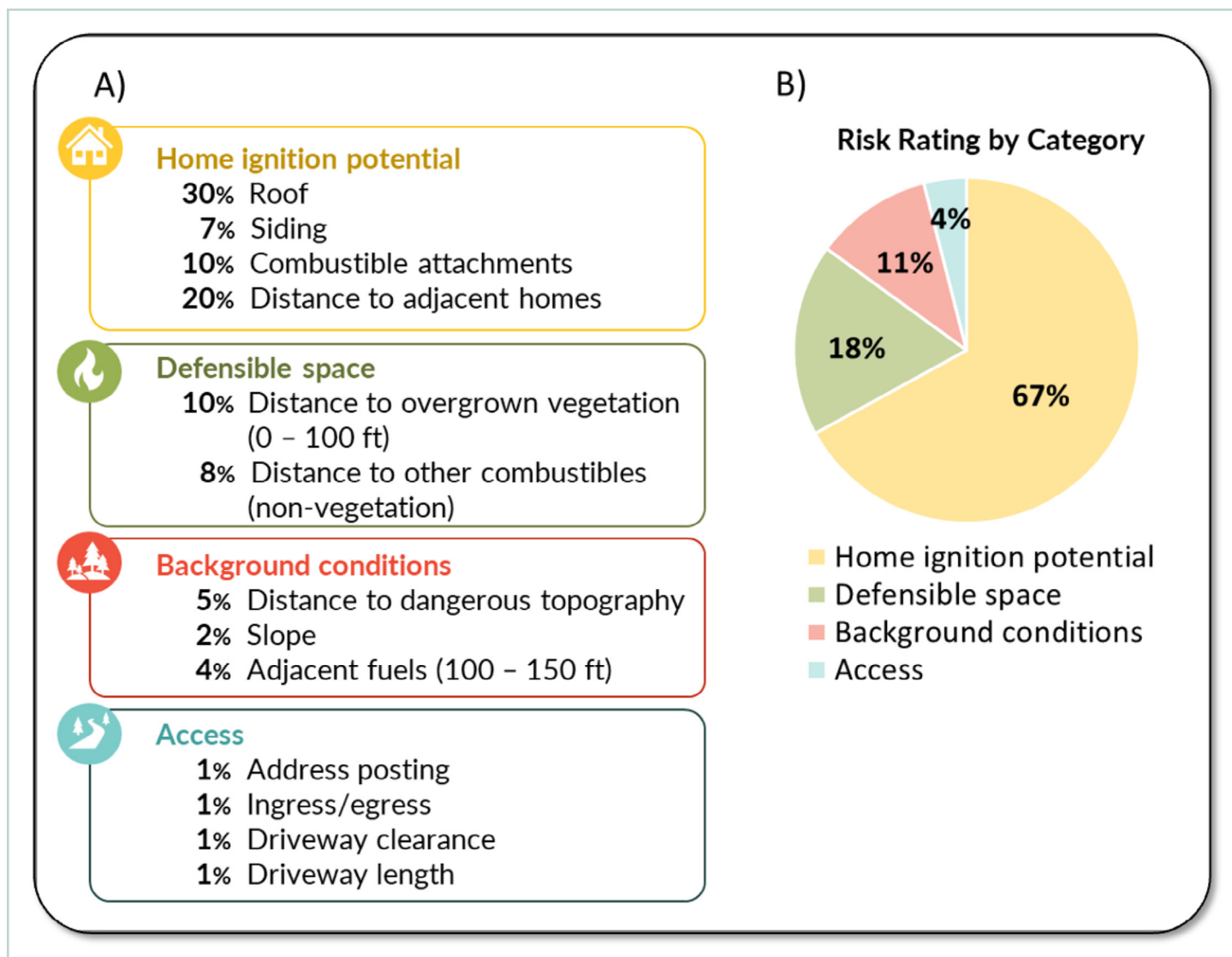


Figure 2—Wildfire Research (WiRē) parcel-level wildfire risk assessment (WiRē RA) (A) Relative weight of each risk attribute within the overall risk score. (B) Relative weight of each risk category within the overall risk score.

Household Survey

The household survey was designed to collect a range of social data related to how residents in the study area live with the risk of wildfire. Most of the survey questions are standardized across WiRē studies. However, some questions were tailored to address the interests of the KPB OEM and CES. WiRē worked collaboratively with these groups to develop the final version of the household survey. The household survey was mailed to the homeowners of all the properties for which a WiRē RA was completed.² Household survey data were collected using a modified Dillman approach,³ which includes three mailings after the initial letter announcing study activities and the data collection efforts (Refer to table 1 for survey

2 As part of the WiRē Approach, one survey is sent to each individual homeowner in the study area. If an individual owns multiple properties, they receive only one survey with a prompt to select a specific property address. As a result, the number of household surveys mailed out is different from the total number of WiRē parcel-level wildfire risk assessments conducted.

3 For details, refer to Dillman, Don A. 2000. Internet and mail surveys: The Tailored Design Method, 2000. New York: John Wiley. 480 p.

administration timing). The first mailing was a survey packet containing a cover letter, a household survey, and a postage-paid and addressed return envelope. The second mailing, a reminder/thank you postcard, was mailed to the entire mailing list approximately one month after the initial survey packet. The final mailing was a second complete survey packet with an updated cover letter mailed to non-respondents approximately one month after the reminder postcard.

The household survey was sent to 836 households. The number of surveys returned was 308, for a 36.8 percent response rate.

Table 1—Timing of the household survey administered to residents in the study area by the Kenai Peninsula Borough Office of Emergency Management and Wildfire Research (WiRē) to collect information related to wildfire risk.

Mailing	Date of Mailing
Initial letter	5/19/2023
First survey package	2/12/2024
Postcard reminder	2/26/2024
Second survey package	4/01/2024

A Comparison of Risk Assessment: Results of the Wirē Parcel-Level Wildfire Risk Assessment and Household Survey

A total of 873 WiRē RAs were conducted by trained assessors. The trained assessors categorized the parcels’ overall risk as follows: low risk (6%), moderate risk (19%), high risk (66%), very high risk (3%) or extreme risk (5%). For more details, refer to Appendix C, table 1.1.

The WiRē RA data were paired with the household survey data, for which there were 308 records, to produce 285 records with all the household survey and WiRē RA variables⁴ (“paired data,” refer to fig. 3).⁵ The data used in the section below represent only the paired data—properties for which a household survey was completed and there is an associated WiRē RA.

4 Twenty-three household surveys were dropped from the “paired data” reported in this section due to missing corresponding WiRē RA data. WiRē RA data may be missing for a variety of reasons, including inability to assess a home (e.g., private road, safety concern). These household survey data are included in the household survey summary (Appendix E) and in *Social Dimensions of Wildfire Risk in Funny River: Results of The Household Survey* section of this report.

5 Any differences between the numbers reported here and the comparison of the WiRē parcel-level wildfire risk assessment and household survey (Appendix D) should be minor and the result of rounding.

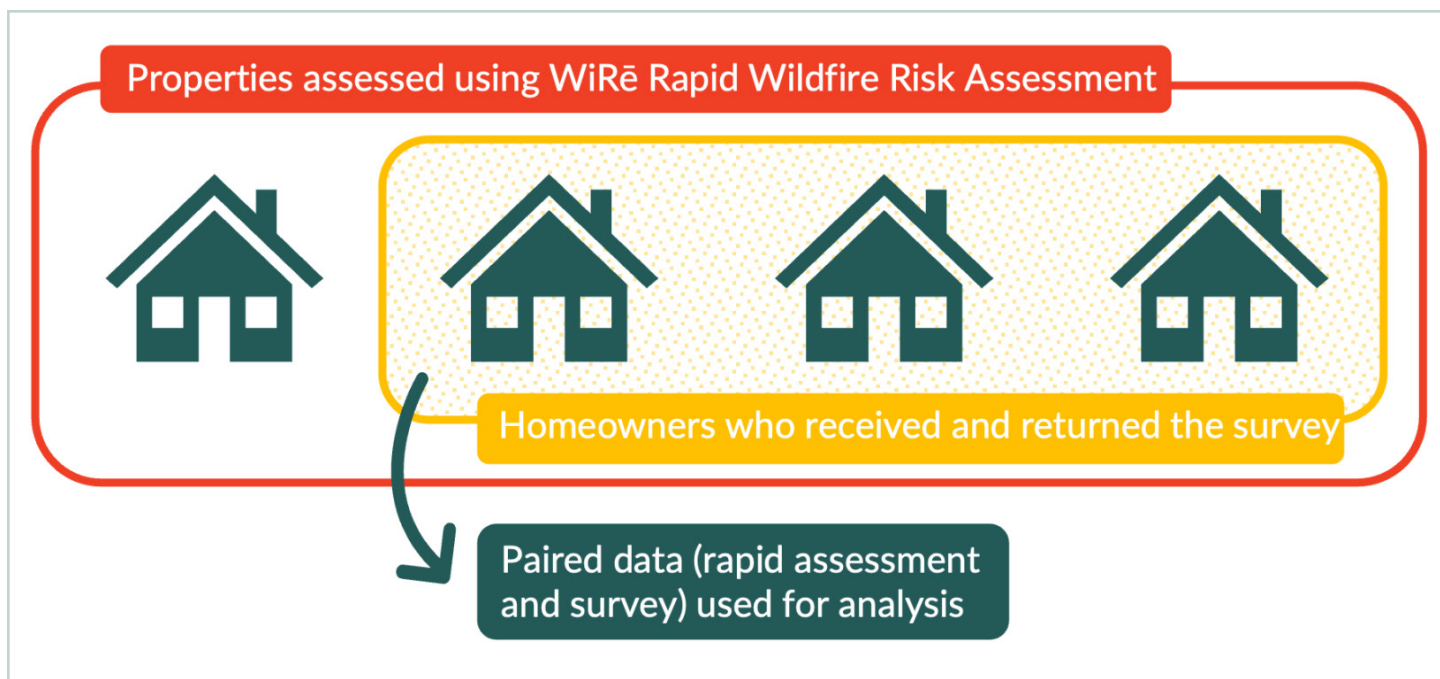


Figure 3—Representation of the Wildfire Research (WiRē) parcel-level wildfire risk assessment and household survey data collected in a WiRē project, which are combined to produce the paired data.

Statistical tests⁶ were performed to assess whether parcel-level wildfire risk was different for parcels whose residents responded to the household survey (i.e., the paired data) compared to parcels in the study area whose residents did not respond. No statistical differences were found.

Risk Attributes: Observed in the WiRē Parcel-Level Wildfire Risk Assessments vs. Self-Assessed by Household Survey Respondents

The WiRē RA and household survey data were compared by looking at the overall wildfire risk rating and the results for each of 13 risk attributes as reported by trained assessors and survey respondents, respectively. The results below are organized by overall risk and then risk categories of home ignition potential, defensible space, background conditions, and access.

Overall wildfire risk rating—

Survey respondents evaluated their properties for each of 13 risk attributes included in the WiRē RA. They were also asked to provide an assessment of their properties' overall wildfire risk, taking into consideration the 13 risk attributes. The survey question about overall wildfire risk offered five response options: low, moderate, high, very high, or extreme risk. This scale matches the WiRē RA's overall risk rating scale and is based on respondents' self-assessment of their overall risk. In contrast, the WiRē RA's overall risk ratings were calculated by adding the weighted scores of the 13 individual risk attributes and assigning a risk category (i.e., low, moderate, high, very high, extreme) based on the summed score⁷. The WiRē RA overall ratings reflect the relative weight of the various attributes (e.g., a wood roof is 30

⁶ Statistical tests included a Two-sample Wilcoxon rank-sum (Mann-Whitney) test and a Pearson chi²

⁷ Refer to Appendix B and Appendix C for more information on the risk scores.

percent of the overall risk score). Comparing the WiRē RA data to survey responses provides insight into the differing risk perspectives of residents and trained assessors.

Overall wildfire risk ratings reported by survey respondents were lower on average than those in the observed WiRē RA data. Ratings in the high-risk category best exemplify this trend: fewer survey respondents (26%) rated their parcels as high risk of wildfire compared to the WiRē RA (68%). Most survey respondents (51%) rated their parcels as moderate risk of wildfire (refer to fig. 4).

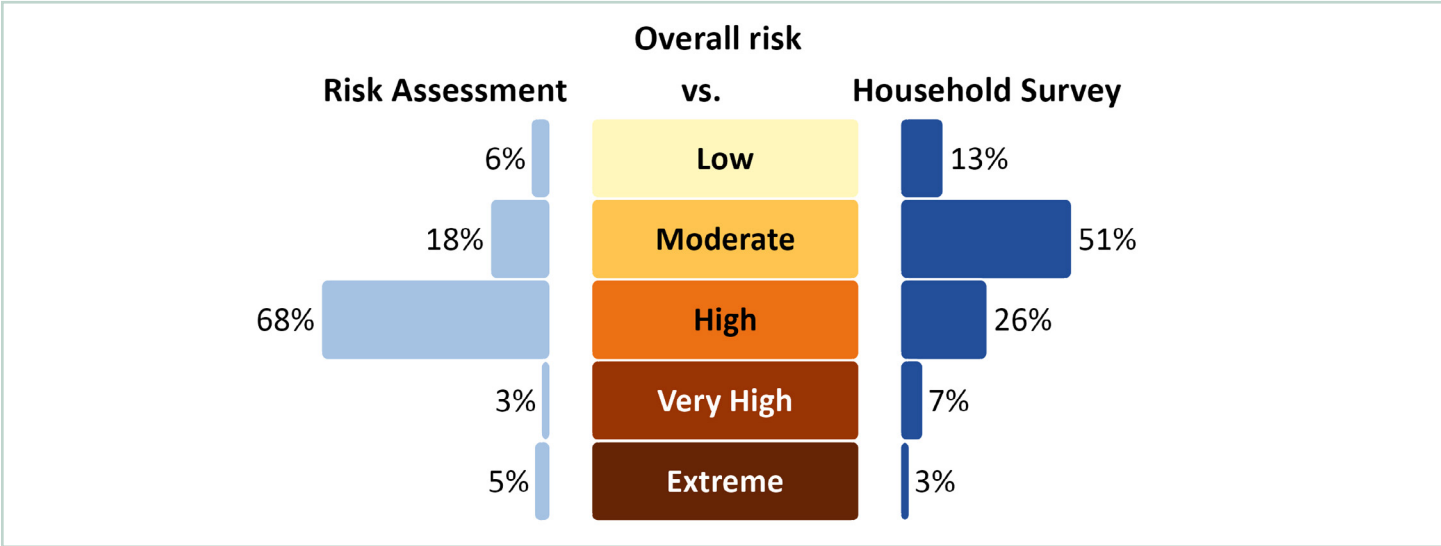


Figure 4—Distribution of overall risk rating. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data (WiRē RA). Represents 277 of the paired household survey and WiRē RA data records that each had a response to this question.

Home ignition potential—

Wildfire conditions can impose long periods of convective and radiant heat on structures. These conditions test the limits of the materials used in construction. Both the design and home structure conditions play a role in a structure’s ignitability.

Risk attribute: roof—

The roofing material of a structure is a critical component in determining ignitability. Roofs were assessed by the material from which they were constructed. These were either fire-resistant (noncombustible) materials such as metal, tile, and asphalt, or fire-receiving (combustible) materials such as wood shingles.

The WiRē RA data and survey responses were largely aligned and reported almost all roofs as non-combustible (96% and 97%, respectively). Only 4 percent of roofs were reported as combustible by the WiRē RA data, while 3 percent of roofs were in this category according to survey responses. Refer to figure 5.

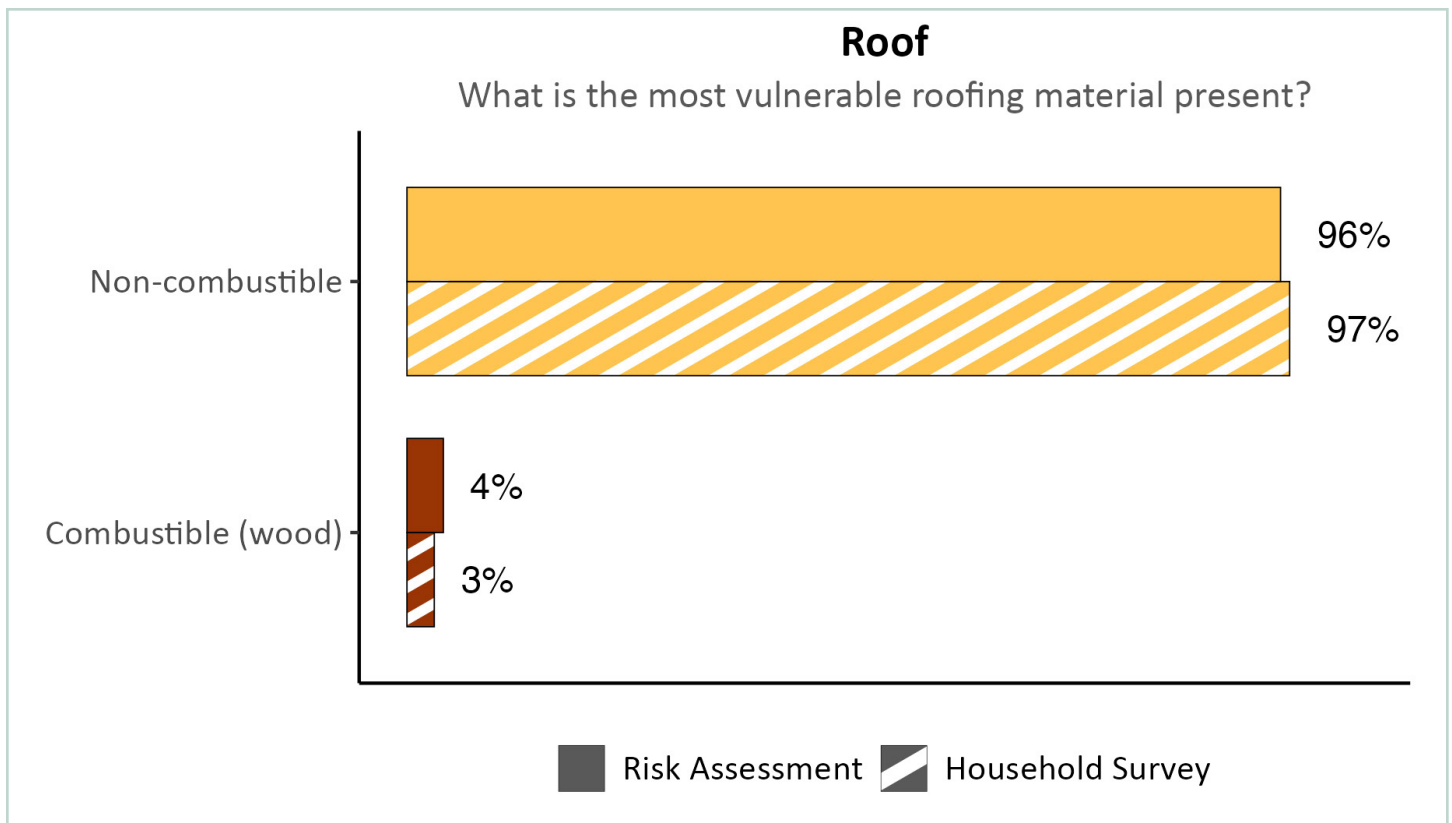


Figure 5—Combustibility of residential roof type. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 278.

Risk attribute: siding—

A structure's exterior walls, including the materials used and the design and construction, contribute to the overall ignitability of a home in a wildfire event. Smooth, noncombustible materials such as stucco and metal have less chance of collecting blowing embers than wood siding which may have more space for embers to land. The siding of homes was assessed into three categories: low risk, noncombustible materials (e.g., stucco, brick, stone); medium combustion risk materials (log or heavy timbers); or high combustion risk materials (vinyl, wood, or other ember-receptive siding).

Trained assessors and survey respondents categorized most homes' siding as wood or vinyl (91% and 76%, respectively). However, more survey respondents reported log or heavy timbers (14%) or noncombustible siding (10%) than in the WiRē RA data (5% and 4%, respectively). Refer to figure 6.

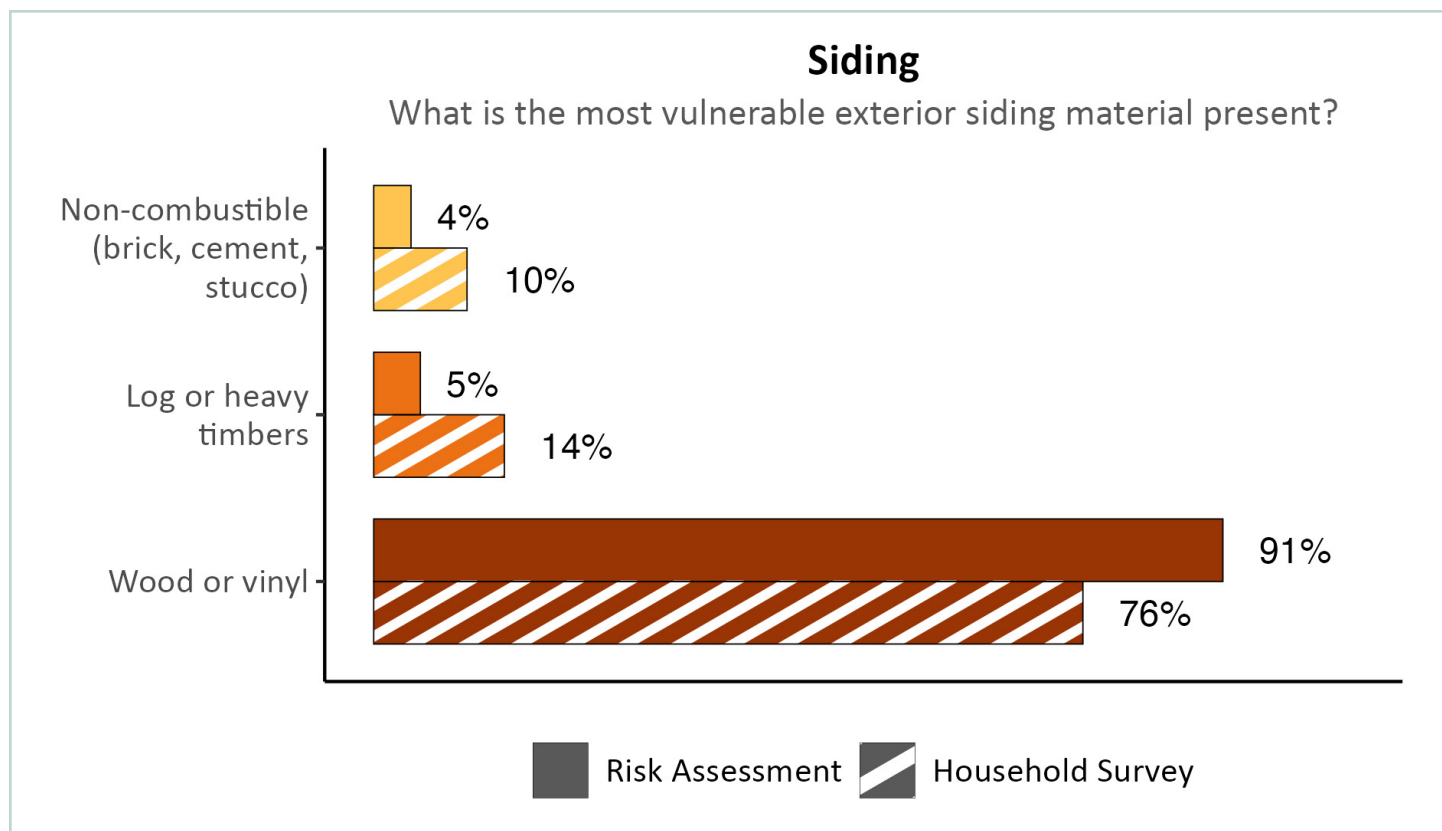


Figure 6—Residential exterior siding type, categorized by material into low, medium, and high-risk categories. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 278.

Risk attribute: combustible attachments—

Attachments to structures (e.g., wooden decks, fences) increase the area exposed to blowing embers in a wildfire event and have the potential to increase convective and radiant heat. Parcels were assessed on the presence or absence of combustible attachments, including a combustible balcony, deck, and fence.

Trained assessors observed the presence of combustible attachments on almost all homes (90%). Similarly, most survey respondents (80%) reported the presence of combustible attachments. However, more survey respondents (20%) reported the absence of combustible attachments compared to the WiRē RA (10%). Refer to figure 7.

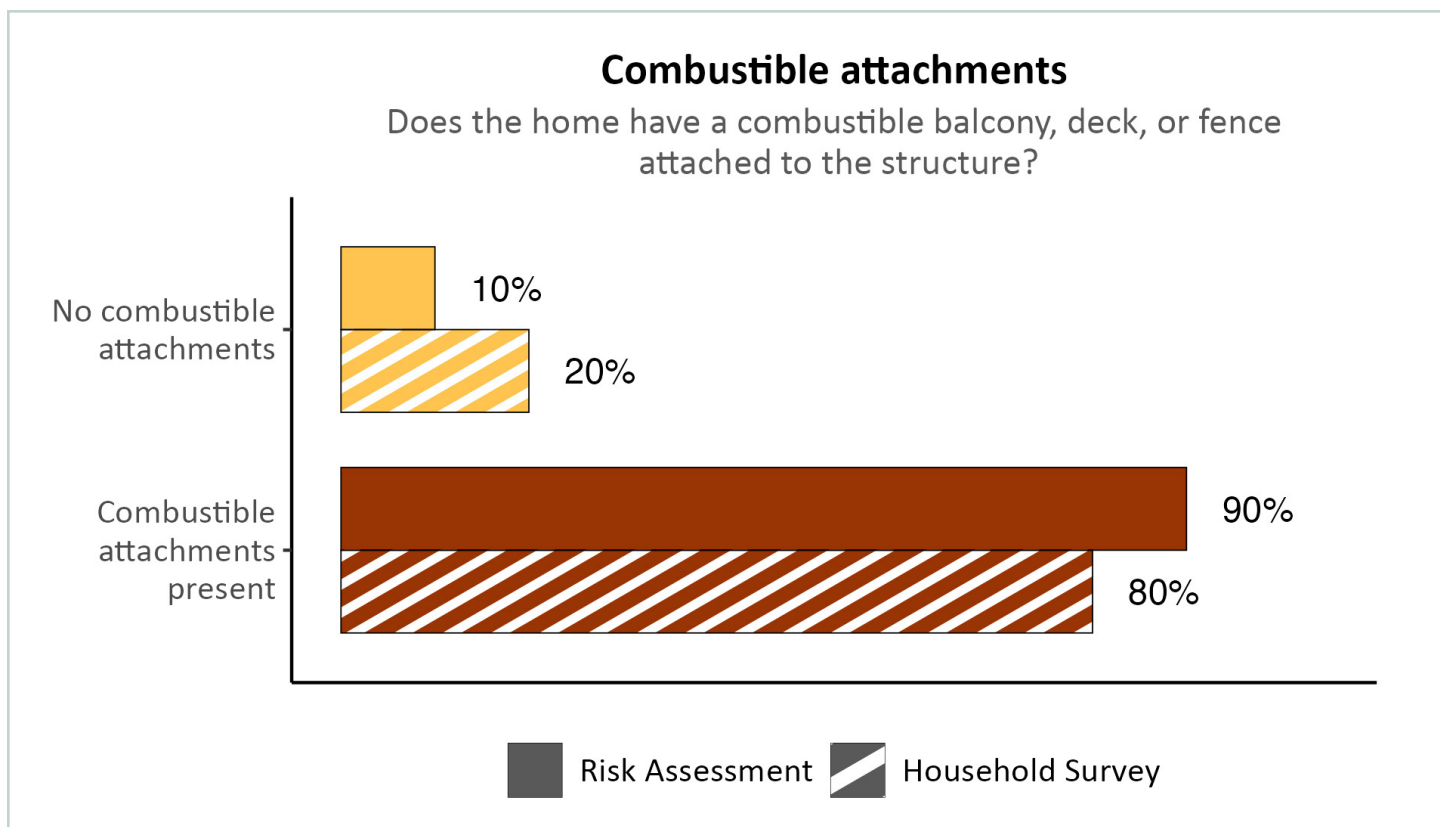


Figure 7—Presence or absence of combustible attachments. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 279.

Risk attribute: proximity to adjacent homes—

Home-to-home ignitions (i.e., conflagration) are a significant factor in the spread of fire through more densely built environments. Homes and structures built with combustible materials can ignite due to radiant heat. Homes located in close proximity are more likely to result in home-to-home ignition. In conflagration events, homes are both the recipients and drivers of fire. Parcels were assessed on the proximity of homes to neighboring homes.

WiRē RA and household survey data reported that most homes (67% and 73%, respectively) were more than 100 feet from another home. According to WiRē RA data, 32 percent of homes were 30 to 100 feet away from other homes, while 24 percent of survey respondents reported a similar spacing. Refer to figure 8.

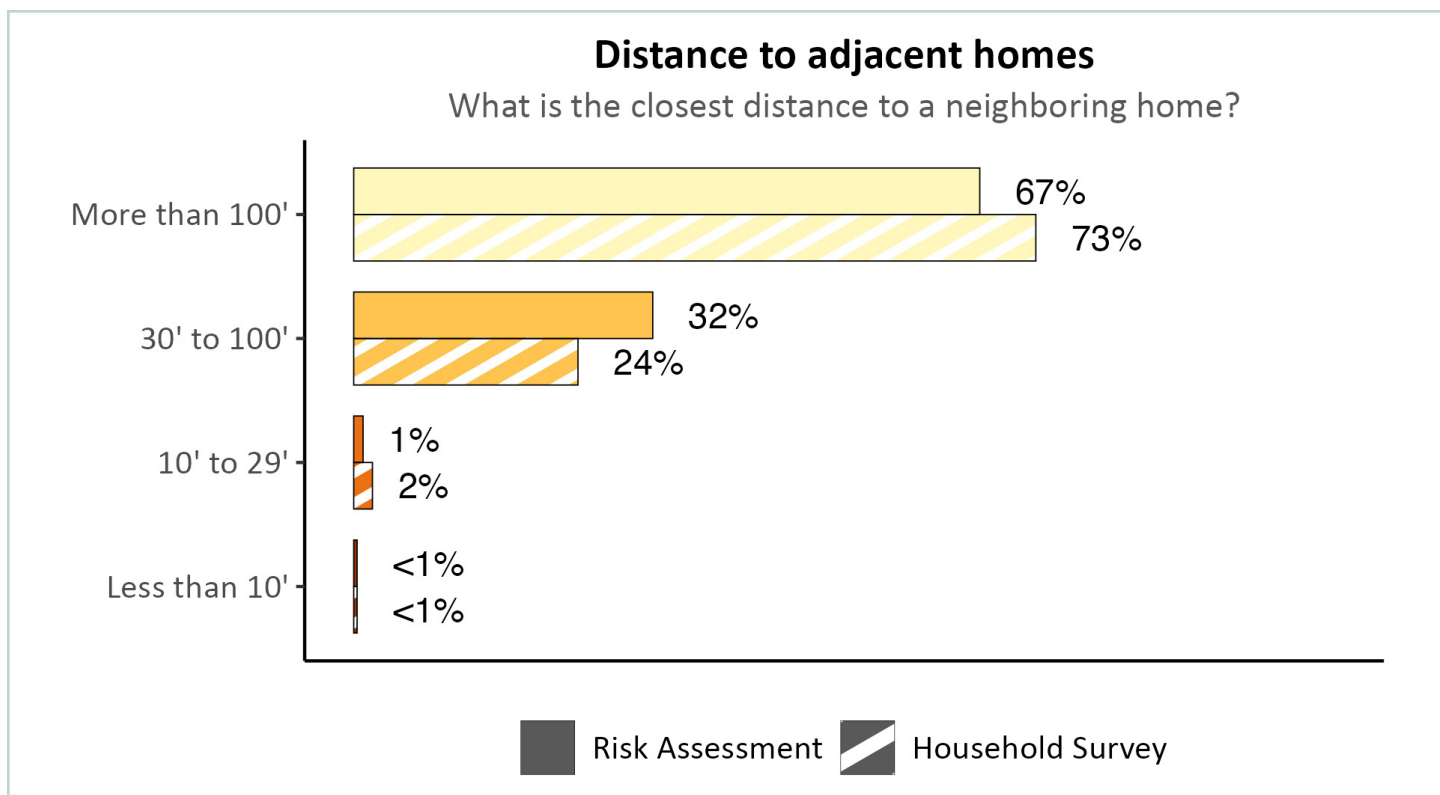


Figure 8—Proximity to adjacent homes, categorized by closest distance to neighboring home. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 279.

Defensible space—

Home ignition is affected by the presence of, or direct contact with, vegetation and other combustible materials which can ignite and transfer flames to the home itself. Additionally, vegetation and combustible materials around the home influence fire behavior and firefighters' ability to access and defend the home (e.g., a canopy fire in a densely treed area around the home is more difficult to suppress than a fire on the ground).

Risk attribute: distance to overgrown vegetation—

Fuels within 100 feet of the home increase the risk of wildfire damage. Particularly flammable or abundant vegetation near the home may ignite and spread fire to the home. Distance to overgrown vegetation (also referred to in earlier versions of the assessment as “defensible space”) was assessed by the proximity of the home to vegetation categorized as overgrown, dense, or unmaintained.

The survey responses and WiRē RA data were misaligned on this attribute. Over two-thirds (69%) of the properties had between 5 and 29 feet between the house and overgrown vegetation according to WiRē RA data, but only 26 percent of survey respondents saw this to be the case. More than one-half of survey respondents (56%) reported having 30 to 100 feet between their home and overgrown vegetation, while 14 percent of homes fell into this category according to trained assessors. Refer to figure 9.

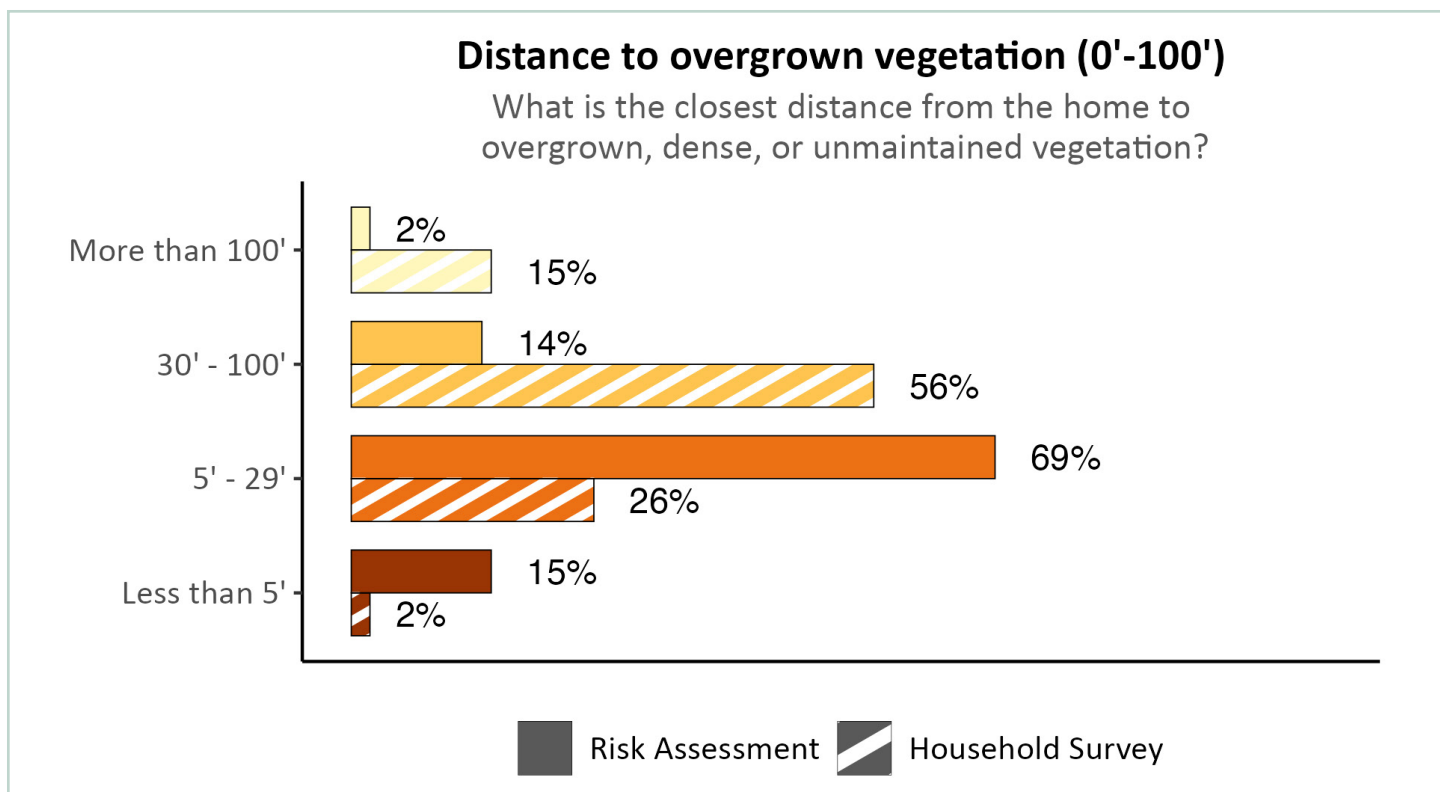


Figure 9—Distance to overgrown vegetation, categorized by distance between the home and overgrown, dense, or unmaintained vegetation. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 278.

Risk attribute: other combustibles—

In addition to vegetation, defensible space includes the presence of other combustible materials within 30 feet of the home such as lumber, firewood, hay bales, propane tanks, storage sheds, and other flammable materials.

The survey responses and WiRē RA data did not align on this attribute. Trained assessors reported 54 percent of homes had less than 5 feet to the nearest combustible item, while 55 percent of the survey respondents reported having 5 to 30 feet between their homes and non-vegetative combustible items. Additionally, 29 percent of survey respondents reported having more than 30 feet of distance, but trained assessors observed only 8 percent of homes in this category. Refer to figure 10.

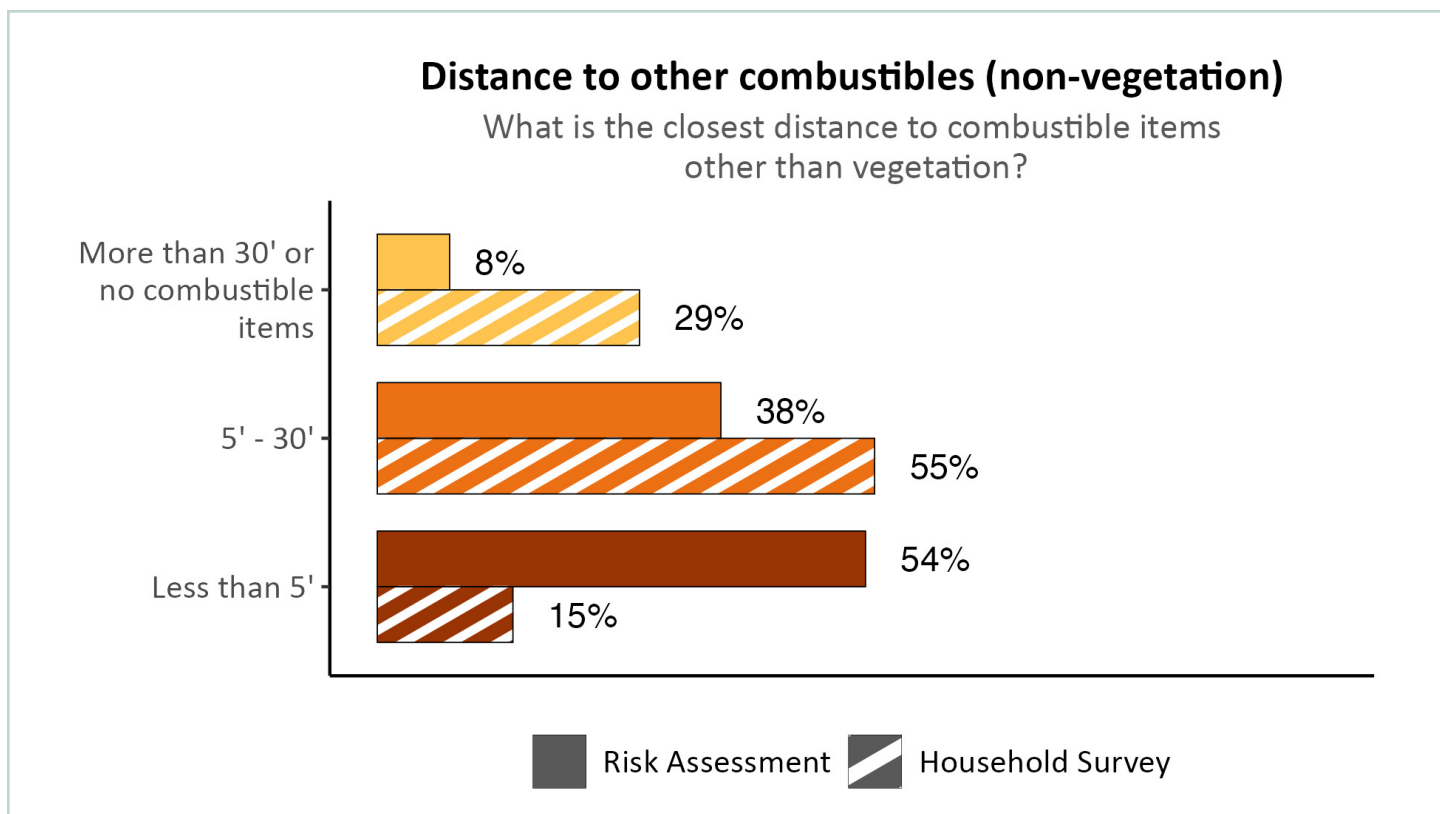


Figure 10—Other combustible materials, categorized by closest distance from home to combustible items other than vegetation. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 278.

Background conditions—

Background conditions may vary from parcel to parcel within communities, creating unique levels of risk for each home. Such conditions include dangerous topography, overall slope of the property, and the type and density of surrounding vegetation. These are further described below.

Risk attribute: distance to dangerous topography—

Wildfire behavior is influenced by topography. Features that can facilitate increased fire behavior (rate of spread, intensity, etc.) such as drainages, narrow canyons, and chimneys are considered when assessing topography. Properties are assessed into categories that measure the home's distance from steep or dangerous topography at distances of less than 50 feet, 50 feet to 150 feet, and over 150 feet.

Trained assessors and survey respondents were not aligned in their understanding of proximity to dangerous topography. While WiRē RA data reported almost all properties (96%) as being more than 150 feet from dangerous topography, household survey data categorized less than two-thirds of homes (63%) this way. Thirteen percent of homes fell into the category of less than 50 feet from dangerous topography according to survey response data. Refer to figure 11.

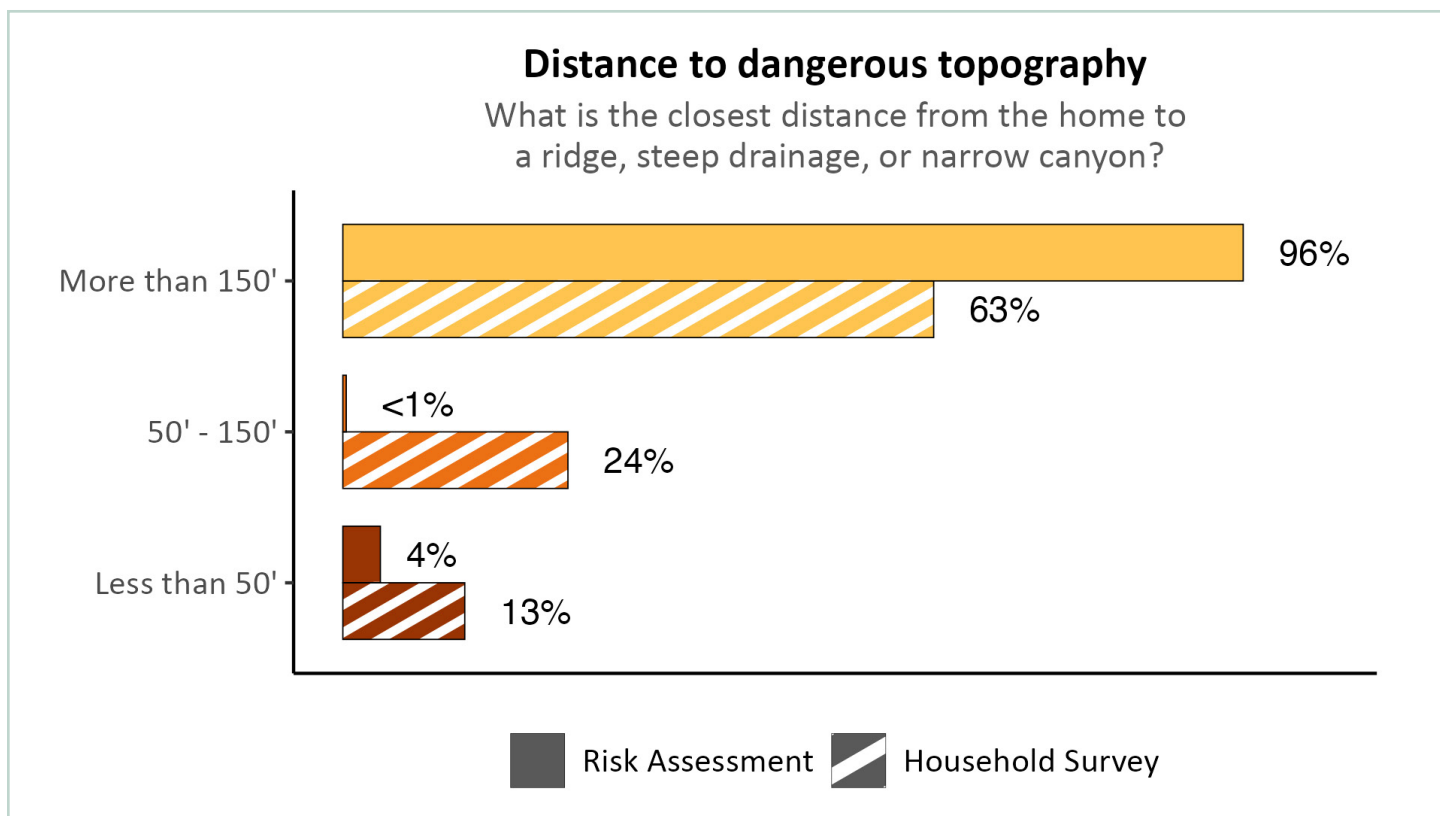


Figure 11—Closest distance from the home to dangerous topography (e.g., a ridge, steep drainage, or narrow canyon). Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 274.

Risk attribute: slope—

Slope is an additional factor that influences wildfire behavior and response. For example, steep terrain can increase the rate of wildfire spread. Additionally, firefighters and their equipment may be hindered by uneven topography.

The survey responses and WiRē RA data did not align on this attribute. Almost all properties (97%) were described as having a gentle or less than 20 percent slope according to WiRē RA data, while just over half of the properties (56%) were classified this way according to survey response data. Almost one-third of survey respondents (31%) reported that the slope of their properties within 150 feet of their homes as having a moderate or 20 percent to 45 percent slope and another 13 percent reported a steep or more than 45 percent slope. Trained assessors classified three percent of the properties as having a moderate slope and less than one percent of the properties as having a steep slope. Refer to figure 12.

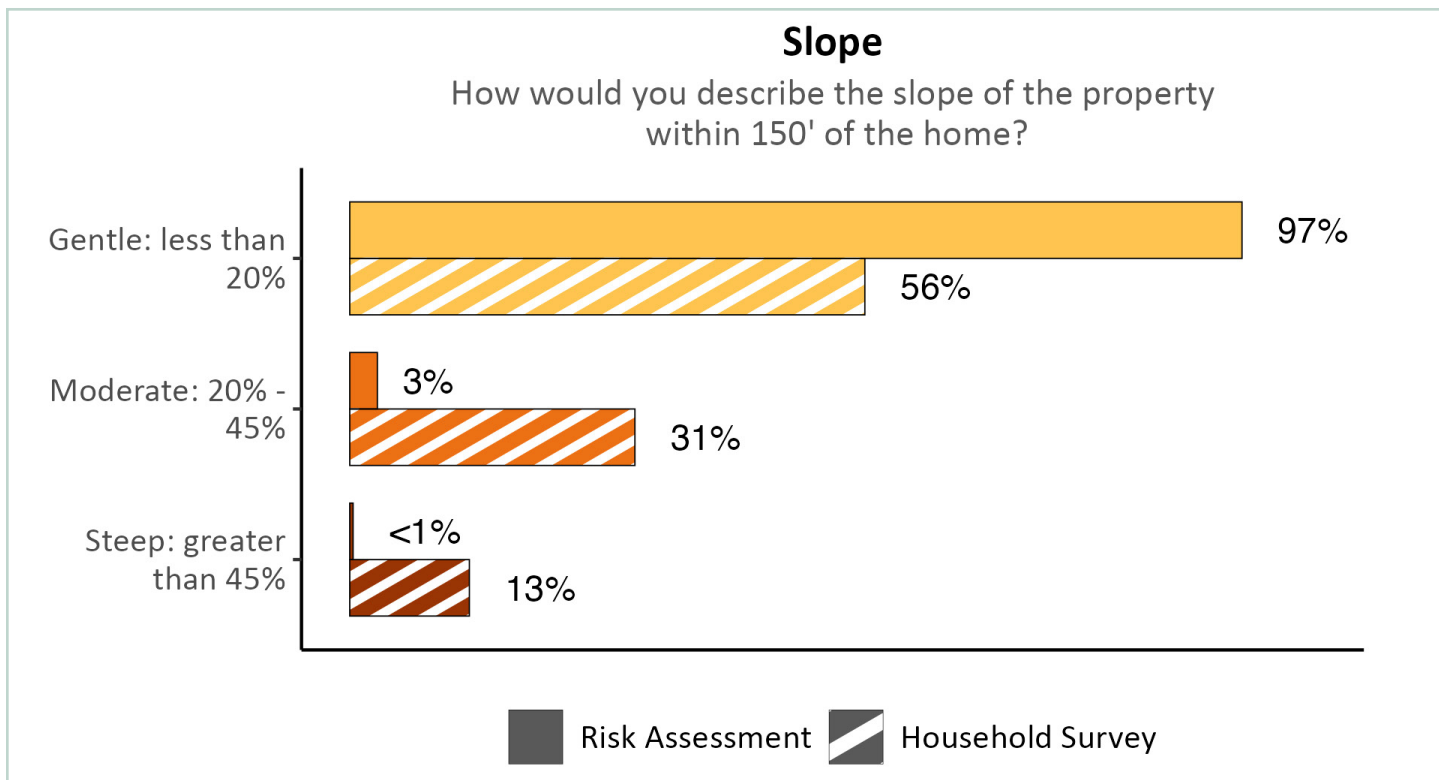


Figure 12—Overall slope of property. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 278.

Risk attribute: adjacent fuels—

Vegetation surrounding the home beyond the defensible space zone is another factor in determining wildfire behavior. Properties are assessed on the dominant vegetation type present between 100 feet and 150 feet from the home, regardless of whether this falls within the property boundary. The household survey provided six descriptions of vegetation that were collapsed into three categories of vegetation: light, medium, and dense. Light was for properties with grasses less than one-foot, dead material, or those with isolated shrubs or trees. Medium included properties with wooded areas with only hardwood trees and no small trees or shrubs or tall dead grasses, or those with mixed hardwood and spruce, no small trees or shrubs and tall dead grasses underneath. Dense was for properties surrounded by mixed wooded areas with hardwood and spruce trees, lots of small trees and shrubs, and tall dead grasses underneath, or those with dense spruce forest.

The WiRē RA data and household survey data were not in agreement on this attribute. According to trained assessors, 79 percent of properties had dense fuels between 100 and 150 feet from the house, and another 19 percent of properties had medium fuels at that distance. In contrast, survey respondents reported 59 percent properties as having dense fuels in that 100-to-150-foot range and an additional 34 percent of properties as having medium adjacent fuels. Refer to figure 13.

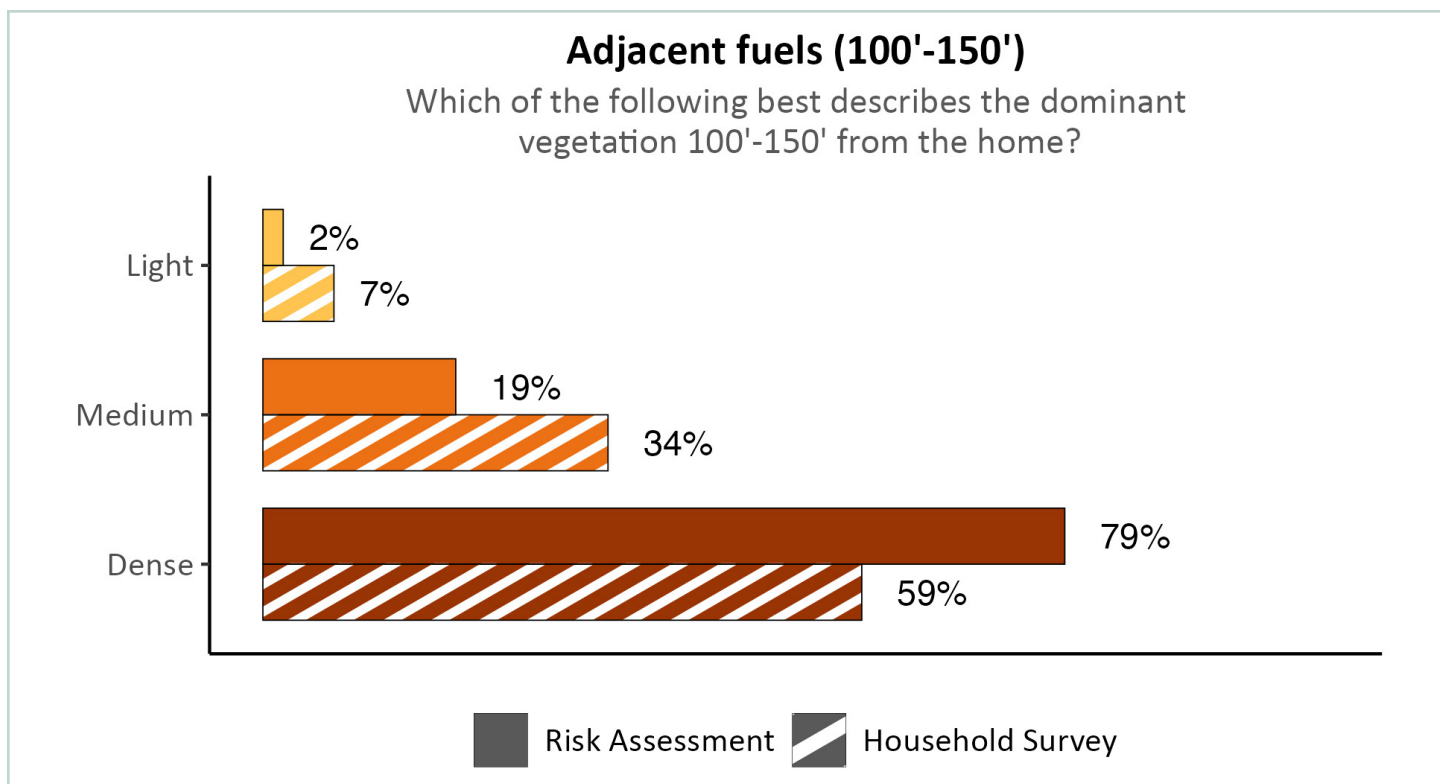


Figure 13—Adjacent fuels, categorized by the density of dominant vegetation 100 to 150 feet from the home. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 277.

Access—

During a wildfire, residents must have evacuation route options and emergency responders must be able to safely identify and access properties. The following four attributes describe access for both residents and emergency responders in terms of home identification, evacuation routes, and parcel accessibility by way of a driveway.

Risk attribute: address posting—

The visibility of home addresses in various conditions of smoke and daylight is critical for swift and safe response. Properties addressing conditions are assessed based on local standards of signage that are posted and visible from the primary road.

Local standards for property address postings: posted address visible from the road, is reflective, displayed by 3-inch numerals on a contrasting background (white letters on a green background), and ensured the materials were durable.

The RA data and survey responses did not completely align on this attribute. The WiRē RA data and household survey data both classified around a quarter of properties as not having a posted or visible address posting (20% and 25%, respectively). However, more trained assessors reported address postings that met all local standards (74%) while survey respondents only reported about one-half (51%) of address posting as meeting local standards. Refer to figure 14.

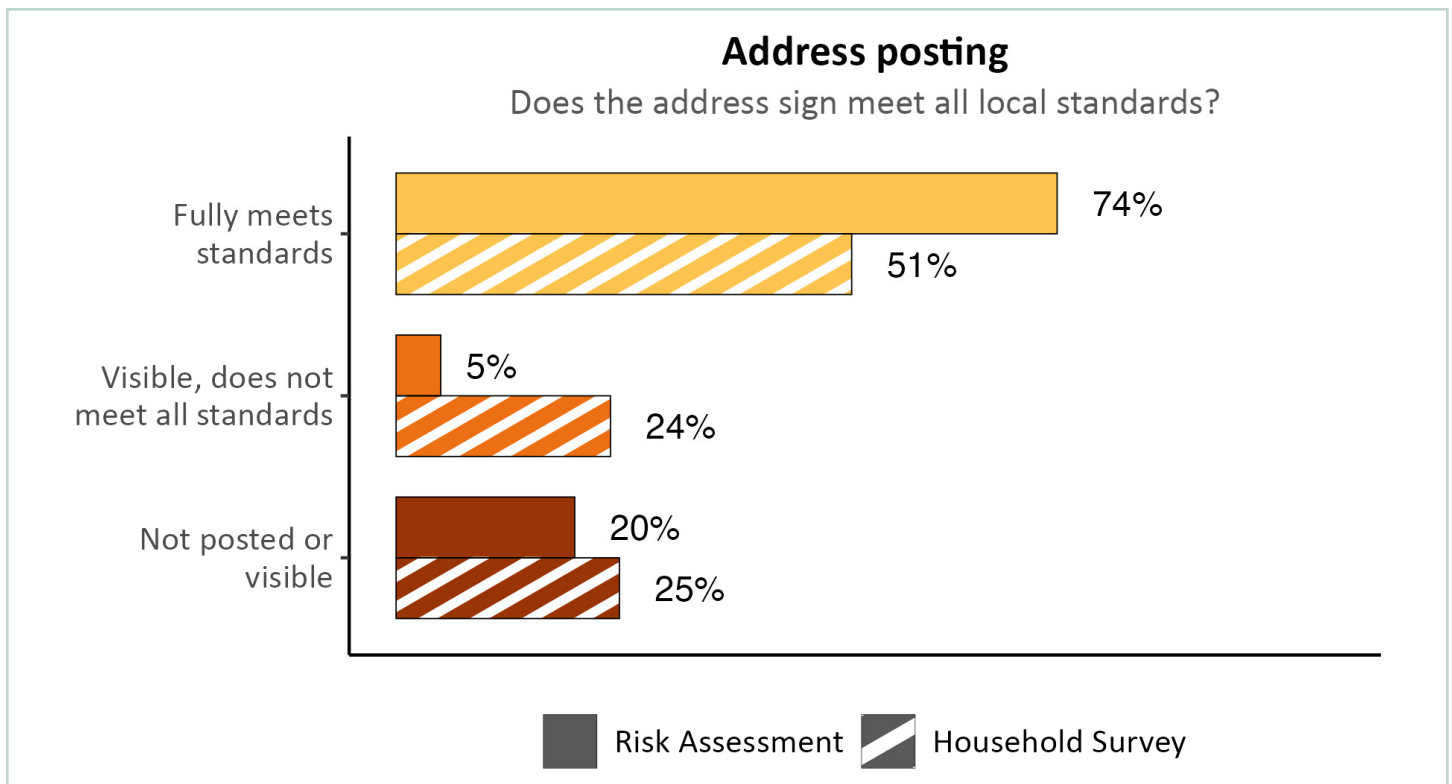


Figure 14—Characteristics of property address. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 274.

Risk attribute: evacuation routes for ingress/egress—

Resident evacuation options and safe routes for emergency responders to access properties are critical. This access is dictated by existing road systems within communities. Wildfire conditions may block evacuation routes, limiting residents' ability to safely evacuate. Thus, properties are evaluated based on having two (or more) roads in and out.

The WiRē RA data and survey data were not aligned on this attribute⁸. Trained assessors reported that less than one-half of the properties (47%) had one road in or out of the community. In contrast, 74 percent of survey responders stated they only had one road in or out of their community. Refer to figure 15.

⁸ This could be due to the lens through which the trained assessors and household survey respondents viewed this question. Trained assessors considered ingress/egress from the home whereas survey respondents may have viewed this from the perspective of getting across the bridge. If taking a broader lens, there is only one way in/out of the community even if there are multiple routes from an individual home.

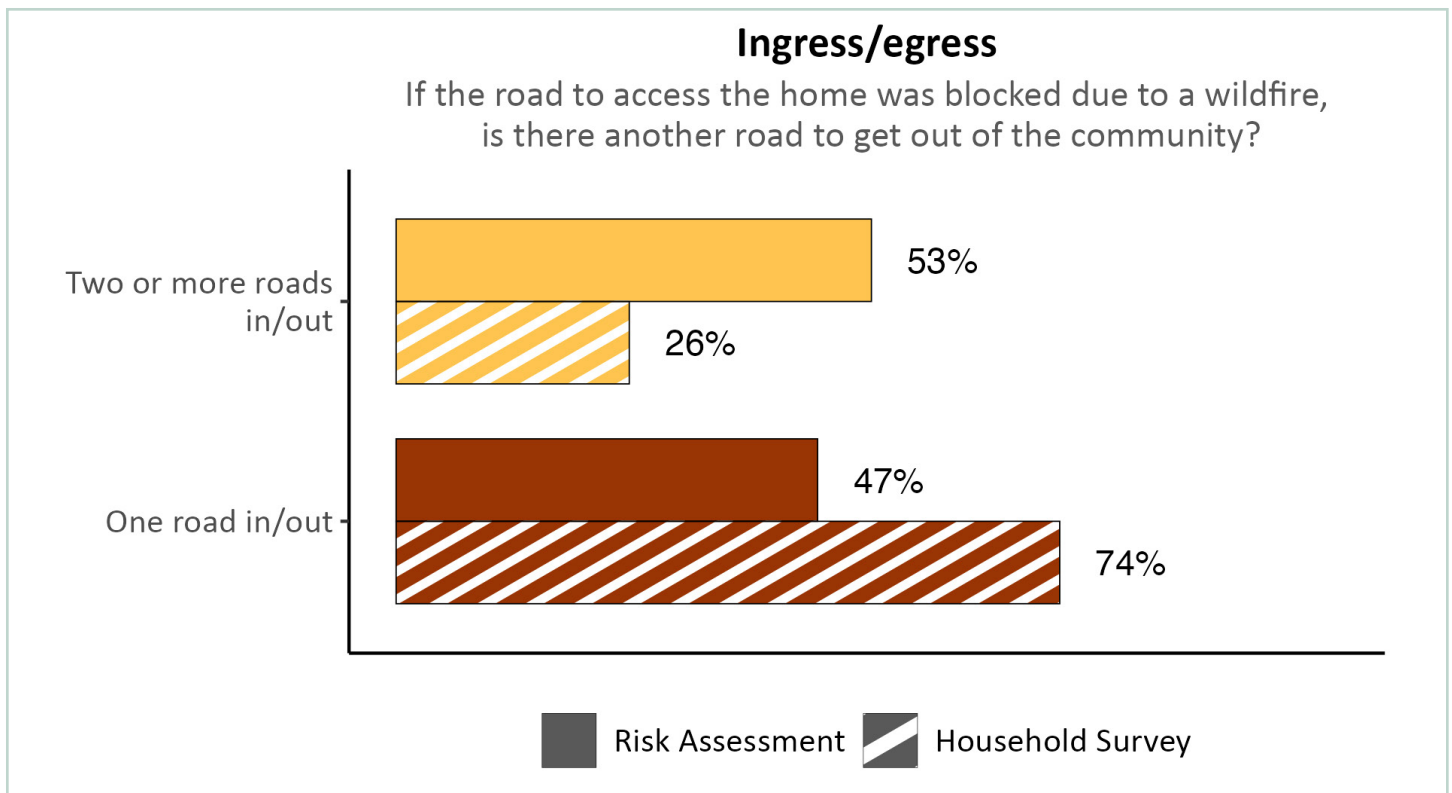


Figure 15—Number of evacuation routes in or out of community. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 257.

Risk attribute: driveway clearance—

Emergency vehicles must be able to easily access and quickly exit a property. This ability can be affected by a driveway's width, as well as narrow gates or low hanging tree branches. Driveway clearance is assessed based on vertical and horizontal clearance and is reported as meeting both standards, meeting one standard but not the other, or not meeting either standard. To meet all clearance standards, the driveway must be at least 13.5 feet in height and 20 feet in width.

The WiRē RA data and household survey data revealed discrepancies regarding this attribute. Survey respondents reported that 43 percent of driveways met both standards, whereas trained assessors reported only 6 percent. Additionally, while survey data reported 48 percent of driveways as meeting one of the standards, WiRē RA data classified nearly all properties (90%) as meeting on standard. Refer to figure 16.

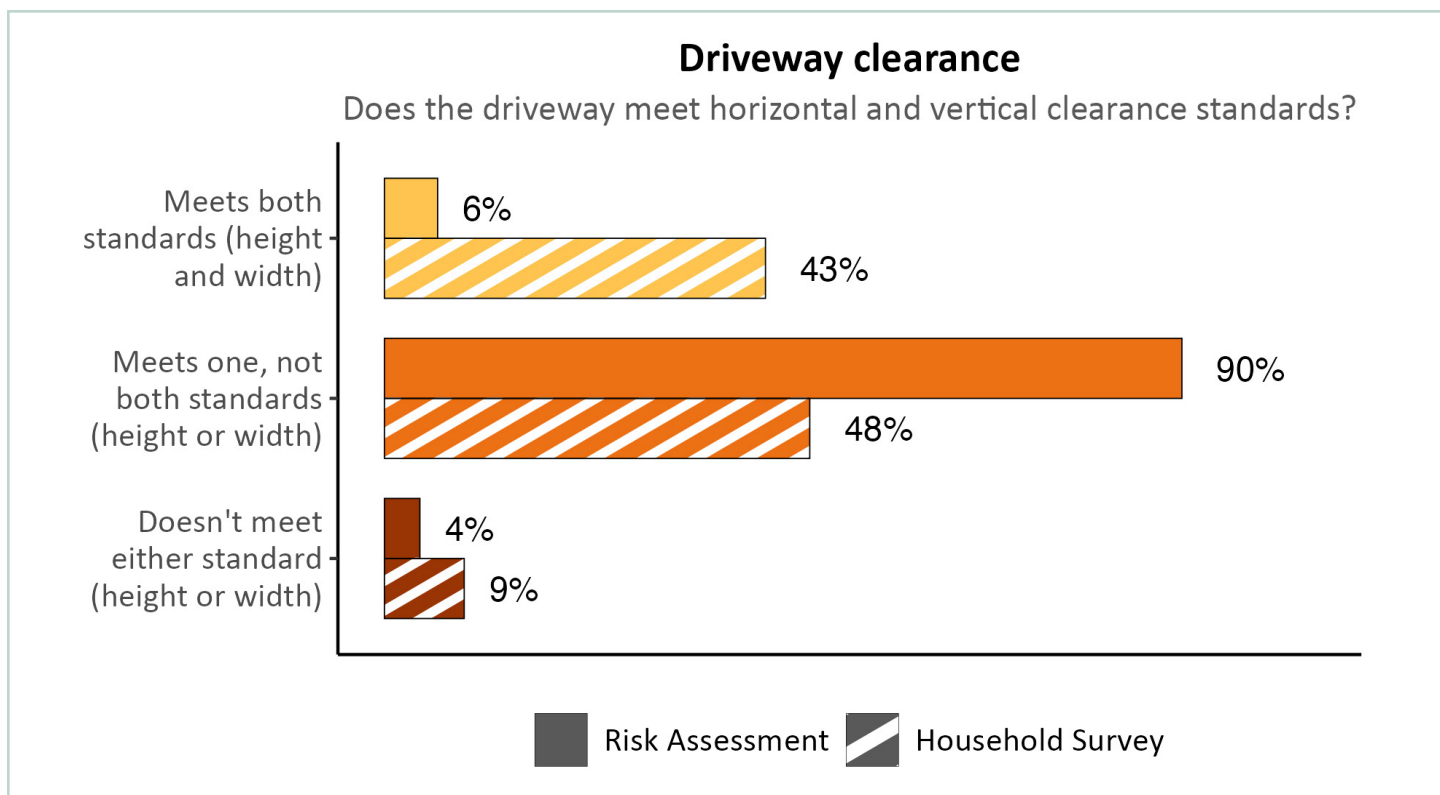


Figure 16—Width of residence driveway at its narrowest point. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 230.

Risk attribute: driveway length—

Similar to driveway clearance, the length of a driveway and its turnaround space also affects the ability of fire engines to turn around and safely respond to wildfire. The WiRē RA distinguishes between properties with driveways that are shorter than 150 feet, driveways that are longer than 150 feet but with a turnaround suitable for a Type 1 engine, and driveways longer than 150 feet and without adequate turnaround space.

The WiRē RA and household survey data reported similar trends regarding driveway length and space for turnaround. Trained assessors and survey respondents both reported less than one-quarter of properties as being 150 feet or longer without adequate turnaround space (22% and 17%, respectively). According to the WiRē RA data, 38 percent of driveways had a length of 150 feet or longer with adequate turnaround, while 40 percent were less than 150 feet long. Similarly, survey respondents reported 49 percent of driveways as being 150 feet long with adequate turnaround, and 35 percent as shorter than 150 feet in length. Refer to figure 17.

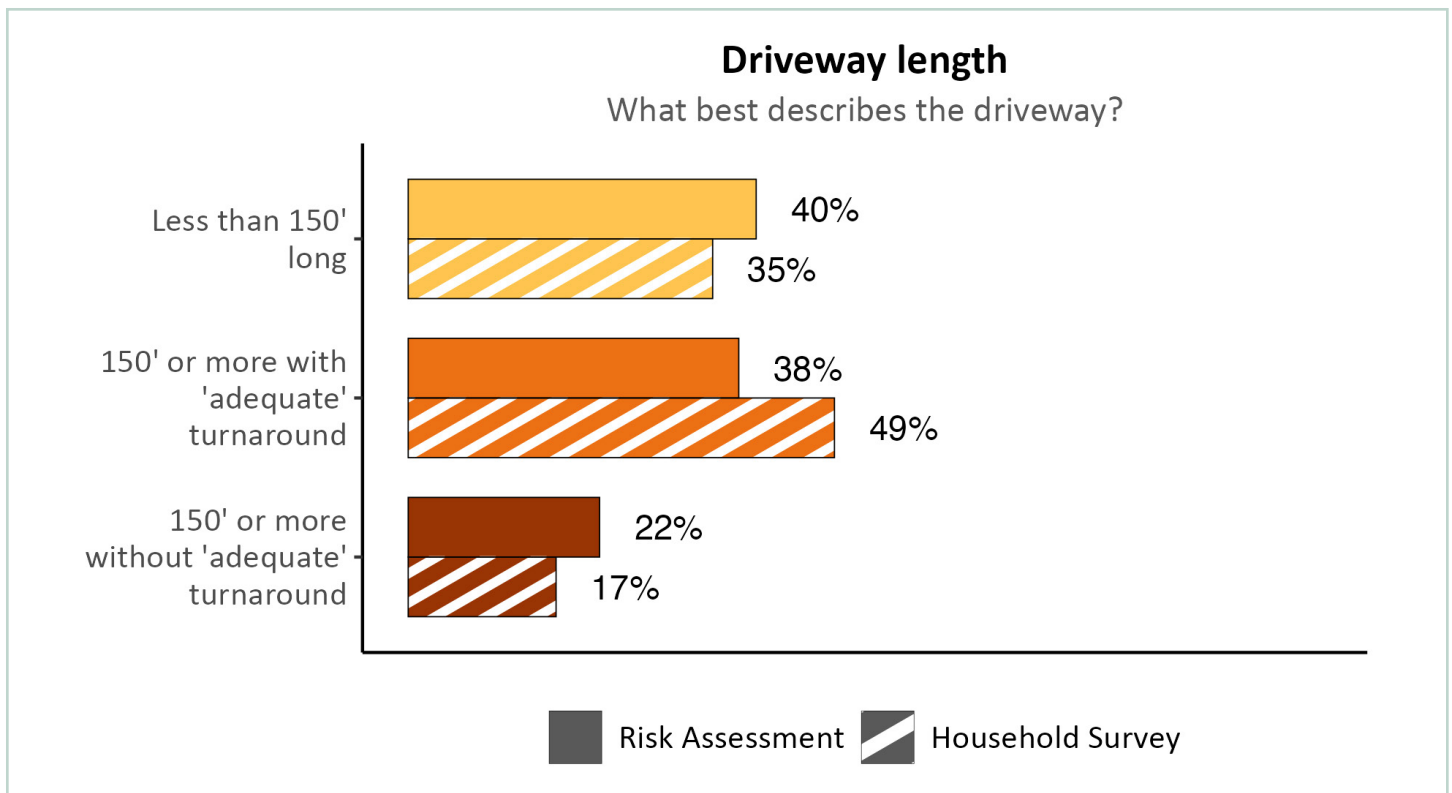


Figure 17—Driveway length and presence of turnaround. Comparison of household survey data as reported in 2024 by survey respondents in the Funny River, Kenai Peninsula Borough, Alaska, study area and paired Wildfire Research (WiRē) parcel-level wildfire risk assessment data. N = 243.

Social Dimensions of Wildfire Risk in Funny River: Results of the Household Survey

In this section, we present the results of the remaining data collected from the household survey to demonstrate the social dimensions of wildfire in this unique study area (refer to Appendix E for household survey questions and responses).

Demographics

Close to half of the survey respondents (43%) reported occupying their homes in Funny River year-round, and an additional 55 percent of owners spend at least some time at their Funny River residence within a year. The average year of construction of the homes in the study area was 1999, and the average year that the survey respondents moved into their homes was 2007. At the time of purchasing or beginning to rent their homes in Funny River, 51 percent of survey respondents reported being very aware of the wildfire risk, 36 percent reported being somewhat aware, and 11 percent reported being unaware of the wildfire risk (refer to fig. 18).

Survey respondents were more likely to identify as male (74%), and the average age of survey respondents was 67 years old. Forty-nine percent of survey respondents reported holding a bachelor's degree or higher, and of those, 34 percent held an advanced degree (e.g., M.D., M.A., M.S., Ph.D.). Sixty-four percent of survey respondents were retired, 26 percent worked full-time, 6 percent worked part-time, and 4 percent were unemployed. Forty percent of survey respondents reported annual household incomes of \$100,000 or greater; 36 percent reported \$50,000 to \$99,999; and 24 percent reported annual household incomes of less than \$50,000.

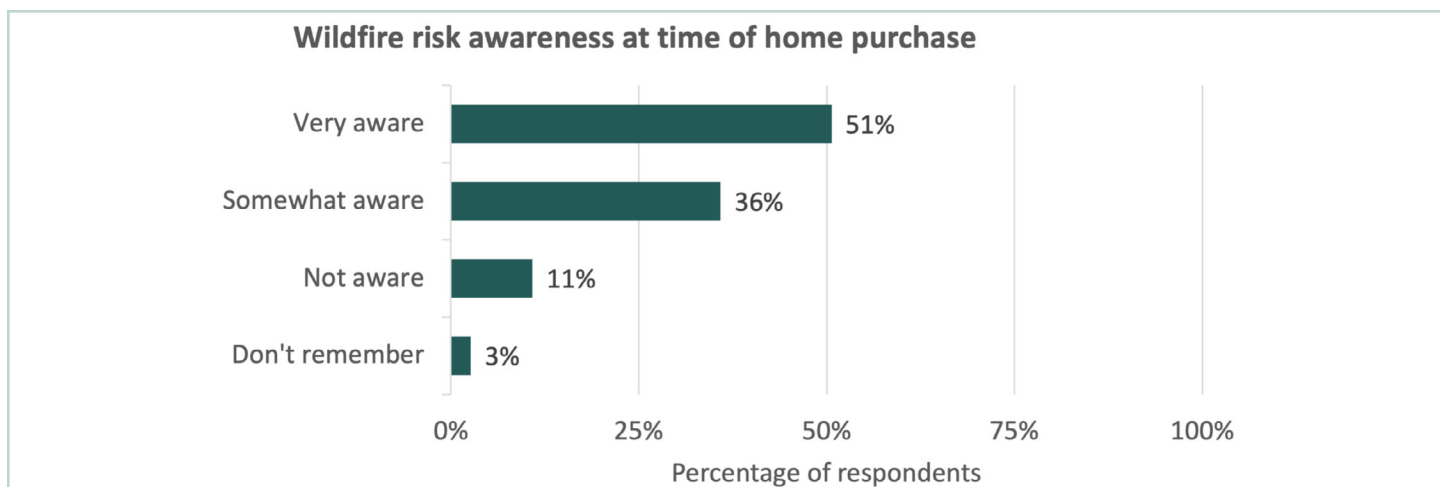


Figure 18—Respondents’ awareness of wildfire risk, when they bought or began renting their home, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 304 respondents to this survey question.

Wildfire Experience and Risk Perceptions

Wildfire experience—

Less than one-half of survey respondents (40%) have evacuated due to wildfire in the past. Almost none of the survey respondents reported having experienced smoke damage (2%), fire damage (1%), or destruction of their residences (1%) due to wildfire (refer to fig. 19).

While only a few survey respondents (1%) reported wildfire on their properties, 89 percent reported that a wildfire had come within 10 miles of their properties (refer to fig. 20).

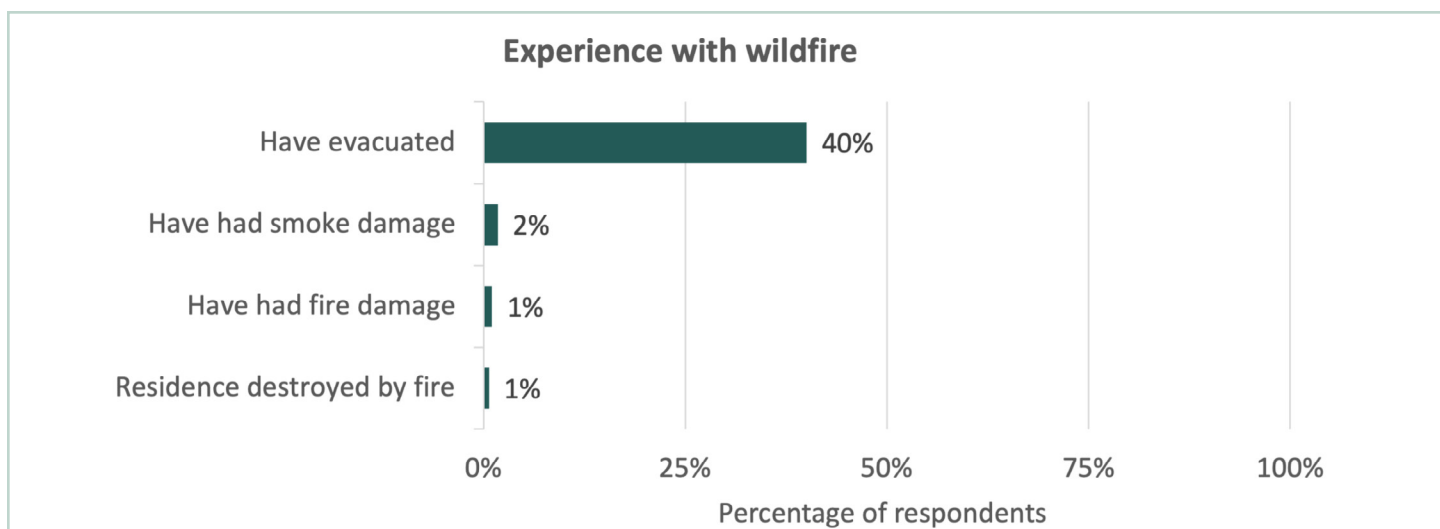


Figure 19—Respondent experience with various effects of wildfire, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 286–302 respondents to these survey questions.

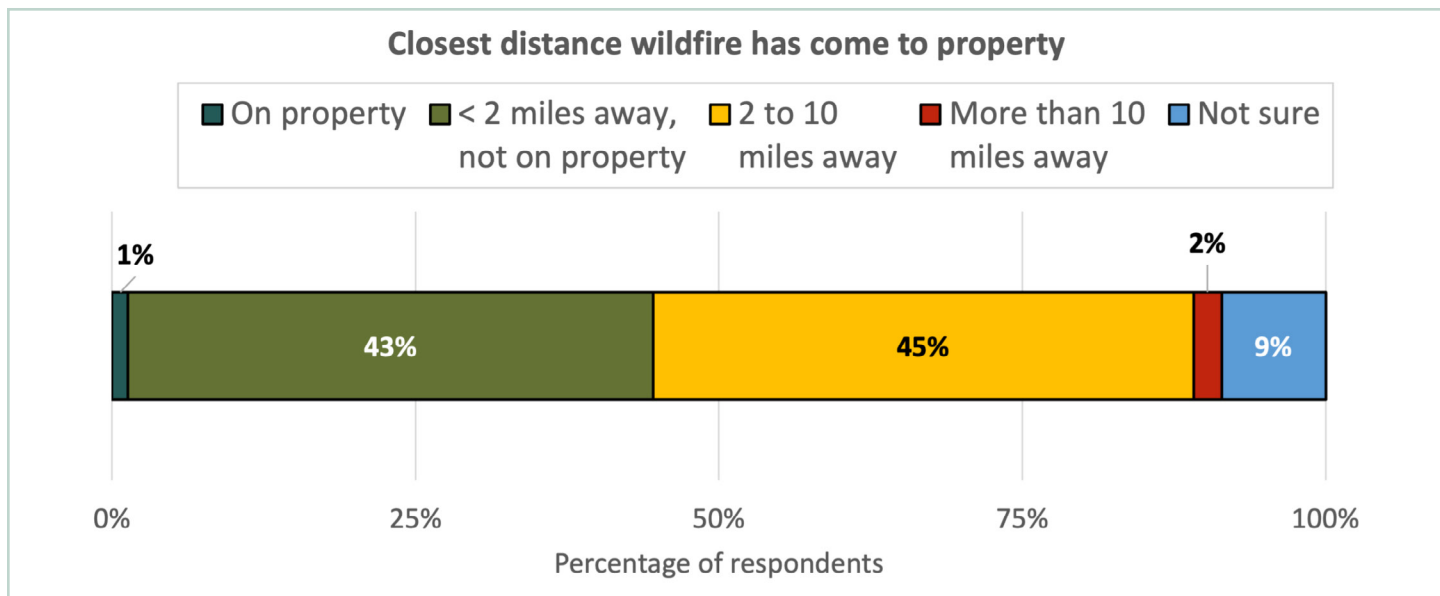


Figure 20—Respondent estimates of how close a wildfire has come to their property, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 303 respondents to this survey question.

Perceptions of risk—

Survey respondents were asked to consider the likelihood of the occurrence of wildfire on their properties and potential outcomes in that event. Fifty-one percent agreed or strongly agreed with the statement, “My property is at risk of wildfire.” However, less than 1 percent of survey respondents agreed or strongly agreed with the statement, “I plan to move out of the area in the next 12 months because of wildfires” (refer to fig. 21).

Despite survey respondents stating that their properties were at risk of wildfire, 28 percent of respondents reported an expectation of a 50 percent or greater chance of wildfire on their properties in the next year. Forty-nine percent of survey respondents thought it likely there would be severe damage or destruction of their home if there was wildfire on their property (refer to fig. 22).

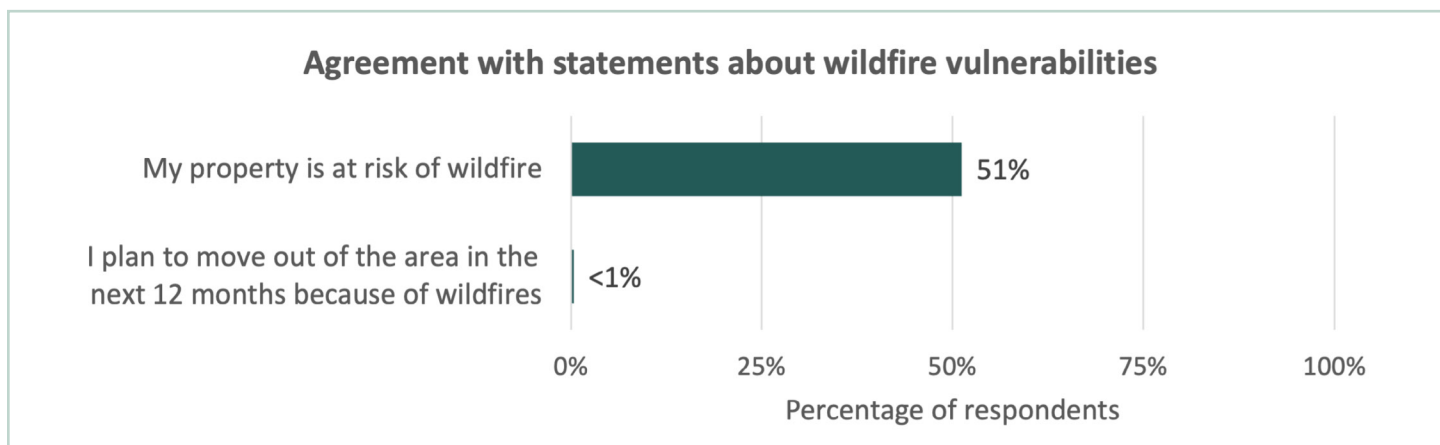


Figure 21—Agreement (“agree” or “strongly agree”) with statements about whether wildfire threatens the respondent’s property and water supply, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 297 respondents to each survey statement listed.

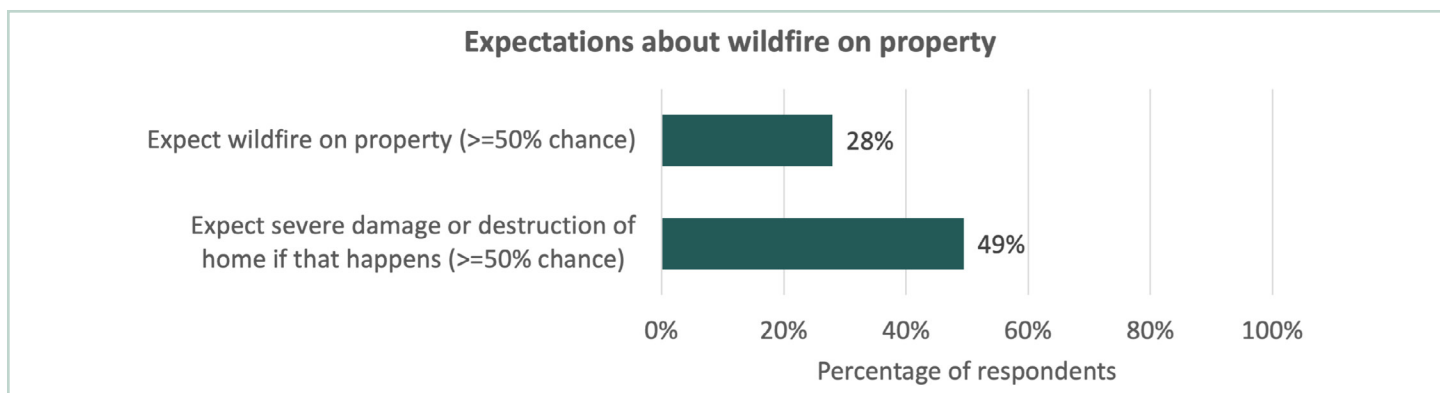


Figure 22—Estimate of the chances (>=50% chance) of a wildfire on property in the next year, and chances (>=50% chance) of losing home in that case, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 293 respondents to the two survey statements listed.

When asked who would protect their homes in the event of a wildfire, 30 percent of the survey respondents believed it was very or extremely likely that they would put the fire out themselves. Additionally, 24 percent thought it was very or extremely likely that the fire department would save their home (refer to fig. 23).

Regarding potential outcomes, 48 percent of respondents reported that, in the event of a wildfire on their properties, it was very or extremely likely that their trees and landscapes would burn. Furthermore, around one-third believed their homes would sustain smoke damage (38%), or physical damage (33%) was very or extremely likely. Additionally, 32 percent believed it was very or extremely likely that their neighbors' homes would be damaged or destroyed, while fewer thought their own homes would be destroyed (21%) or that they would lose money due to loss of business or income (13%) (refer to fig. 24).

More survey respondents indicated it was very or extremely likely that their home would be ignited by direct flame (41%) than embers (22%) or nearby homes (13%) if there was a wildfire on their property (refer to fig. 25).

Most respondents identified various factors as major contributors to wildfire risk. Around three-quarters believed that vegetation on their neighbors' properties (75%), on nearby public or undeveloped land (72%), or their own property (72%) would contribute somewhat or a lot to the risk of property damage from a wildfire. Additionally, a majority indicated they thought physical characteristics of their own residence or other buildings on their property (62%) or the lack of water supply for suppression (55%) would be a contributing factor (refer to fig. 26).

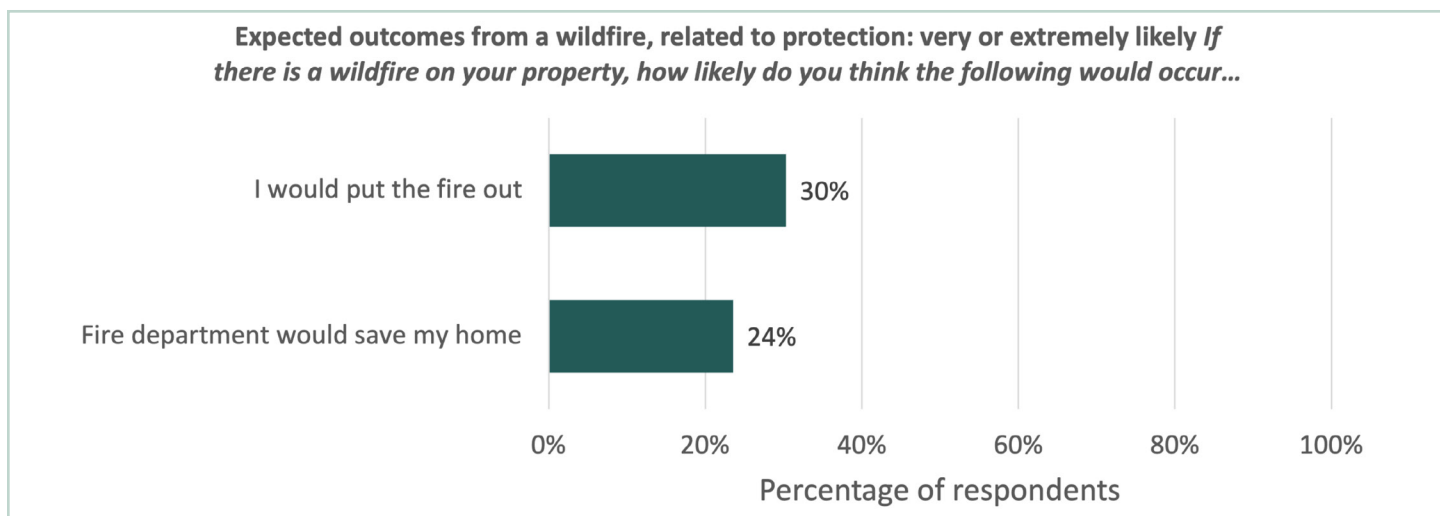


Figure 23—Percentage of respondents who thought the above source of protection to their home were very or extremely likely, in the event of a wildfire on their property, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 297 respondents to each survey statement listed.

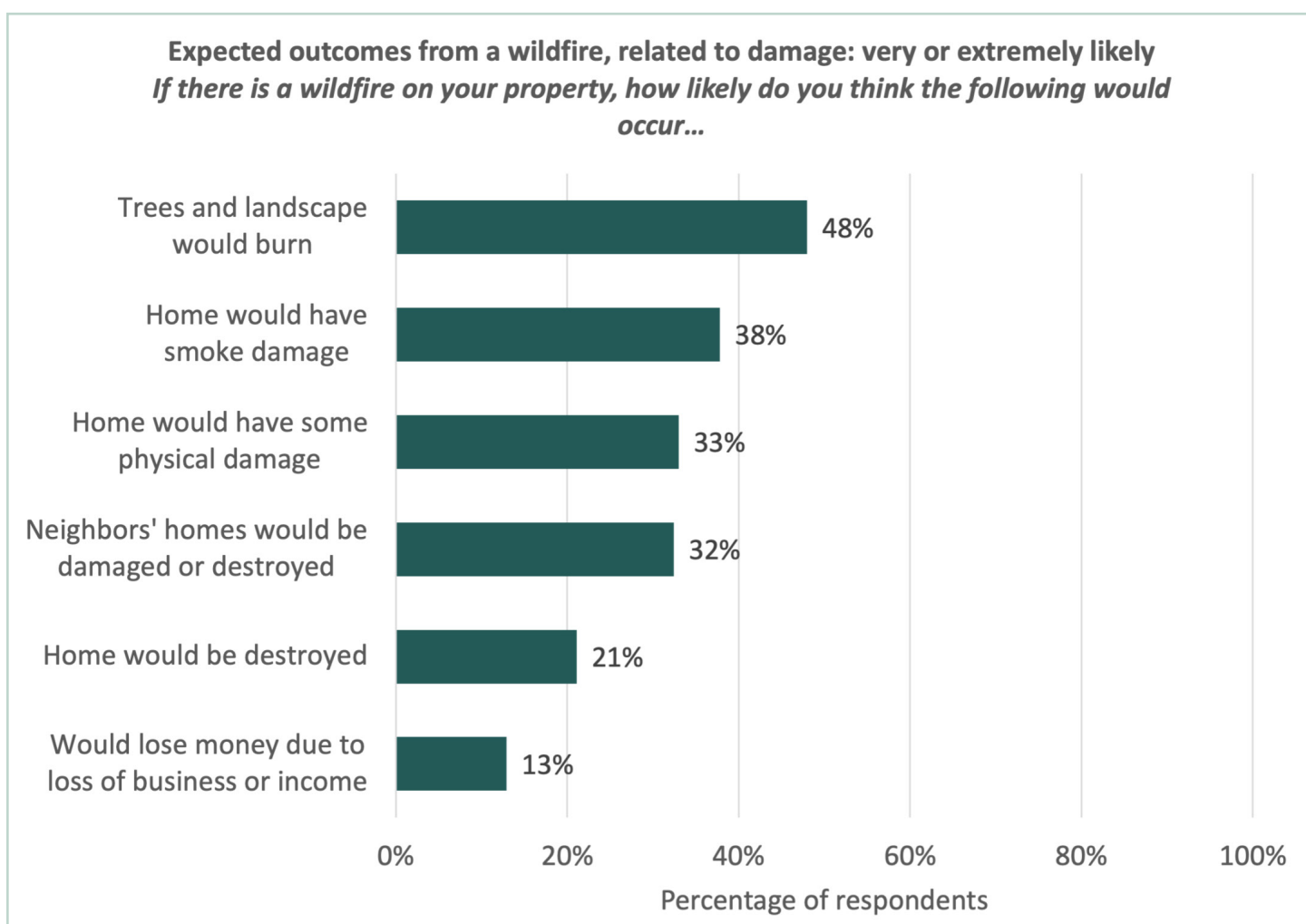


Figure 24—Percentage of respondents who thought the above forms of wildfire damage were very or extremely likely, in the event of a wildfire on their property, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 291–296 respondents to each survey statement listed.

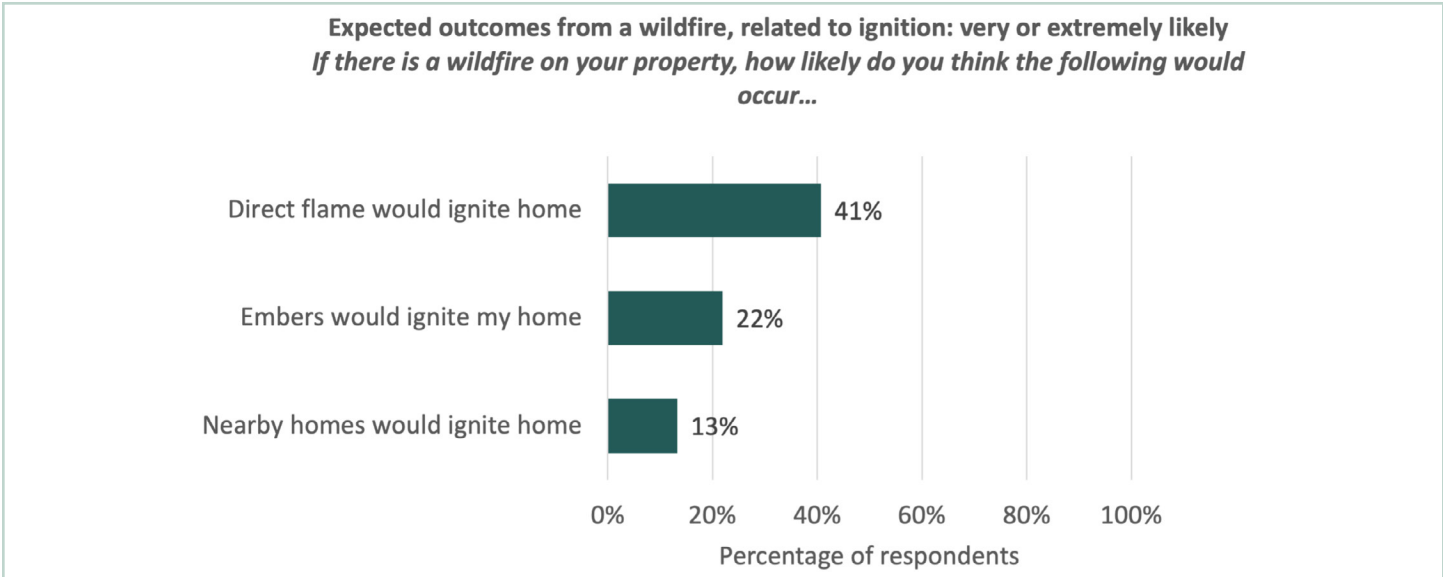


Figure 25—Percentage of respondents who thought the above sources of ignition were very or extremely likely in the event of a wildfire on their property, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 290–294 respondents to each survey statement listed

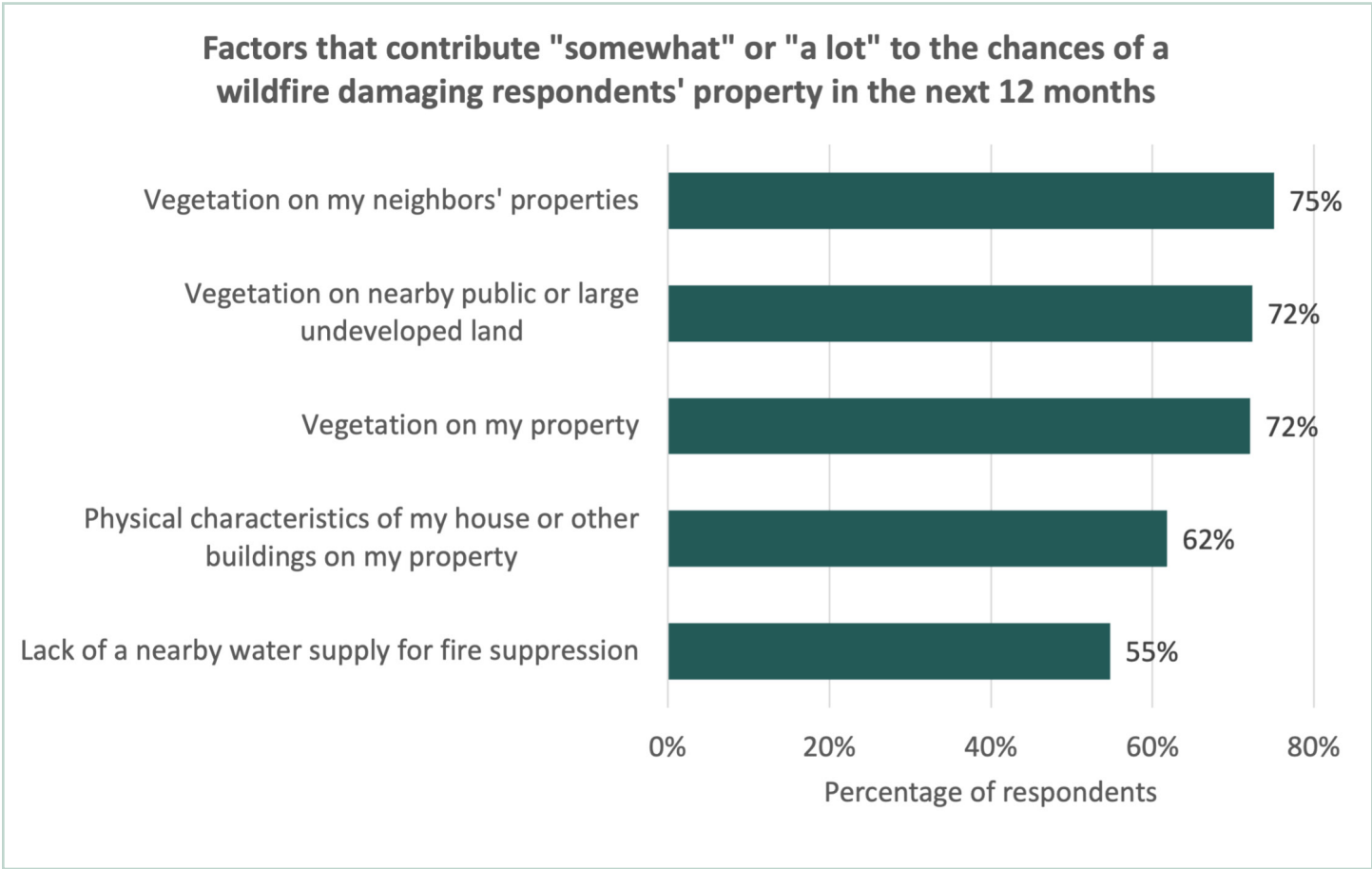


Figure 26—Percentage of respondents who thought the above factors contribute “a lot” to the chances of a wildfire damaging their property in the next 12 months, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 288–294 respondents to each survey statement listed.

Communication About Wildfire Risk

This section summarizes survey responses related to different forms of communication about wildfire risk, including via private channels such as conversations with neighbors or interactions with insurance companies. It also describes currently used and preferred sources of wildfire risk information and preferred channels (e.g., e-newsletter, radio, in person) for receiving wildfire risk information.

Communication with neighbors and insurance—

Over one-half (59%) of survey respondents reported talking to their neighbors about wildfire (refer to fig. 27). These interactions can help spread information about localized wildfire risk.

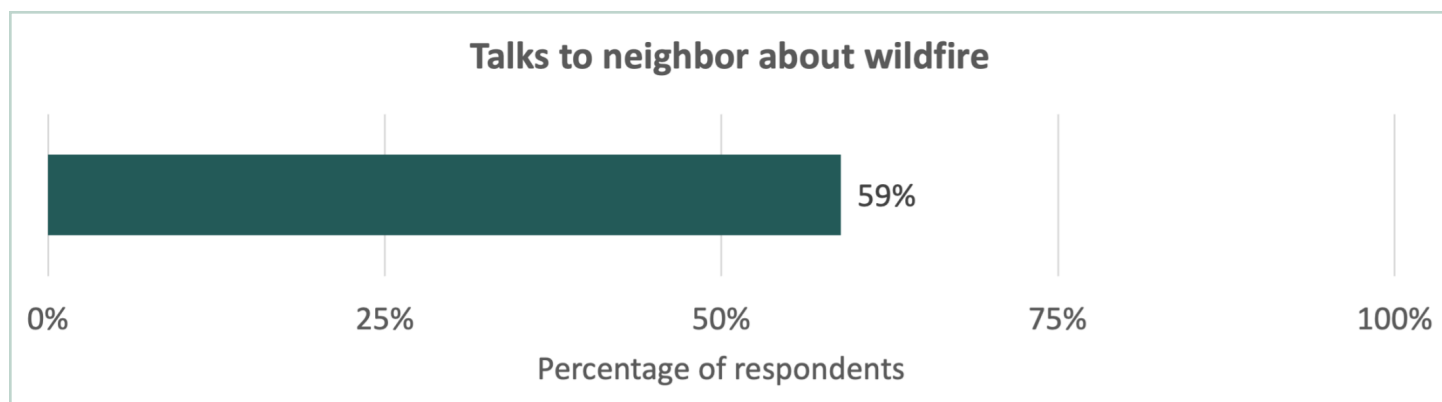


Figure 27—Percentage of respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska, who reported talking to their neighbor about wildfire, as reported in 2024. N = 299 respondents to this survey question.

Over three-quarters of survey respondents (76%) reported having homeowners' insurance, yet less than two-thirds (56%) reported that they thought their home was adequately insured. Further interaction with insurance agencies has the potential to influence homeowners' knowledge and perceptions of wildfire risk and motivate mitigation activities. Very few respondents reported being required to take action to reduce risk (9%), having to pay a higher premium due to wildfire risk (8%), receiving a discount because they reduced their risk (6%), or refused coverage due to their wildfire risk (3%). Refer to figure 28.

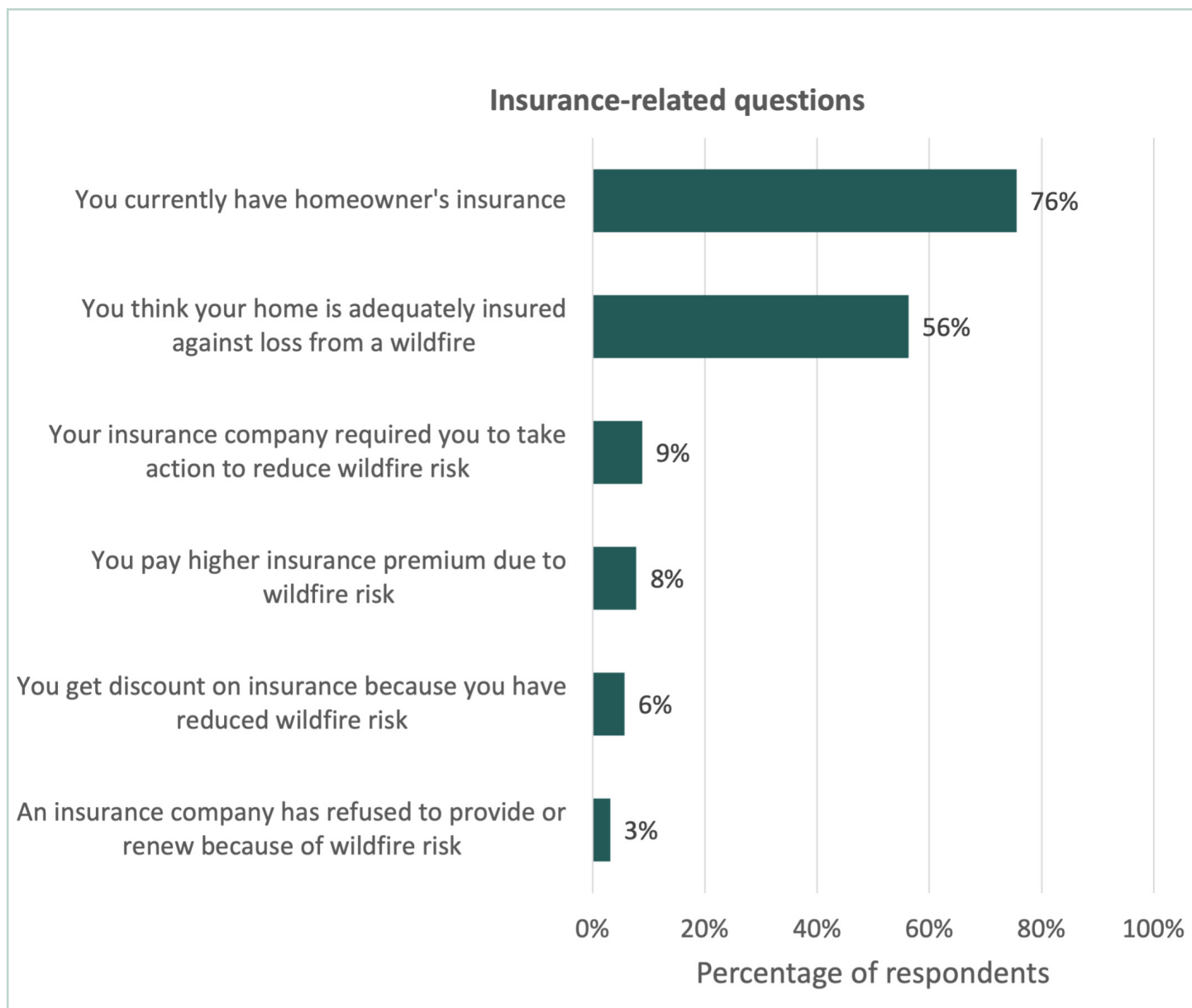


Figure 28—Respondents' knowledge of and experience with various insurance company actions, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 282–299 respondents to each statement.

Sources of information and reported usefulness—

Survey respondents were asked whether they had received wildfire risk information from various sources and to evaluate the usefulness of each source they had used. Media was the most received source of information according to survey respondents (56%), but only 30 percent of those recipients rated the source as very or extremely useful. The CES and the KPB OEM were the second and third most received sources (51% and 43%, respectively). The CES and the KPB OEM were reported as the topmost useful sources by recipients (63% and 51% respectively). Additional sources that survey respondents found very or extremely useful were Alaska Firewise (51%), Alaska Division of Forestry and Fire Protection (48%), and community groups and the Kenai Peninsula Borough's Ready-Set-Go! Program (both 47%). Refer to figure 29.

Notably, only 17 percent of survey respondents indicated that they knew the number to reach the Office of Emergency Management call center, a resource with up-to-date local emergency information.

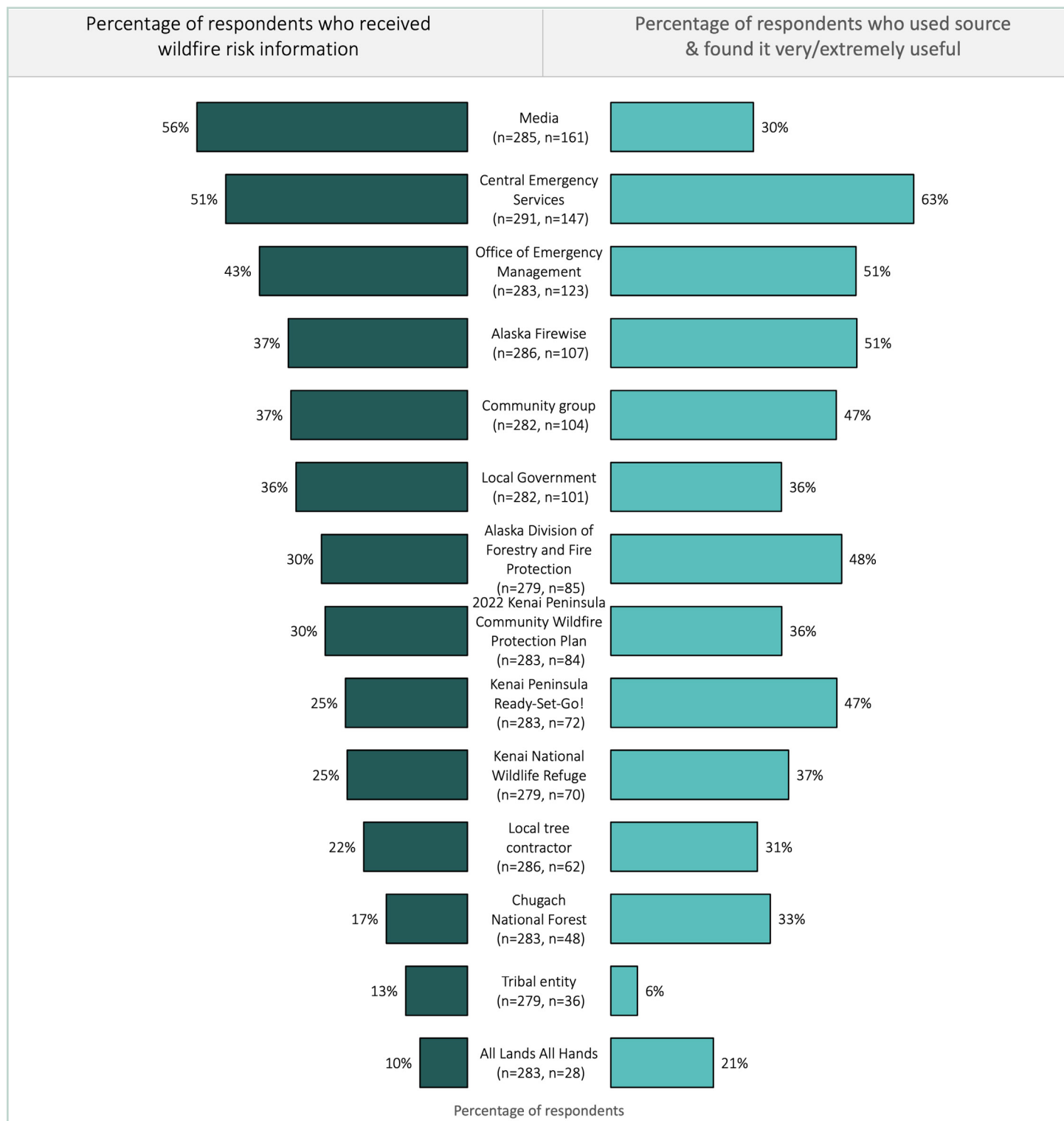


Figure 29—Percentage of respondents who received wildfire risk information, by source, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. These data are compared to the percentage of people who said they found each source's wildfire risk information very or extremely useful (percentage of all respondents who received wildfire risk information from that particular source). N = 279–291 respondents to source receipt questions; N = 28–161 respondents to source usefulness questions.

Current and preferred channels of communication—

There are many different channels through which information about wildfire may be distributed. The survey asked participants how they currently receive wildfire-related information and how they would prefer to receive it. Overall, no single information channel was currently received or preferred by more than 52 percent of respondents. The top channels through which survey respondents received information were radio (32%), TV news (26%), internet (non-social media) (23%), and social media (22%). The most preferred channels were email/e-newsletter (52%), mailed newsletters (45%), and conversations with a local wildfire specialist (36%). Refer to figure 30.

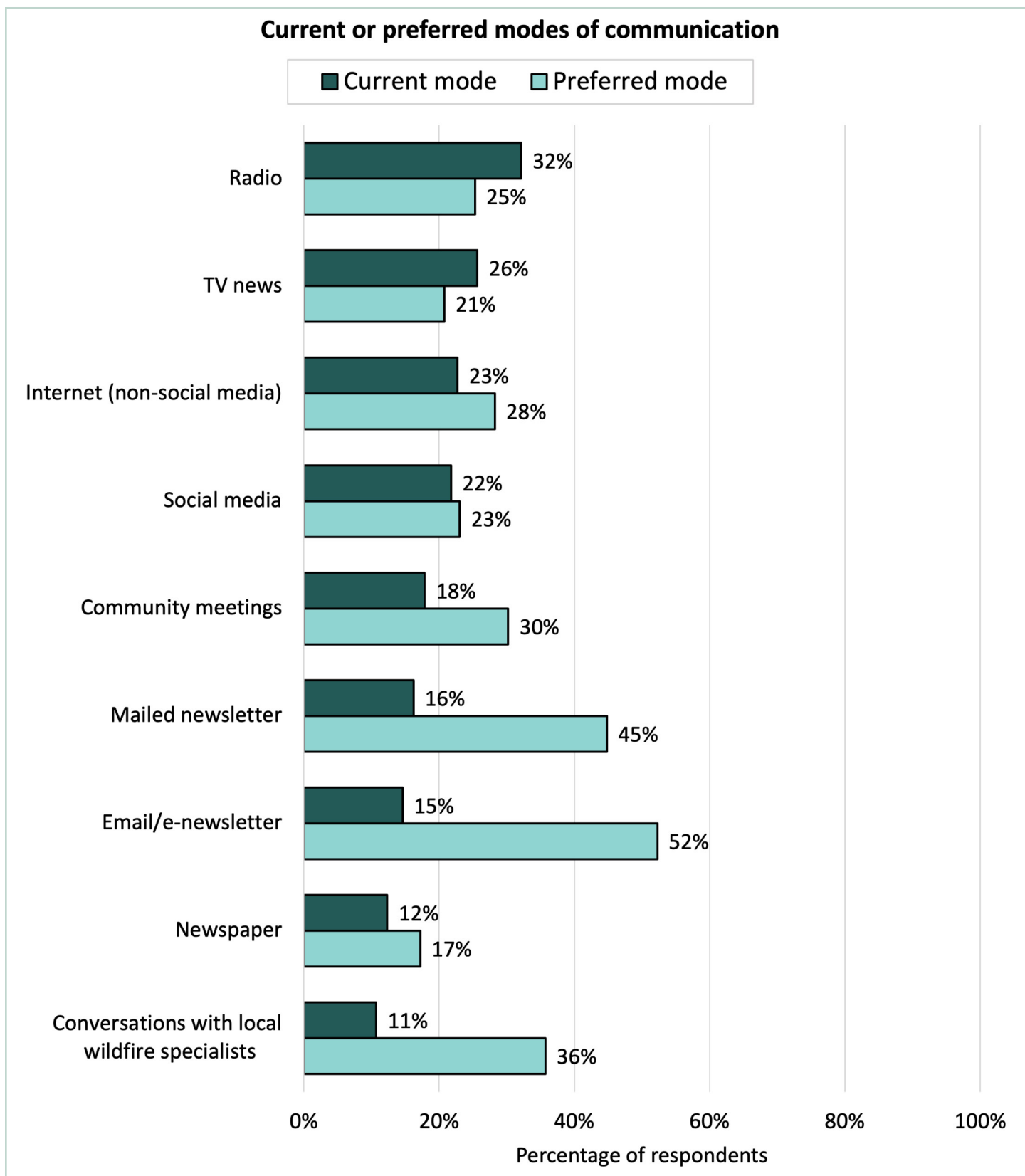


Figure 30—Comparison of current and preferred modes of communication about wildfire risk, ordered by current modes of communication, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. Survey respondents were able to select multiple options. N = 308 respondents to current modes; N = 308 respondents to preferred modes.

Mitigation and preparedness activities—

Evacuation planning—

Evacuation planning is a critical step in wildfire preparedness, and most survey respondents appear to have completed some planning. Most survey respondents (79%) reported having evacuation plans for the people in their households (refer to fig. 31a). Among survey respondents with pets, 76 percent had an evacuation plan for their animals (refer to fig. 31b). However, only 28 percent of survey respondents with livestock had a plan for their animals (refer to fig. 31c).

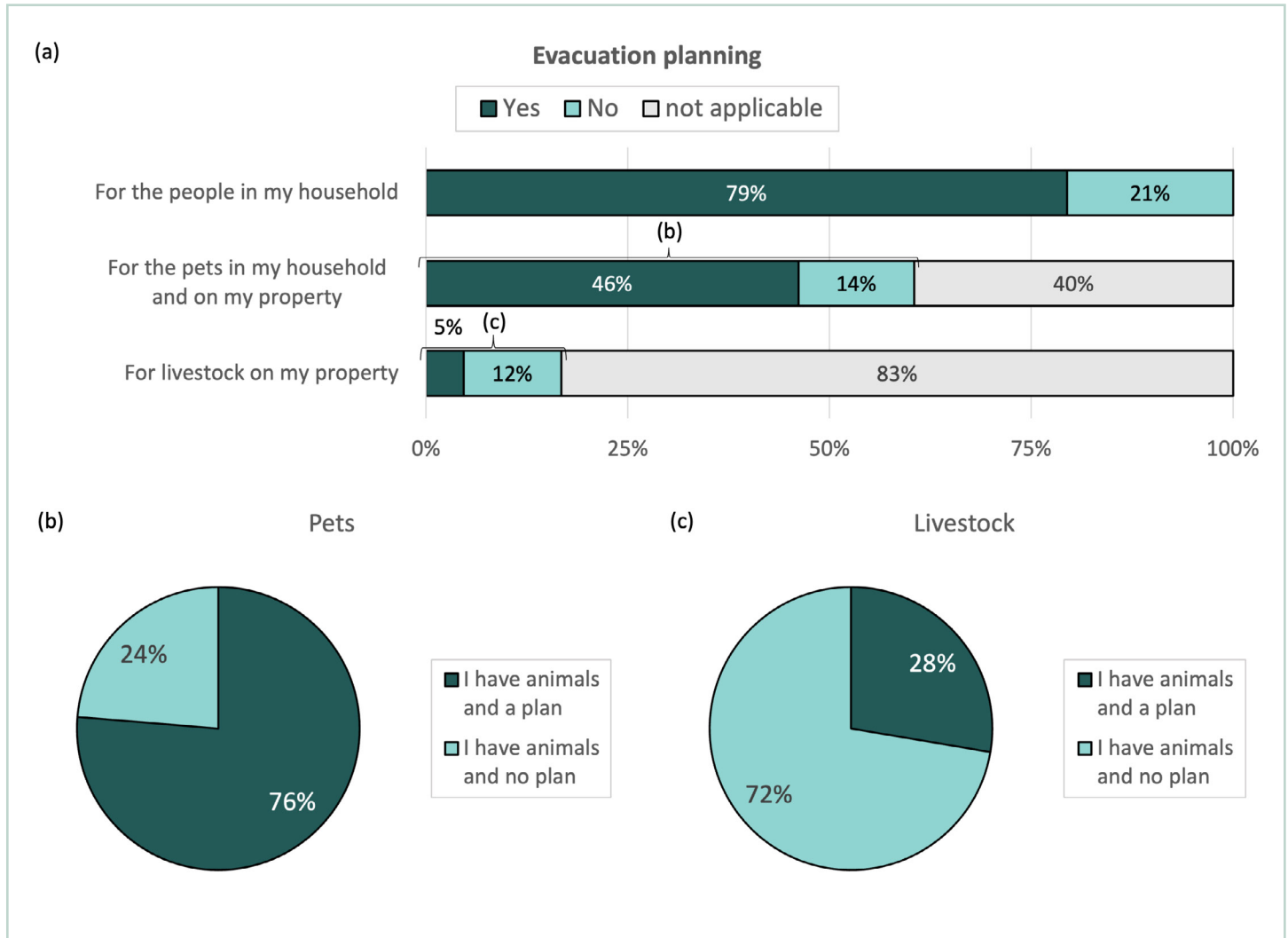


Figure 31—(a) Percentage of survey respondents who report having wildfire evacuation plans for people in the household and for pets and livestock, out of all responses to this question (n=280–92). (b) Of respondents with pets, percentage who have a wildfire evacuation plan for their pets (n=173). (c) Of respondents with livestock, percentage of have a wildfire evacuation plan for their livestock (n=47). Data as reported in 2024 by survey respondents residing in the Funny River, Kenai Peninsula Borough, Alaska, study area.

Respondents were asked to report the evacuation actions they had completed and to identify evacuation topics on which they wanted more information. When compared with how many respondents reported having evacuation plans (refer to fig. 31a), fewer reported taking specific actions that comprise a proper evacuation plan. Around one-half of respondents

reported that they have identified what to take and what to leave behind (57%), safe evacuation routes (54%), where to evacuate to (52%), and where to stay long term (50%).

Furthermore, actions like identifying how to be notified (35%), signing up for emergency notification (33%), and creating an evacuation checklist (31%) had lower completion rates. These actions also had the highest percentage of respondents interested in more information: 46 percent, 45 percent, and 38 percent, respectively. Refer to figure 32.

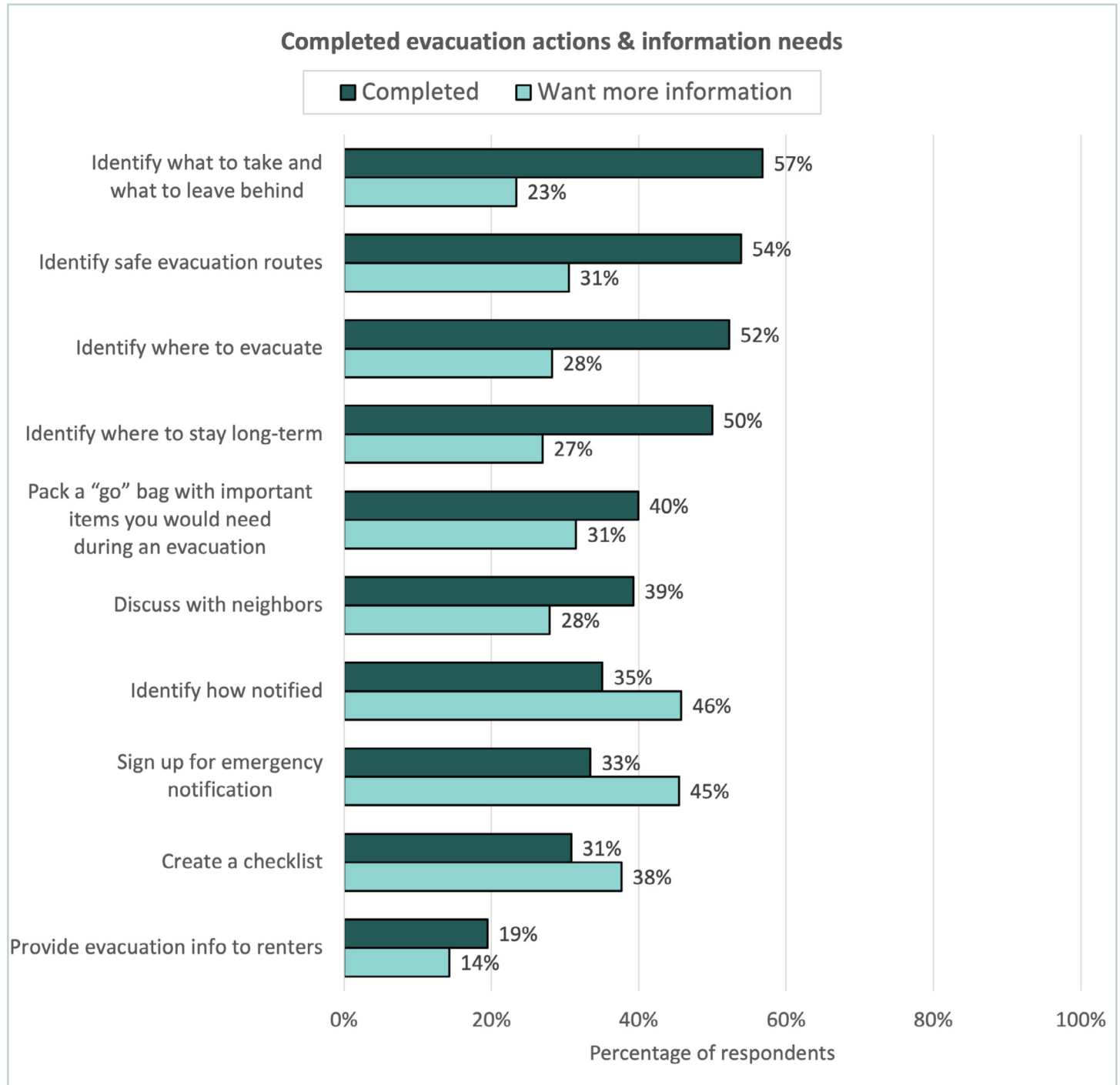


Figure 32—Evacuation preparations completed and information that would be helpful in evacuation plan development, ordered by actions completed, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 308 respondents to completed action segment; N = 308 respondents wanting more information segment.

Wildfire risk mitigation—

There are many ways property owners can reduce the risk of wildfire damaging or destroying their homes. Respondents reported high levels of mitigation actions on their properties. The three most commonly reported activities were reducing vegetation (92%), regularly mowing and raking around their residence (80%), and regularly clearing their roof and gutters (71%). Less common mitigation activities on their properties included hardening (e.g., changing conditions of home to reduce likelihood of structure ignition including replacing roof or siding) their homes (41%), obtaining a permit to burn in 2023 (30%), and meeting with a wildfire professional to evaluate their home's risk (20%). Respondents reported fewer mitigation activities beyond their own properties, such as helping neighbors reduce vegetation on their properties (33%), obtaining a permit to cut trees in the last two years (11%), participating in a community wildfire activity (10%), helping reduce vegetation on nearby public lands (9%), helped reduce vegetation on community property (7%), and interacting with public land managers about fuels reduction (6%). Refer to figure 33.

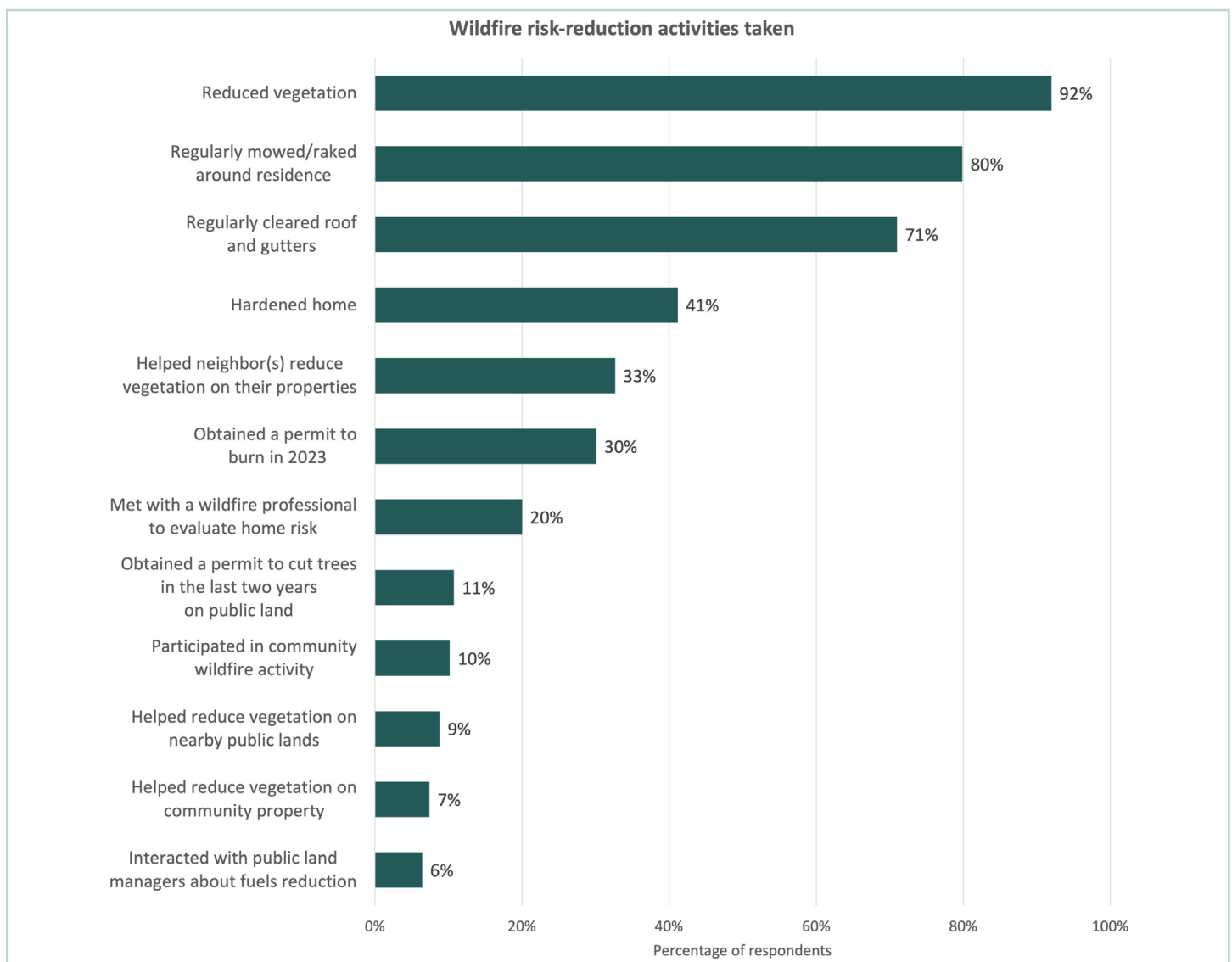


Figure 33—Percent of respondents who reported doing the above wildfire risk mitigation activities, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 286–299 respondents for each of the above activity statements.

Barriers to conducting mitigation—

Respondents were asked about four categories of potential barriers to conducting wildfire risk mitigation:

- Personal resources
- Lack of specific information
- Personal perspectives
- Community-related barriers

The top two reported barriers across all categories were in the personal resources category: physical ability to do work (37%) and the financial expense of mitigating (32%). Additionally, over a quarter of respondents (26%) reported that the time to do the work was a barrier, while over a third (38%) of the respondents indicated that none of the three personal resources factors were barriers to wildfire risk mitigation (refer to fig. 34).

In the lack of specific information category, most respondents (60%) reported that the three factors in this category were not barriers. The most reported barrier in this category was the lack of information on where to dispose of vegetation or slash (27%), followed by lack of information on how to reduce wildfire risk on their property (15%), and lack of information on factors contributing to their properties' wildfire risk (13%) (refer to fig. 35).

A large percentage of respondents (64%) indicated that none of the three personal perspectives were barriers to conducting wildfire risk mitigation. Among those who did report barriers, the most reported was a belief that taking action would not reduce risk to their property (16%), followed by a reluctance to change the way their property looks (15%), and a low priority given to risk mitigation (9%) (refer to fig. 36).

Similarly, a significant percentage of survey respondents (67%) reported that community-related factors were not barriers to conducting wildfire risk mitigation activities. About one-quarter (26%) of respondents indicated that a lack of options for disposing of vegetation/slash was a barrier, and even fewer identified a barrier being restrictions on changes that can be made to their properties (11%). Almost none of the respondents cited social pressure from neighbors (<1%) as a barrier (refer to fig. 37).

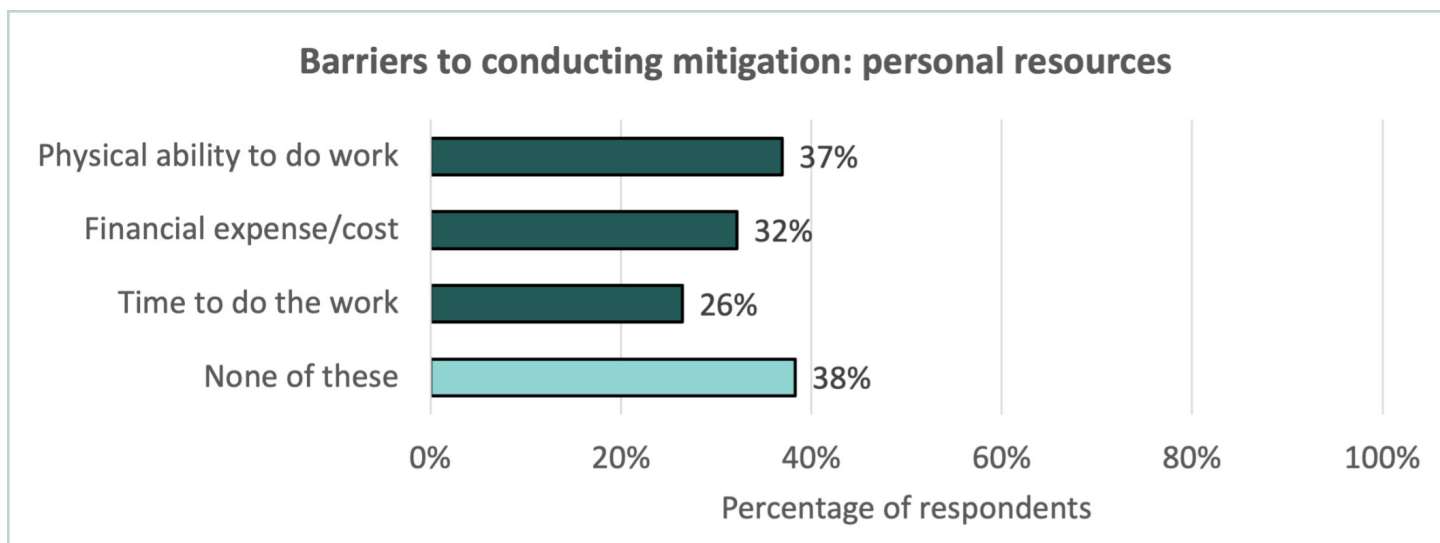


Figure 34—Personal barriers to conducting wildfire risk mitigation activities on property, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 295 respondents for each of the above barriers.

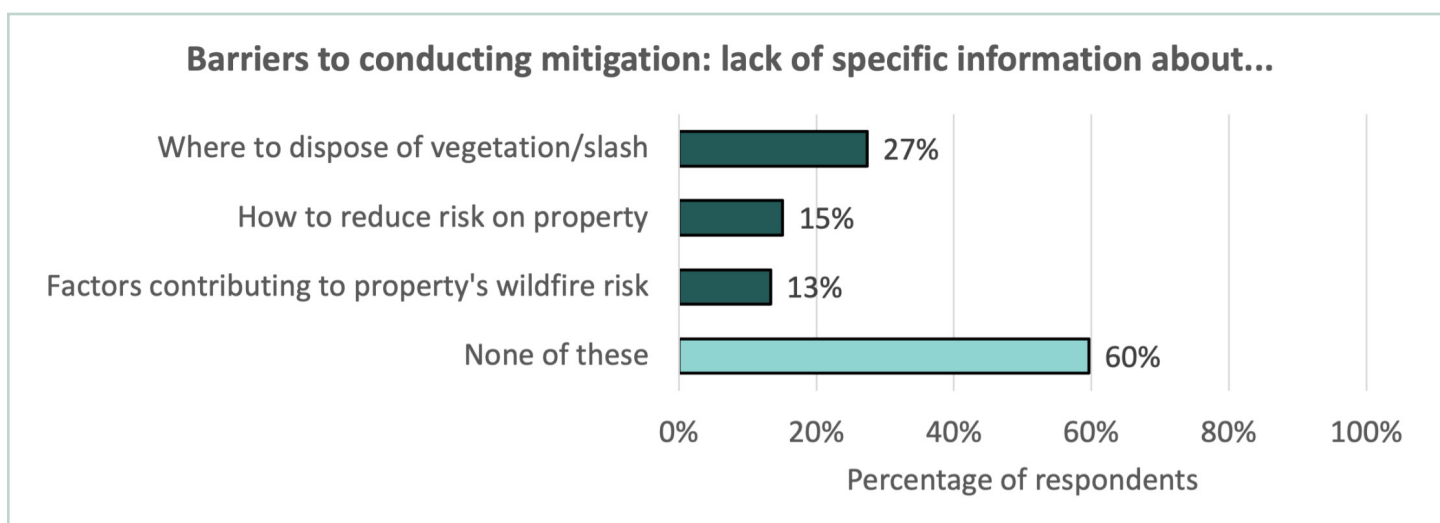


Figure 35—Information barriers to conducting wildfire risk mitigation activities on property, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 285 respondents for each of the above barriers.

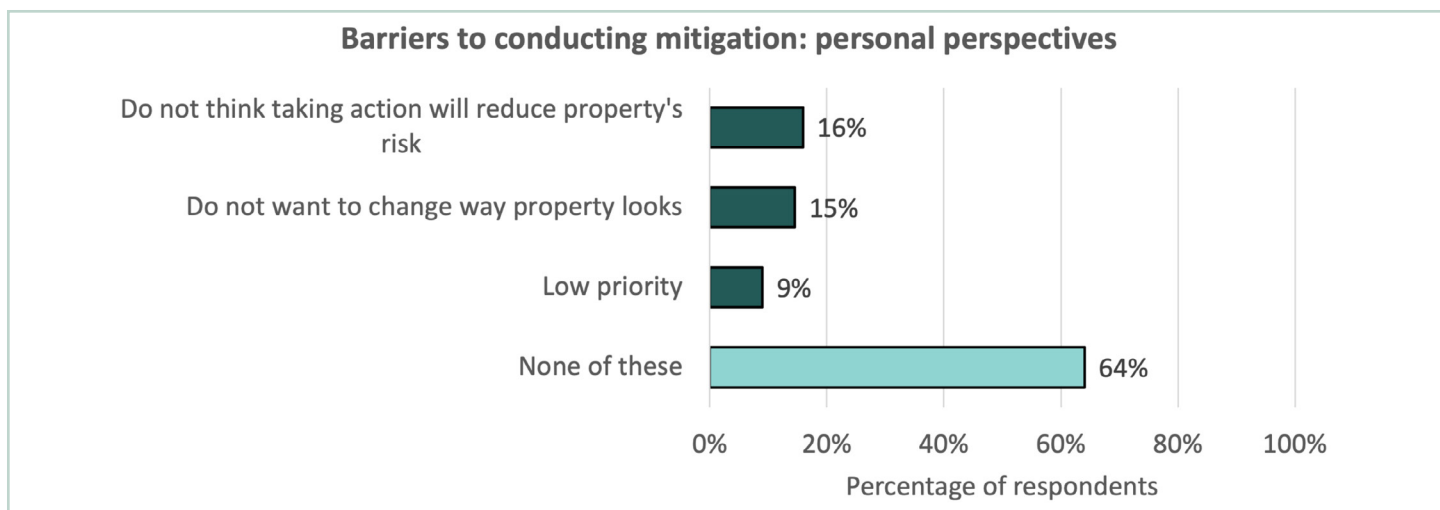


Figure 36—Personal perspectives or values that might affect wildfire risk mitigation activities on property, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 289 respondents for each of the above barriers.

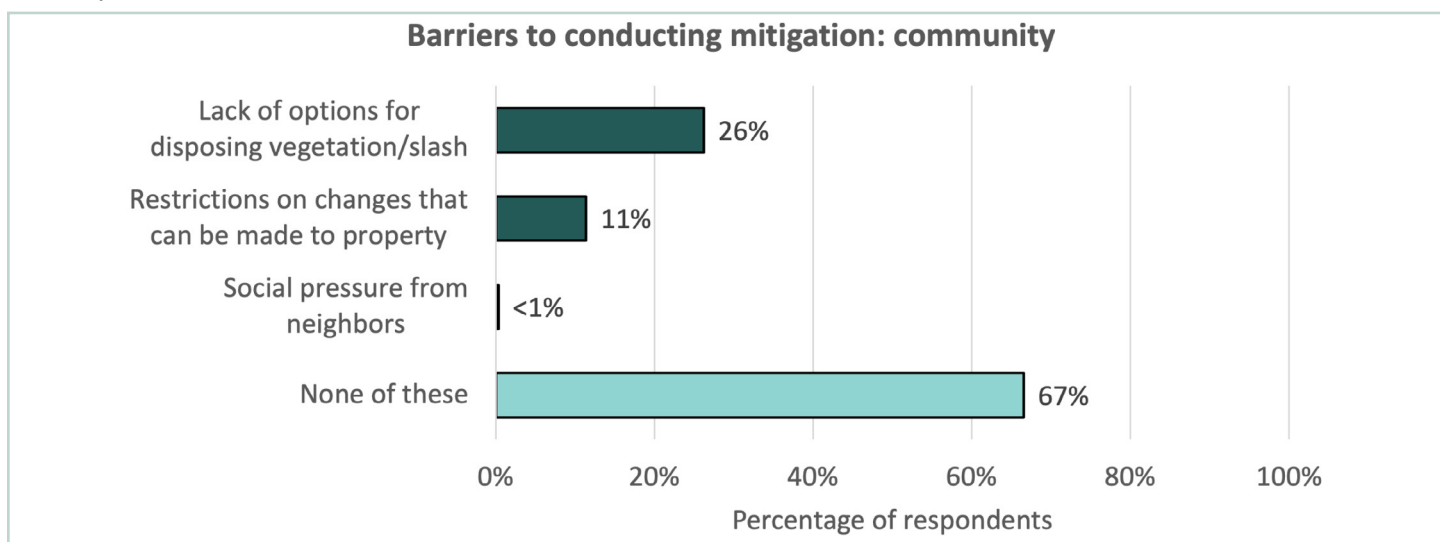


Figure 37—Community-related barriers to conducting wildfire risk mitigation activities on property, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 290 respondents for each of the above barriers.

Incentives to conducting mitigation—

Survey respondents were also asked about three categories of potential incentives that might encourage them to conduct wildfire risk mitigation activities on their properties:

- Resources
- Information
- Social incentives

Across all sections, none of the listed incentives appealed to more than 39 percent of the respondents. In the resources category, two of those most selected incentives were help with doing the work (39%) and cost-sharing or financial assistance (38%). Far fewer respondents reported recommended contractors (12%) as an incentive. Forty-one percent of respondents

reported that none of these incentives would encourage them to undertake wildfire risk mitigation activities (refer to fig. 38).

The other two most popular incentives across all categories were in the information category: a one-on-one visit with wildfire risk experts (38%) and a report describing their properties' wildfire risk factors (37%). Only 19 percent of survey respondents indicated that videos showing how to reduce risk would motivate them to conduct wildfire risk mitigation activities. Additionally, 37 percent of survey respondents indicated that none of the incentives in this category would encourage them to complete wildfire risk mitigation activities on their properties (refer to fig. 39).

Social incentives to encourage wildfire risk mitigation were less popular among survey respondents. Twenty-eight percent of respondents reported that receiving feedback on work done to reduce their property's risk would be beneficial, 12 percent reported that a neighborhood group organizing wildfire risk-reduction activities would be helpful, and only 8 percent indicated that recognition would motivate them to perform wildfire risk mitigation. Almost two-thirds of the respondents (60%) indicated that none of these social incentives would encourage them to conduct wildfire risk mitigation (refer to fig. 40).

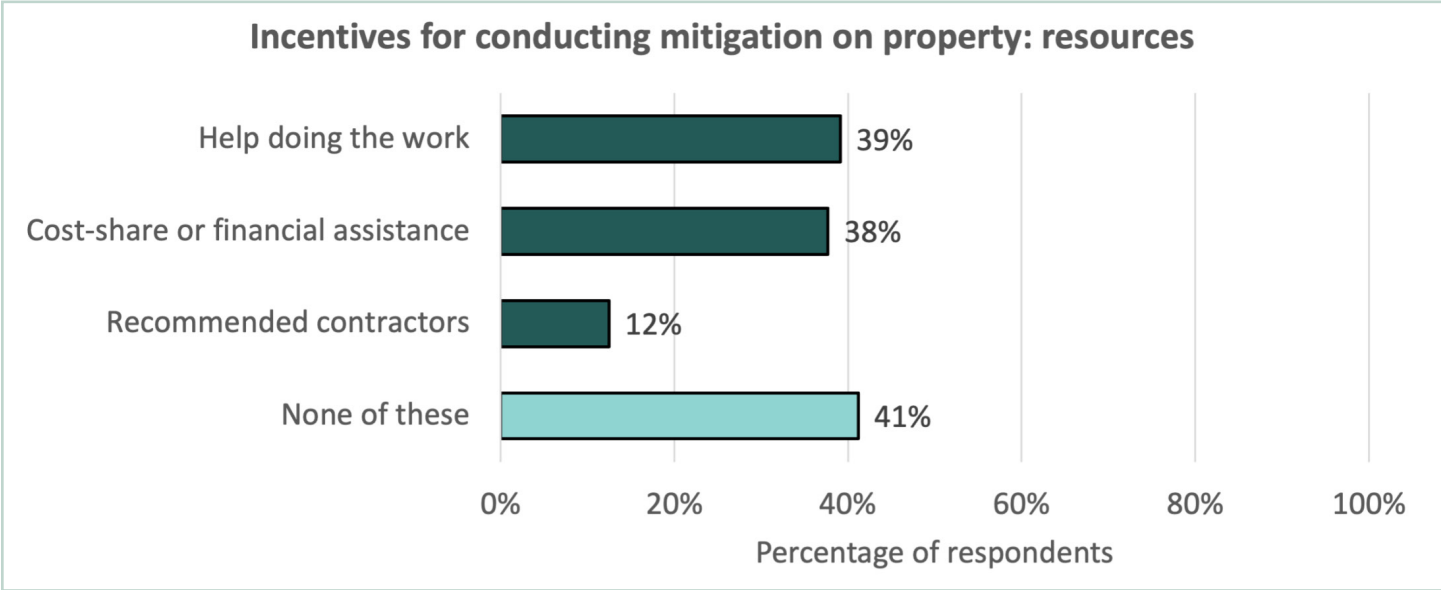


Figure 38—Resource-related incentives for conducting wildfire risk mitigation activities on property, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 289 respondents for each of the above incentives.

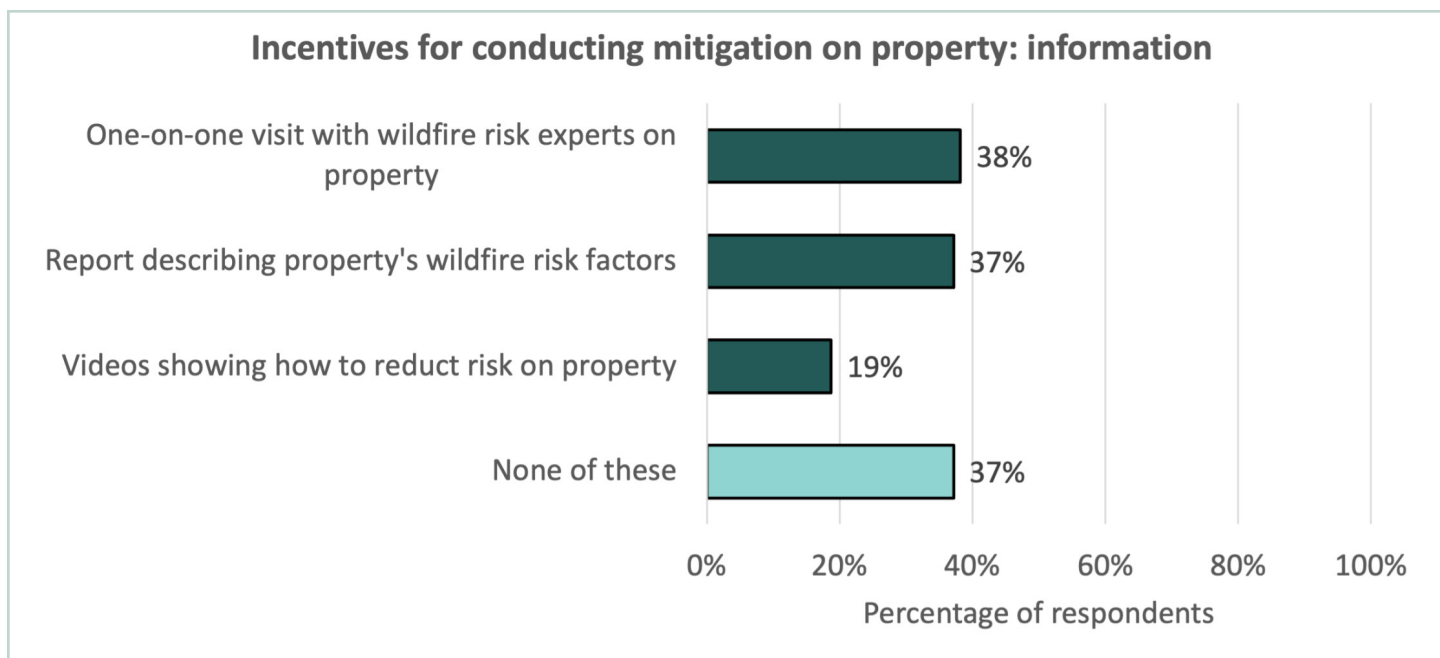


Figure 39—Information-related incentives for conducting wildfire risk mitigation activities on property, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 288 respondents for each of the above incentives.

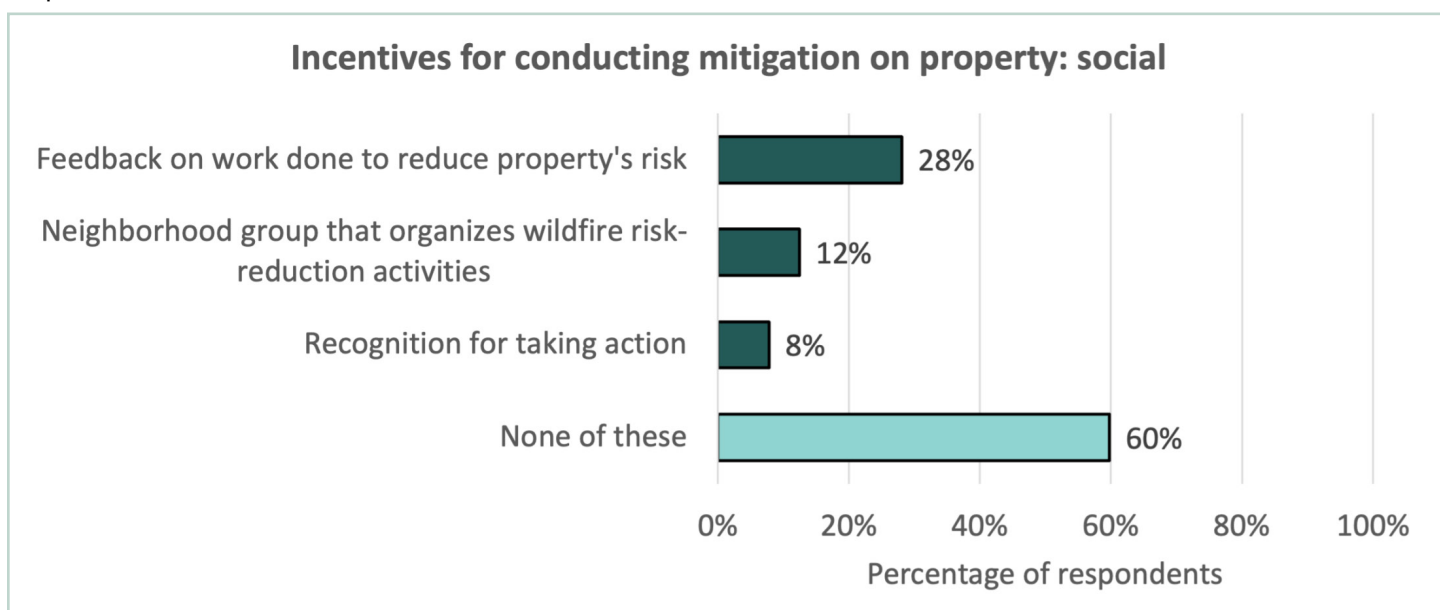


Figure 40—Other incentives for conducting wildfire risk mitigation activities on property, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 281 respondents for each of the above incentives.

Perceptions of Community Risk Reduction Strategies and Fire Management

Support for risk management practices—

Most survey respondents rated fuels treatments on nearby public lands as very or extremely acceptable. Among the fuels treatments with the highest level of acceptability was removing vegetation along utility right of ways to reduce fire starts (80%), establishing and managing

a public site to dispose of cut vegetation (79%), and removing vegetation along roadways to ensure safer evacuation (76%), followed by creating a fuel break on nearby public lands and removing trees and other vegetation (71% and 70%, respectively). While less accepted, more than two-thirds of respondents still found burning piles of vegetation (68%) and removing fire-prone trees and planting fire-resistant trees on nearby public lands (68%) on nearby public lands very or extremely acceptable. The least acceptable fuel treatment was allowing a naturally ignited fire to burn, with only 35 percent finding it very or extremely acceptable (refer to fig. 41).

Between one-quarter and one-third of the survey respondents indicated that proposed wildfire regulations and practices were very or extremely acceptable. The most accepted wildfire regulation was adopting growth policies and regulations that limit development in fire-prone areas (32%), followed by temporarily shutting off the power grid during extreme fire risk days (31%), adopting development standards that require vegetation management (30%), and adopting building codes that require fire resistant materials (25%), and (refer to fig. 42).

An additional acceptability question was asked in the community of Funny River pertaining to evacuation. When asked about acceptability of building a new public road and bridge across the Kenai River that could be used in emergency evacuation, 61 percent of survey respondents stated this was very or extremely acceptable (refer to fig. 43).

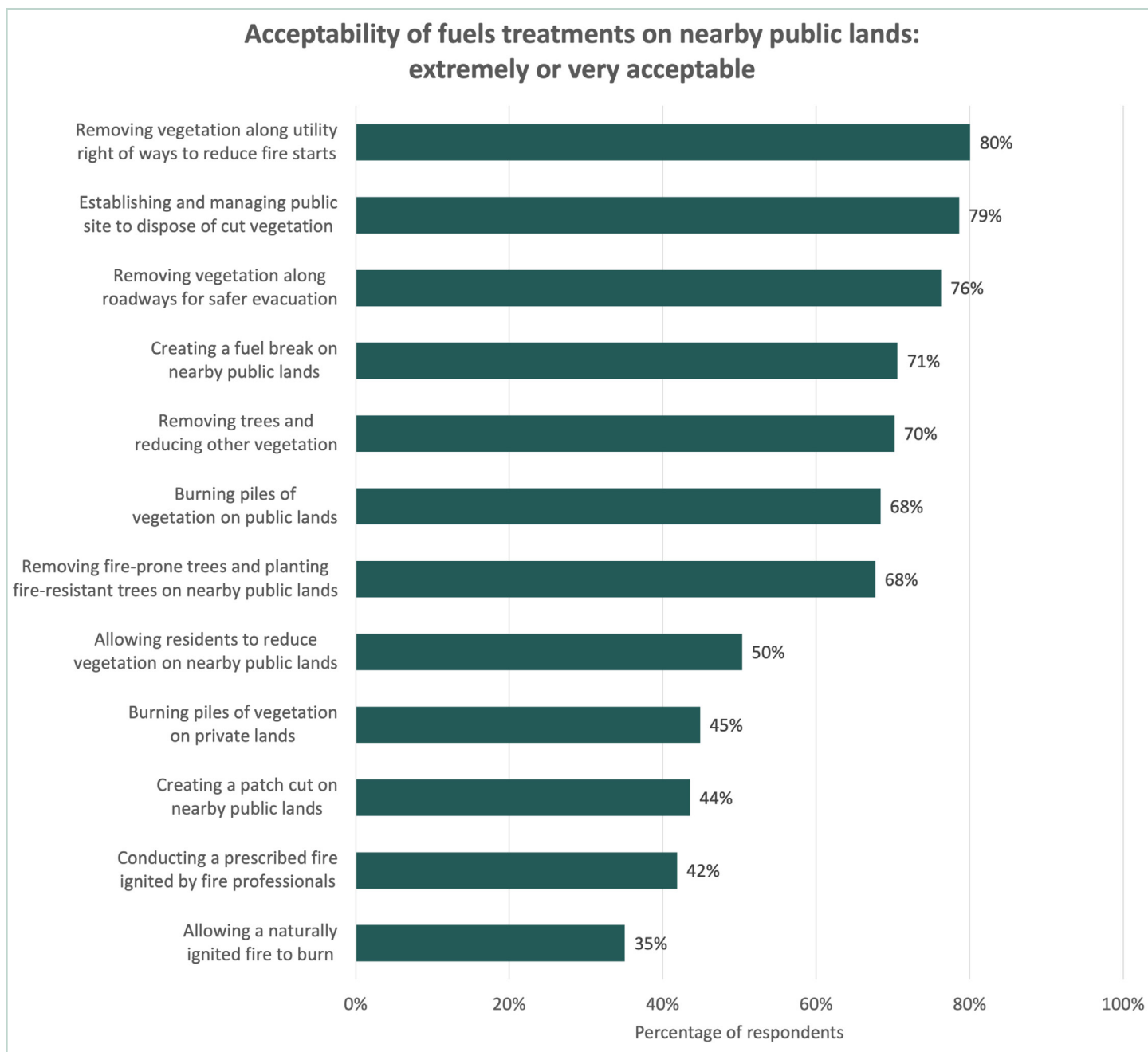


Figure 41—Percentage of respondents who found each of the above wildfire fuels management approaches very or extremely acceptable, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 287–296 respondents for each of the above statements.

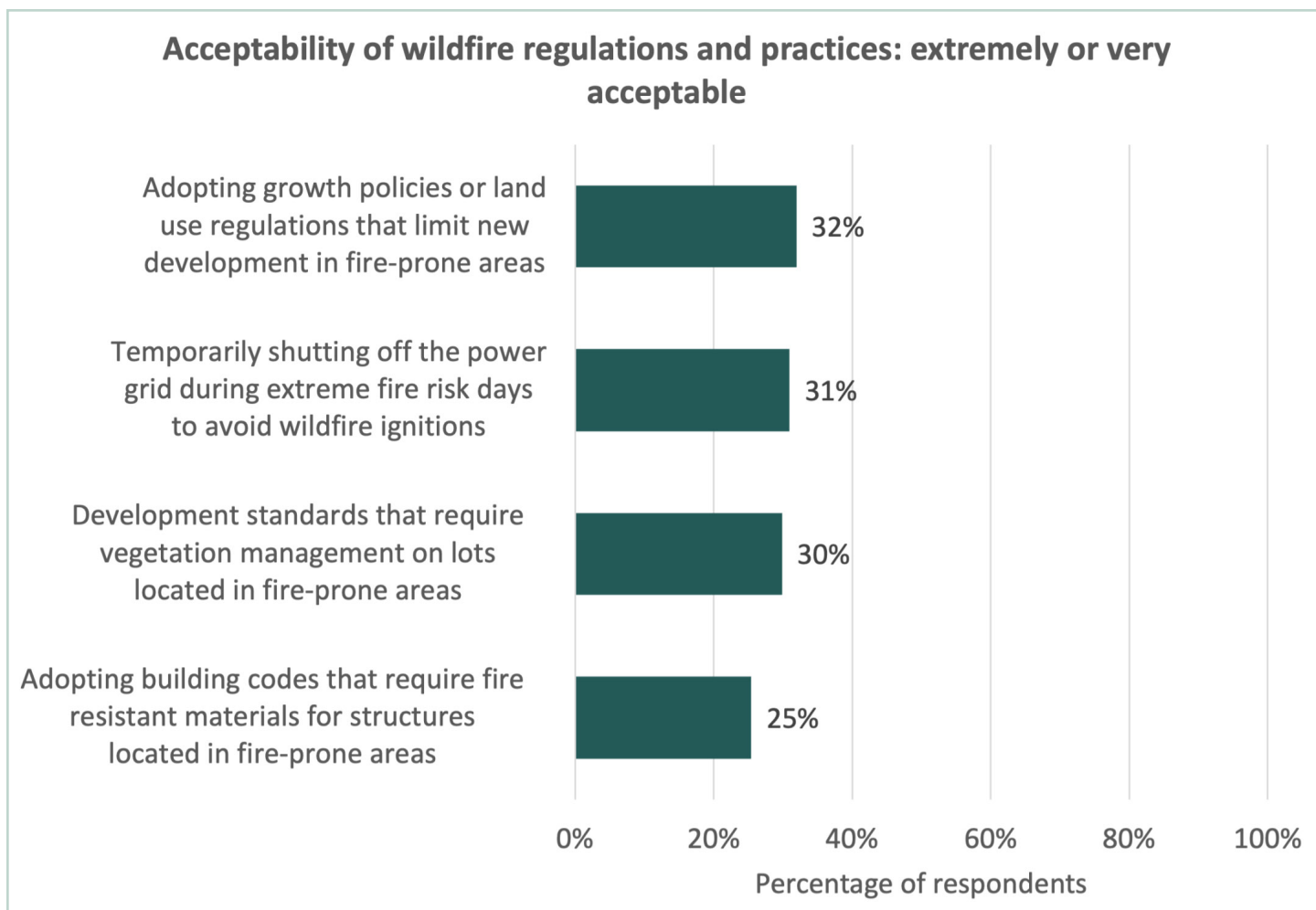


Figure 42—Percentage of respondents who found each of the above wildfire-related policies very or extremely acceptable, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 288–294 respondents for each of the above statements.

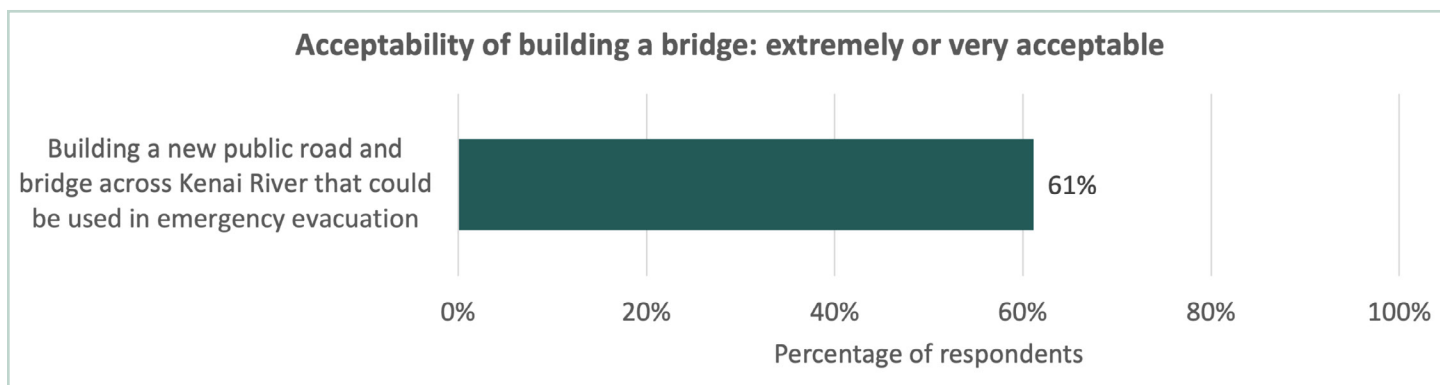


Figure 43—Percentage of respondents who found the above wildfire-related proposed action very or extremely acceptable, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 296 respondents for each of the above statements.

Notions of hazard and response—

We asked respondents to what extent they agreed or disagreed with a wide range of statements about wildfire.

Most survey respondents agreed or strongly agreed that wildfires are a natural part of a healthy forest (81%). (refer to fig. 44).

Respondents reported little confidence in the available technology and resources to suppress wildfires. While most respondents stated that reducing risk on their property would help improve firefighter safety (87%), very few agreed or strongly agreed that firefighters had sufficient resources to protect threatened homes (16%), or that all wildfires could be controlled with technology (12%). Additionally, most respondents felt they would get an evacuation notice in time to safely evacuate (52%) (refer to fig. 45).

Few respondents agreed or strongly agreed that wildfires threaten their community's water supply (14%) (refer to fig. 46).

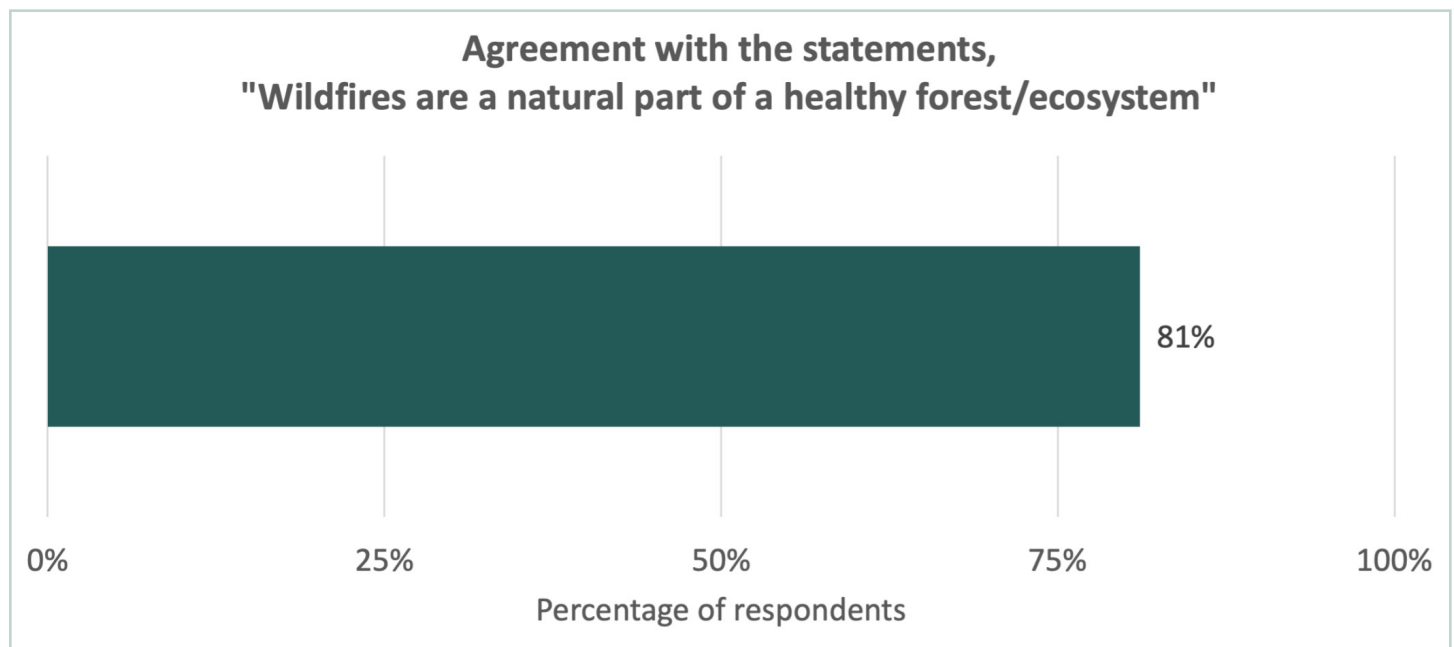


Figure 44—Agreement (“agree” or “strongly agree”) with the statement that wildfires are a natural part of a healthy forest/ecosystem, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 296 respondents to the survey statement listed.

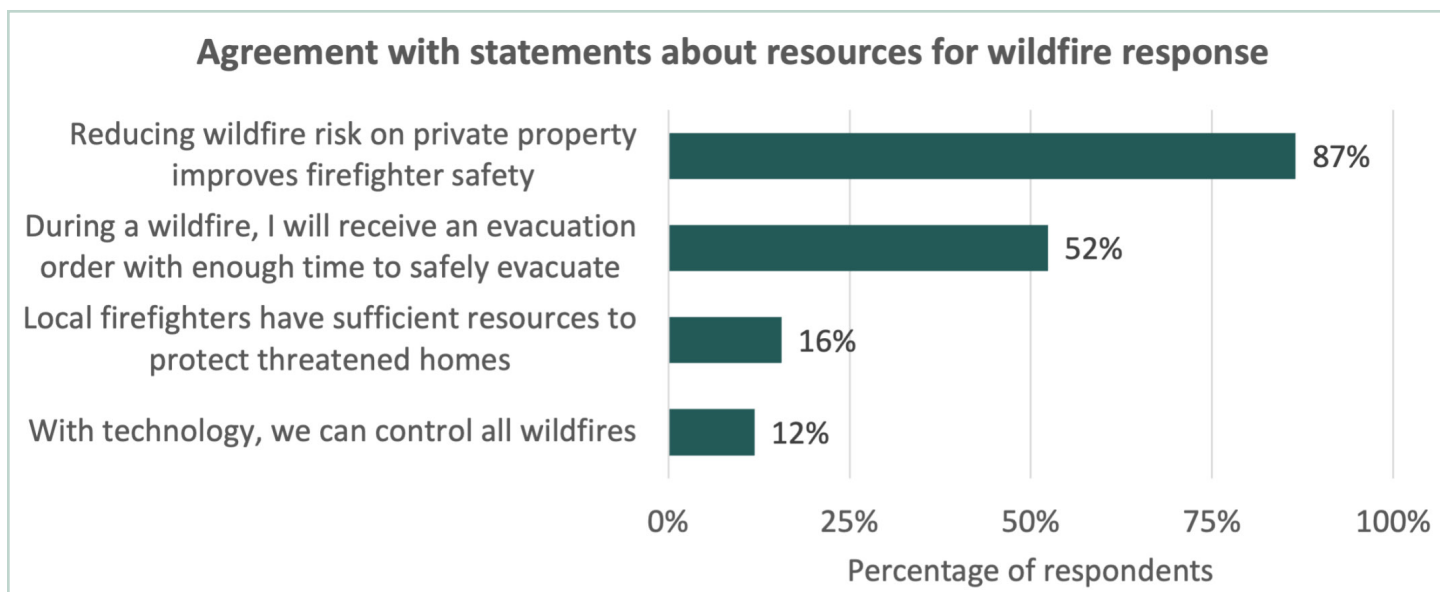


Figure 45—Agreement (“agree” or “strongly agree”) with statements about available technology and resources to prevent wildfire impacts, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 295–297 respondents to each survey statement listed.

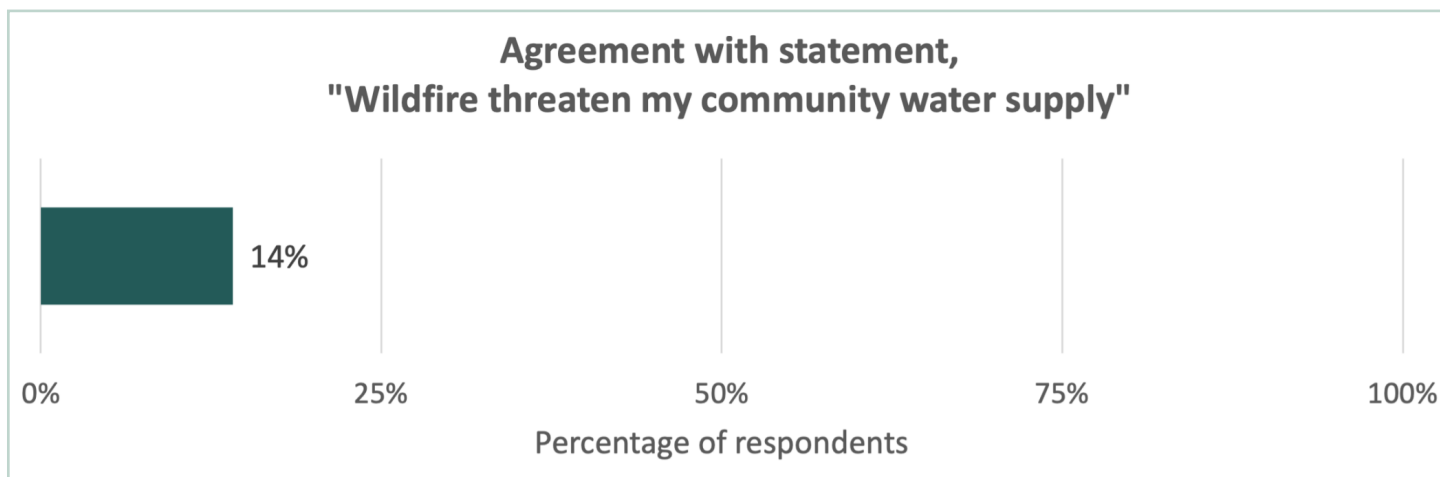


Figure 46—Agreement (“agree” or “strongly agree”) with statements about whether wildfire threatens the respondent’s property and water supply, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 291 respondents to the survey statement listed.

Lastly, survey respondents indicated that they feel responsible for reducing their wildfire risk and are confident in the effectiveness of their efforts. Over one-quarter (27%) felt that their efforts to mitigate wildfire risk on their properties were undermined by heavy vegetation on neighboring properties. Additionally, 22 percent agreed or strongly agreed that residential development in fire-prone areas increases the wildfire risk to their property. However, only few agreed or strongly agreed with the statement that homeowners’ actions to reduce risk are not effective (8%) or that they live here for the trees and will not remove any to reduce risk (5%) (refer to fig. 47).

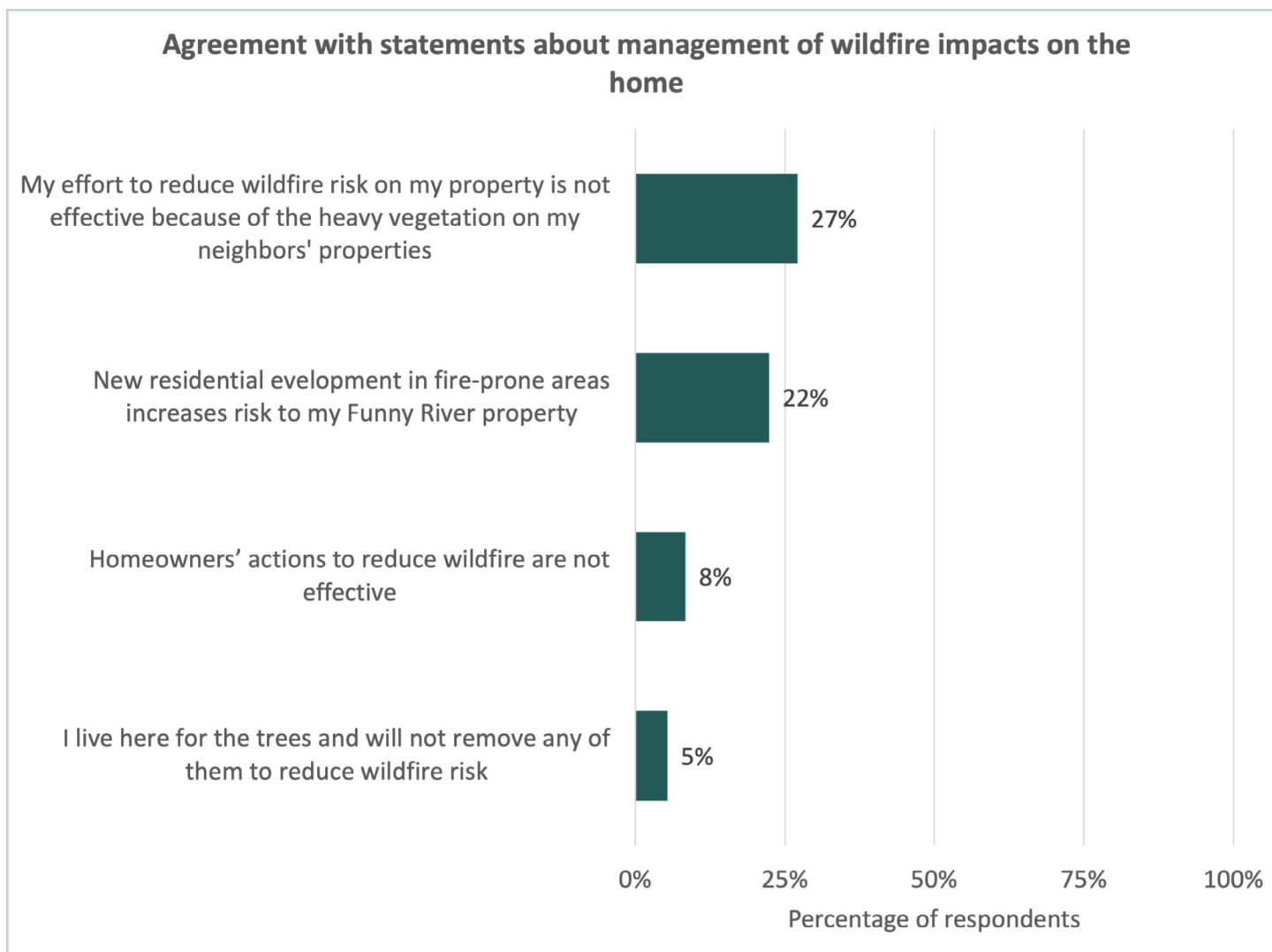


Figure 47—Agreement (“agree” or “strongly agree”) with statements about personal and community management of wildfire impacts on the respondent’s home, as reported in 2024 by respondents residing in the study area in Funny River, Kenai Peninsula Borough, Alaska. N = 295–297 respondents to each survey statement listed.

Conclusion

This report compares WiRē parcel-level wildfire risk assessments (WiRē RA) conducted by trained assessors and homeowner self-assessments of parcel-level wildfire risk in the Funny River, Kenai Peninsula Borough, Alaska. This project benefited from the unique opportunity to use existing aerial imagery to support the completion of the risk assessments, which would not have been possible otherwise.

The report also highlights the social dimensions of wildfire, including household survey respondents' perceptions of wildfire risk and responsibility for wildfire risk reduction, perceptions of public land management strategies and policies for wildfire risk mitigation, current mitigation and evacuation preparedness activities, barriers and incentives to mitigation, and communication preferences. Together, the data suggest activities consistent with a fire-adapted community, however they also demonstrate a broad set of opportunities to enhance community and public safety, bolster emergency preparedness and mitigation activities, and to take action to reduce risk across jurisdictional boundaries where private and public land meet.

Appendix A: Correspondence Materials and Household Survey

Correspondence Materials.....	50
Household Survey	58



Central Emergency Services

253 Wilson Lane Soldotna AK 99669 • (907) 262-4792 main

Peter A. Micciche
Borough Mayor

Dear Funny River Resident,

Central Emergency Services and the Kenai Peninsula Borough Office of Emergency Management are dedicated to helping our community prepare for the eventuality of wildfire. While fire is an important part of the natural ecosystem, large and intense fires have the potential to devastate homes and lives. We've seen this hit twice in the past ten years. The Funny River Fire in 2014 burned approximately 200,000 acres. The 2015 Card Street Fire also nearly brought disaster to the Funny River area when it jumped the Kenai River.

Our goal is to be proactive in confronting wildfire before another disaster occurs. Central Emergency Services and the Kenai Peninsula Borough Office of Emergency Management are working to help homeowners understand and reduce their risk from wildfire and to learn about the community's current state of wildfire preparedness as well as residents' knowledge, experience, and attitudes. To that end, we have partnered with the Wildfire Research (WiRē) team to conduct a study which will have two components: (1) a parcel-level wildfire risk assessment, and (2) a mail-in survey.

Wildfire Risk Assessment

This summer, the WiRē team will conduct parcel-level wildfire risk assessments using existing aerial imagery to determine how each household can be better prepared to survive a wildfire. Parcel-level assessments are a quick overview of the property characteristics that contribute to wildfire risk, including roof type, vegetation density, and evacuation routes. We will not be gathering any new imagery, and the team will only be in the area in a limited capacity to look at areas which may potentially block a fire response; no trespassing will occur.

Living with Wildfire in Funny River in 2023 Survey

The second part of the study is a survey that will help us understand your knowledge and perspectives on wildfire. In partnership with the University of Colorado, surveys will be mailed to all households later this Fall/Winter. Your participation in this survey is voluntary, but the information you provide will help emergency responders better prepare for future fires as well as improve our outreach and education efforts. A project report will be available in the first half of 2024, at the conclusion of the project.

If you have any questions about the parcel-level wildfire risk assessments or the survey, please email us at oem@kpb.us or call 907-262-4910.

Thank you for participating.

Sincerely,

Roy Browning

Roy Browning (May 12, 2023 16:08 AKDT)

Roy Browning
Fire Chief
Central Emergency Services

Paul M. McBride

Paul M. McBride (May 9, 2023 12:00 AKDT)

Paul McBride
Program Manager - Preparedness
Kenai Peninsula Borough, Office of Emergency Management



Central Emergency Services

253 Wilson Lane Soldotna AK 99669 • (907) 262-4792 main

Peter A. Micciche
Borough Mayor

Dear Funny River Resident,

Central Emergency Services, the Kenai Peninsula Borough Office of Emergency Management, the University of Colorado, and the Wildfire Research Center are partnering to send the “Living with Wildfire in Funny River in 2023” survey. To create the most effective programs possible, Central Emergency Services needs to understand what you know about wildfire, your experiences with wildfire, as well as the characteristics of your property. The information you provide will help Central Emergency Services better prepare for future fires as well as improve our outreach and education efforts. Results from the study will be available in the first half of 2024, at the conclusion of the project.

Participation in this study is completely voluntary and will take about 20 minutes. We realize your time is valuable and we appreciate you taking the time to fill out the survey.

When you return the survey, your name will be deleted from the mailing list. Survey results will be reported in summary form and your name will not be connected to your answers in any way. After completing the survey, please fold it and put it in the postage paid return envelope. By returning the survey, you are acknowledging you understand your rights as a study participant and providing consent to participate (please see more details on the back of this letter).

If you have any questions about the survey, please email Hannah Brenkert-Smith at hannahb@colorado.edu. If you have any questions about the collaborative project, please email us at oem@kpb.us or call 907-262-4910.

Thank you for participating.

Sincerely,

Roy Browning
Fire Chief
Central Emergency Services

Paul McBride
Program Manager –
Preparedness
Kenai Peninsula Borough,
Emergency Response Center

Hannah Brenkert-Smith
Institute of Behavioral Science
University of Colorado



 University of Colorado
Boulder



Central Emergency Services

253 Wilson Lane Soldotna AK 99669 • (907) 262-4792 main

Peter A. Micciche
Borough Mayor

Your Rights as a Participant

We will make every effort to maintain the confidentiality of the study data. We will never publish information about individuals who participate in the study; we will present research results in summary form and keep all records and data secure.

There are no foreseeable risks associated with your participation in the survey.

You may withdraw from the study at any time and for any reason. If you have questions, concerns, or complaints about this research and you would like to talk to the research team, please contact Dr. Hannah Brenkert-Smith at hannahb@colorado.edu. This research has been reviewed and approved by an Institutional Review Board (IRB). You may talk to them at 303-735-3702 or irbadmin@colorado.edu if: your questions, concerns, or complaints are not being answered by the research team; you cannot reach the research team; you want to talk to someone besides the research team; you have questions about your rights as a research subject; or you want to get information or provide input about this research.

Resources to help you prepare for wildfire:

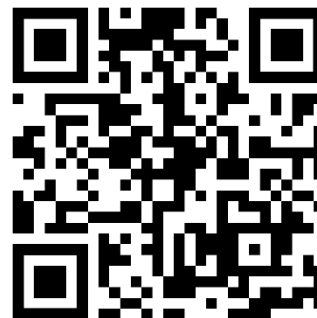
Sign up for emergency notifications:

<https://my.kpb.us>



Prepare for wildfire.
More info here:

<https://info.kpb.us>





Central Emergency Services

253 Wilson Lane Soldotna AK 99669 • (907) 262-4792 main

Peter A. Micciche
Borough Mayor

Dear Funny River Resident,

We recently sent you the “Living with Wildfire in Funny River in 2023” survey. We realized after we sent the survey that there was a glitch with the return envelope, and the prepaid postage was not attached.

Please find the necessary return postage in this letter and apply it to the return envelope with your completed survey.

If you have not had a chance to open or complete the survey, please do so today. We value your opinions. The information you provide is very important for the development of programs to reduce the risk of losses due to catastrophic wildfires.

Sincerely,

Roy Browning
Fire Chief
Central Emergency Services

Paul McBride
Program Manager –
Preparedness
Kenai Peninsula Borough,
Emergency Response Center

Hannah Brenkert-Smith
Institute of Behavioral Science
University of Colorado



 University of Colorado
Boulder



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**Prepare for wildfire.
More info here:**

<https://info.kpb.us>





Central Emergency Services

253 Wilson Lane Soldotna AK 99669 • (907) 262-4792 main

Peter A. Micciche
Borough Mayor

Dear Funny River Resident,

We recently requested your participation in an important survey about living with wildfire on the Kenai Peninsula. We apologize again for the return postage error in the first survey mailing. This mailing has the necessary return postage. Many residents have already completed and returned the survey. If you have returned the survey, thank you for your participation. If you have not yet responded, please complete and return the enclosed survey. We would like to hear from you so we can consider your opinions.

The “Living with Wildfire in Funny River in 2023” survey is a collaborative effort between Central Emergency Services, the Kenai Peninsula Borough Office of Emergency Management, the University of Colorado, and the Wildfire Research Center. We need your help to develop more effective community wildfire programs. It is our goal to proactively confront wildfire preparedness issues before the smoke is in the air.

Participation in this study is completely voluntary and will take about 20 minutes. We realize your time is valuable and we appreciate you taking the time to fill out the survey.

When you return the survey, your name will be deleted from the mailing list. Survey results will be reported in summary form and your name will not be connected to your answers in any way. After completing the survey, please fold it and put it in the postage paid return envelope. By returning the survey, you are acknowledging you understand your rights as a study participant and providing consent to participate (please see more details on the back of this letter).

If you have any questions about the survey, please email Hannah Brenkert-Smith at hannahb@colorado.edu. If you have any questions about the collaborative project, please email us at oem@kpb.us or call 907-262-4910.

Thank you for participating.

Sincerely,

Roy Browning
Fire Chief
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Paul McBride
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Kenai Peninsula Borough,
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Hannah Brenkert-Smith
Institute of Behavioral Science
University of Colorado



 University of Colorado
Boulder

Your Rights as a Participant

We will make every effort to maintain the confidentiality of the study data. We will never publish information about individuals who participate in the study; we will present research results in summary form and keep all records and data secure.

There are no foreseeable risks associated with your participation in the survey.

You may withdraw from the study at any time and for any reason. If you have questions, concerns, or complaints about this research and you would like to talk to the research team, please contact Dr. Hannah Brenkert-Smith at hannahb@colorado.edu. This research has been reviewed and approved by an Institutional Review Board (IRB). You may talk to them at 303-735-3702 or irbadmin@colorado.edu if: your questions, concerns, or complaints are not being answered by the research team; you cannot reach the research team; you want to talk to someone besides the research team; you have questions about your rights as a research subject; or you want to get information or provide input about this research.

Resources to help you prepare for wildfire:

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<https://my.kpb.us>



Prepare for wildfire. More info here:

<https://info.kpb.us>





Central Emergency Services

253 Wilson Lane Soldotna AK 99669 • (907) 262-4792 main

Peter A. Micciche
Borough Mayor

Dear Funny River Resident,

We recently sent you the “Living with Wildfire in Funny River in 2023” survey. You should have also received a follow-up letter that included the needed postage that was mistakenly left off the return envelope in the original mailing. If you have recently returned the survey, thank you for your participation!

If you have not had a chance to complete and mail the survey, please do so today. We value your opinions. The information you provide is very important for the development of programs to reduce the risk of losses due to catastrophic wildfires.

Sincerely,

Roy Browning
Fire Chief
Central Emergency Services

Paul McBride
Program Manager –
Preparedness
Kenai Peninsula Borough,
Emergency Response Center

Hannah Brenkert-Smith
Institute of Behavioral Science
University of Colorado



University of Colorado
Boulder

Living with Wildfire in Funny River in 2023



Kenai Peninsula Borough
Office of Emergency Management
253 Wilson Ln, Soldotna, AK 99669

Section 1: In this first section of the survey, we ask about your home in Funny River. Please answer the following questions with respect to your ***Funny River home***.

When choosing a response, please fill in the circle completely. Correct:  Incorrect:    

1.1. Do you own or rent your Funny River home? (*Fill in one circle*)

- ☐ Own: primary home
- ☐ Own: secondary home
- ☐ Rent: I do not own this home

1.2. In a typical year, what months do you spend any time at your Funny River home?
(*Fill in all that apply*)

All 12 months	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	No months
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

1.3. Do you rent out your Funny River home to others? (*Fill in one circle*)

- ☐ No, I do not rent out my home
- ☐ Yes, I rent out my home short-term
- ☐ Yes, I rent out my home long-term

1.4. In what year did you move in to your Funny River home? (*Fill in the blank*)

_____ Year moved to my Funny River home

1.5. In what year was your Funny River home originally built? (*Fill in the blank*)

_____ Year my Funny River home was built

1.6. How aware of wildfire risk were you when you bought or decided to rent your Funny River home?
(*Fill in one circle*)

- ☐ Very aware
- ☐ Somewhat aware
- ☐ Not aware
- ☐ Don't remember

Section 2: In this section, we ask about your experience with, and preparation for, wildfire at your Funny River home.

2.1. What is the closest distance (as a crow flies) a wildfire has come to your Funny River property?
(Fill in one circle)

- ☐ There has been a wildfire on my property
- ☐ Less than 2 miles away, but not on my property
- ☐ 2 to 10 miles away
- ☐ More than 10 miles away
- ☐ Not sure

2.2. Have you had any of the following wildfire experiences at your Funny River home?
(Fill in one circle per row)

	No	Yes
I have evacuated from my Funny River home due to a wildfire or threat of a wildfire	☐	☐
My Funny River home has had wildfire smoke damage	☐	☐
My Funny River home has had wildfire damage	☐	☐
My Funny River home was destroyed by a wildfire	☐	☐

2.3. Do you currently have an evacuation plan in the event a wildfire threatens your Funny River home?
(Fill in one circle per row)

	No	Yes	Not applicable
For the people in my household	☐	☐	
For the pets in my household and on my property	☐	☐	☐
For livestock on my property	☐	☐	☐

- 2.4. Have you completed any of the following actions to prepare for a **wildfire evacuation**, and do you want more information about how to complete any of the actions? *(Fill in all circles that apply)*

	Completed action	Want more information
Identify how I will be notified about an evacuation	☐	☐
Sign up for a wildfire evacuation notification system (KPB Alerts at https://my.kpb.us)	☐	☐
Identify safe evacuation routes (multiple, if possible)	☐	☐
Identify a location that my household will evacuate to	☐	☐
Identify what to take and what to leave behind during an evacuation	☐	☐
Discuss evacuation with my neighbors	☐	☐
Create a checklist for steps to take before evacuating	☐	☐
Identify a place to stay during a long-term evacuation	☐	☐
Pack a “go bag” with items needed during an evacuation	☐	☐
Provide evacuation information to renters, if applicable	☐	☐

- 2.5. Please tell us about your experiences with your **homeowner’s insurance** for your Funny River home. *(Fill in one circle per row)*

	No	Yes	Don’t know
Do you currently have homeowner’s insurance?	☐	☐	
Has an insurance company ever refused to provide or renew insurance because of wildfire risk?	☐	☐	☐
Has an insurance company charged a higher premium because of wildfire risk?	☐	☐	☐
Has an insurance company ever given you a discount on your premium because you have reduced wildfire risk on your property?	☐	☐	☐
Do you think your home is adequately insured against loss from wildfire?	☐	☐	☐
Has an insurance company ever required you to take action to reduce wildfire risk in order to continue coverage?	☐	☐	☐

Section 3: In this section, we ask about the characteristics of your Funny River home and the area near your Funny River home.

3.1. Does your Funny River home have any of the following roofing materials?

(Fill in all that apply)

- ☐ Tile, metal, or asphalt shingles
- ☐ Wood (shake shingles)

3.2. Does your Funny River home have any of the following exterior siding materials?

(Fill in all that apply)

- ☐ Stucco, cement, brick, stone, or other noncombustible siding
- ☐ Log or heavy timbers
- ☐ Wood or vinyl siding

3.3. Does your Funny River home have a **combustible** balcony, deck, porch, or fence attached to the structure? *(Fill in one circle)*

- ☐ No
- ☐ Yes

3.4. What is the **closest** distance from your Funny River home to combustible items other than vegetation such as lumber, firewood, a propane tank, flammable outdoor furniture, or other materials that could easily ignite, including an outbuilding/shed, detached garage, or other structure on your property? *(Fill in one circle)*

- ☐ More than 30 feet or no combustible items
- ☐ 5 – 30 feet
- ☐ Less than 5 feet

3.5. What is the **closest** distance from your Funny River home to overgrown, dense, or unmaintained vegetation? (*Fill in one circle*)

- ☐ More than 100 feet
- ☐ 30 – 100 feet
- ☐ 5 – 29 feet
- ☐ Less than 5 feet

3.6. Which of the following best describes the **majority** of the vegetation just beyond 100 feet from your Funny River home (about 6 car lengths)? That area might be outside your property boundary and include properties immediately surrounding you. (*Fill in one circle*)

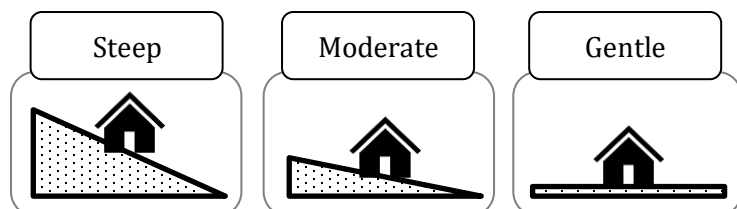
- ☐ Grasses with less than one-foot dead material
- ☐ Isolated shrubs/trees
- ☐ Wooded area with only hardwood trees (birch, aspen, alder, cottonwood) and no small trees/shrubs and tall dead grasses
- ☐ Mixed wooded area with both hardwood (birch, aspen, alder, cottonwood) and spruce trees; no small trees/shrubs and tall dead grasses underneath
- ☐ Mixed wooded area with both hardwood (birch, aspen, alder, cottonwood) and spruce trees; lots of small trees/shrubs and tall dead grasses underneath
- ☐ Dense spruce forest

3.7. What is the **closest** distance from your Funny River home to a neighboring home outside of your property? (*Fill in one circle*)

- ☐ More than 100 feet
- ☐ 30 – 100 feet
- ☐ 10 – 29 feet
- ☐ Less than 10 feet

3.8. The slope of a property refers to the steepness of the land. A large property may have steep, moderate, and gentle slopes. How would you describe the average slope **within 150 feet** of your Funny River home? (*Fill in one circle*)

- ☐ Steep – Greater than 45%
- ☐ Moderate – 20% to 45%
- ☐ Gentle – Less than 20%



3.9. What is the **closest** distance from your Funny River home to a ridge, steep drainage, or narrow canyon? *(Fill in one circle)*

- ☐ More than 150 feet
- ☐ 50 – 150 feet
- ☐ Less than 50 feet

3.10. Do any of the following describe your driveway? My driveway... *(Fill in one circle per row)*

	No	Yes
has an overhead obstruction (e.g., tree limbs) lower than 13.5 feet	☐	☐
is narrower than 20 feet wide	☐	☐
is longer than 150 feet	☐	☐
has room for a fire truck to turn around	☐	☐

3.11. Do any of the following describe your address number? My address number... *(Fill in one circle per row)*

	No	Yes
is visible from road?	☐	☐
has contrasting background?	☐	☐
is reflective?	☐	☐
has 3-inch numerals?	☐	☐
is made of durable material?	☐	☐

3.12. If the road you use to access your Funny River home was blocked during a wildfire, is there another road you could use to get out of your community? *(Fill in one circle)*

- ☐ No
- ☐ Yes

3.13. Properties in your community are assessed for overall wildfire risk based on the items asked about in questions 3.1 – 3.12 above. What do you think is your Funny River property's current overall wildfire risk rating? *(Fill in one circle)*

- ☐ Low risk
- ☐ Moderate risk
- ☐ High risk
- ☐ Very high risk
- ☐ Extreme risk

Section 4: In this section, we ask about wildfire risk reduction activities.

4.1. Have you ever talked about wildfire issues with a neighbor? *(Fill in one circle)*

- ☐ No
- ☐ Yes

4.2. Have you done any of the following wildfire-related activities? *(Fill in one circle per row)*

	No	Yes
Removed large or dense vegetation near my Funny River home (e.g., trees, brush)	☐	☐
Regularly cleared my roof and gutters of leaves and pine needles	☐	☐
Regularly mowed and raked around my Funny River home	☐	☐
Made my Funny River home more fire resistant (e.g., replaced roofing, siding, added screening under eaves)	☐	☐
Helped neighbor(s) reduce vegetation on their properties	☐	☐
Helped reduce vegetation on community property (e.g., parks, gun range, sport fields)	☐	☐
Reduced vegetation on nearby public lands (e.g., borough, state, federal lands)	☐	☐
Participated in a community wildfire preparedness activity (e.g., meeting, chipper day)	☐	☐
Met with a wildfire professional at my Funny River home to evaluate and discuss my property's wildfire risk	☐	☐
Interacted with public land managers about vegetation reduction on nearby public lands	☐	☐
Obtained a permit to burn in 2023 (e.g., for lawn burns, burn barrels, pile burning)	☐	☐
Obtained a permit to cut trees in the last two years on public lands (borough, federal)	☐	☐

4.3. How much do you think each of the following increases the chances of a wildfire damaging your Funny River property **in the next 12 months**? *(Fill one circle per row)*

	A lot	Somewhat	Not at all
Vegetation on my property	☐	☐	☐
Physical characteristics of my house or other buildings (e.g., roofing or siding) on my property	☐	☐	☐
Vegetation on my neighbors' properties	☐	☐	☐
Vegetation on nearby public or large undeveloped land	☐	☐	☐
Lack of nearby water supply (e.g., hydrant, cistern, lake) for fire suppression	☐	☐	☐

4.4. How acceptable are the following land management and regulatory approaches to **reducing wildfire risk** in Funny River to you? (Fill in one circle per row)

	Extremely acceptable	Very acceptable	Moderately acceptable	Slightly acceptable	Not at all acceptable
Removing trees and other vegetation (thinning) on nearby public lands	☐	☐	☐	☐	☐
Creating a fuel break on nearby public lands by removing all trees in a strip/corridor next to a community or other values at risk	☐	☐	☐	☐	☐
Removing all trees in a defined area (about 2 to 6 acres) on nearby public lands (patch cut)	☐	☐	☐	☐	☐
Removing trees and other vegetation along roadways for safer evacuation and emergency response	☐	☐	☐	☐	☐
Burning piles of cut vegetation (slash piles) on nearby public or Borough lands	☐	☐	☐	☐	☐
Removing vegetation along utility right of ways to reduce fire starts	☐	☐	☐	☐	☐
Conducting a prescribed fire ignited by fire professionals on nearby public lands	☐	☐	☐	☐	☐
Allowing a naturally ignited fire to burn on nearby public lands, when and where appropriate	☐	☐	☐	☐	☐
Establishing and managing public site to dispose of cut vegetation (slash)	☐	☐	☐	☐	☐
Allowing residents to reduce vegetation on nearby public lands	☐	☐	☐	☐	☐
Burning piles of cut vegetation (slash piles) on my or nearby private land	☐	☐	☐	☐	☐
Removing fire-prone trees (spruce) and planting fire-resistant trees (birch, aspen) on nearby public lands	☐	☐	☐	☐	☐
Building a new public road and bridge across Kenai River that could be used in emergency evacuation	☐	☐	☐	☐	☐
Growth policies or land use regulations that limit new development in fire-prone areas in Funny River	☐	☐	☐	☐	☐
Building codes that require fire resistant materials for structures located in fire-prone areas	☐	☐	☐	☐	☐
Development standards that require vegetation management (e.g., removing trees and mowing grass) on lots located in fire-prone areas	☐	☐	☐	☐	☐
Temporarily shutting off the power grid during extreme fire risk days to avoid wildfire ignitions	☐	☐	☐	☐	☐

Section 5: In this section, we ask about your notions, expectations, and risk perceptions related to wildfire.

5.1. How much do you agree or disagree with the following statements about wildfire?

(Fill in one circle per row)

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
With technology, we can control all wildfires.	☐	☐	☐	☐	☐
During a wildfire, I will receive an evacuation order with enough time to safely evacuate.	☐	☐	☐	☐	☐
Wildfires are a natural part of a healthy forest/ecosystem.	☐	☐	☐	☐	☐
I live here for the trees and will not remove any of them to reduce wildfire risk.	☐	☐	☐	☐	☐
Homeowners' actions to reduce wildfire are not effective.	☐	☐	☐	☐	☐
My property is at risk of wildfire.	☐	☐	☐	☐	☐
My effort to reduce wildfire risk on my property is not effective because of the vegetation on nearby private or public lands.	☐	☐	☐	☐	☐
Local firefighters have sufficient resources to protect threatened homes.	☐	☐	☐	☐	☐
Reducing wildfire risk on private property improves firefighter safety.	☐	☐	☐	☐	☐
Wildfires threaten my community water supply.	☐	☐	☐	☐	☐
I plan to move out of the area in the next 12 months because of wildfires.	☐	☐	☐	☐	☐
New residential development in nearby fire-prone areas increases the wildfire risk to my Funny River property.	☐	☐	☐	☐	☐

5.2. If there is a wildfire on your Funny River property, how likely do you think it is that the following would occur? *(Fill in one circle per row)*

	Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely	Not applicable
I would put the fire out.	☐	☐	☐	☐	☐	☐
The fire department would save my home.	☐	☐	☐	☐	☐	☐
My home would have smoke damage.	☐	☐	☐	☐	☐	☐
My home would have some physical damage.	☐	☐	☐	☐	☐	☐
My home would be destroyed.	☐	☐	☐	☐	☐	☐
I would lose money due to the loss of business or income on my property.	☐	☐	☐	☐	☐	☐
My trees and landscape would burn.	☐	☐	☐	☐	☐	☐
My neighbors' homes would be damaged or destroyed.	☐	☐	☐	☐	☐	☐
Direct flame would ignite my home.	☐	☐	☐	☐	☐	☐
Embers would ignite my home.	☐	☐	☐	☐	☐	☐
Nearby homes would ignite my home.	☐	☐	☐	☐	☐	☐

5.3. What do you think is the chance that a wildfire will be on your Funny River property **in the next 12 months**? *(Fill in one circle)*

For sure											No chance
100%	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%	
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

5.4. If there is a wildfire on your property **in the next 12 months**, what do you think is the chance that it will destroy or severely damage your Funny River home?
(Fill in one circle)

For sure											No chance
100%	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%	
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Section 6: In this section, we ask where you get information about wildfire, how useful the information is, how you receive information, and how you would like to receive information.

6.1. The following sources provide information about wildfire risk. If you have received information from one of these sources, how useful has it been? *(Fill in one circle per row)*

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful	Fill in this circle if you have NOT received information from this source
Central Emergency Services	☐	☐	☐	☐	☐	☐
Community group	☐	☐	☐	☐	☐	☐
Local tree contractor (tree cutter, tree services)	☐	☐	☐	☐	☐	☐
Office of Emergency Management	☐	☐	☐	☐	☐	☐
Local government	☐	☐	☐	☐	☐	☐
Tribal entity	☐	☐	☐	☐	☐	☐
2022 Kenai Peninsula Community Wildfire Protection Plan	☐	☐	☐	☐	☐	☐
Kenai Peninsula Ready-Set-Go! (info.kpb.us)	☐	☐	☐	☐	☐	☐
Alaska Firewise	☐	☐	☐	☐	☐	☐
Kenai National Wildlife Refuge	☐	☐	☐	☐	☐	☐
All Lands All Hands (ALAH)	☐	☐	☐	☐	☐	☐
Alaska Division of Forestry and Fire Protection	☐	☐	☐	☐	☐	☐
Chugach National Forest	☐	☐	☐	☐	☐	☐
Media (newspaper, TV, radio, internet)	☐	☐	☐	☐	☐	☐

6.2. How do you currently receive information about wildfire risk reduction, and how would you prefer to receive information? *(Fill in all circles that apply)*

I receive information from this source		I would like to receive information from this source
Email/e-newsletter	☐	☐
Social media (Facebook, Twitter)	☐	☐
Conversations with local wildfire specialists	☐	☐
Community meetings	☐	☐
Internet (non-social media)	☐	☐
Mailed newsletter	☐	☐
TV news	☐	☐
Newspaper	☐	☐
Radio	☐	☐

6.3. Do you know the number to reach the Office of Emergency Management call center? *(Fill in one circle)*

- ☐ No
- ☐ Yes

Section 7: In this section, we would like to know why you do or do not take action to reduce the risk of wildfire to your Funny River property.

7.1. Do any of the following **limit your ability** to take action to reduce the wildfire risk on your Funny River property (e.g., cutting trees, changing roof/siding)? *(Fill in all that apply for each row)*

Personal resources	Financial cost ☐	Time to do the work ☐	Physical ability to do the work ☐	None of these ☐
Lack of specific information about...	Factors contributing to my property's wildfire risk ☐	How to reduce wildfire risk on my property ☐	Where to dispose of cut vegetation (slash) ☐	None of these ☐
Personal perspectives	I do not want to change the way my property looks ☐	I do not think taking action would reduce my property's wildfire risk ☐	It's a low priority to me ☐	None of these ☐
Community	Lack of options for disposing of cut vegetation (slash) ☐	Restrictions on the changes I can make to my property ☐	Social pressure from neighbors ☐	None of these ☐

7.2. Would any of the following **encourage you** to take action to reduce the wildfire risk on your Funny River property? *(Fill in all that apply for each row)*

Resources	Cost-share or financial assistance ☐	Help doing the work ☐	Recommended tree contractors ☐	None of these ☐
Information	A report describing my property's wildfire risk factors ☐	Videos showing how to reduce risk on a property in my area ☐	One-on-one visit with wildfire risk experts on my property ☐	None of these ☐
Other	Feedback on work I've done to reduce my property's risk ☐	Recognition for taking action ☐	Neighborhood group that organizes wildfire risk-reduction activities ☐	None of these ☐

Section 8: In this section, we ask about personal and household characteristics. As with all questions in this survey, including those in this section, your name will not be connected to your answers in any way.

8.1. In general, do you view yourself as someone who is very willing to take risks or not at all willing to take risks? *(Fill in one circle)*

Very willing
to take risks

Not at all willing
to take risks

10

9

8

7

6

5

4

3

2

1

0

☐☐☐☐☐☐☐☐☐☐☐

8.2. What is your age? *(Fill in the blank)*

_____ years old

8.3. Are you? *(Fill in one circle)*

☐

Male

☐

Female

☐

Other

8.4. What is the highest grade or year of school you completed? *(Fill in one circle)*

☐

Less than high school

☐

High school graduate

☐

Some college or technical school

☐

Technical or trade school

☐

College graduate

☐

Some graduate work

☐

Advanced degree (M.D., M.A., M.S., Ph.D., etc.)

8.5. Which of the following best describes your current employment situation?
(Fill in one circle)

- ☐ Employed full time (including self-employed)
- ☐ Employed part time (including self-employed)
- ☐ Unemployed or do not work outside of the home
- ☐ Retired

8.6. Which of the following categories describes your annual household income?
(Fill in one circle)

- ☐ Less than \$24,999
- ☐ \$25,000 – \$49,999
- ☐ \$50,000 - \$74,999
- ☐ \$75,000 - \$99,999
- ☐ \$100,000 - \$199,999
- ☐ \$200,000 or more

Thank you for your help. Survey results will be reported in summary form and your name will not be connected to your answers in any way. Please use the space below to write any additional comments.

Appendix B: Wildfire Research (WiRē) Assessor Reference Guide and Data Collection Tool Instructions

Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

WiRē Assessor Reference Guide.	75
WiRē In-Field Rapid Assessment Instructions	91
WiRē Remote Rapid Assessment Instructions	99
Leave Behind Flyer	114

Assessor Reference Guide: Nikiski, Funny River, and Cooper Landing Study Areas

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What is in this guide?

This guide serves to orient assessors to the data collected as part of the WiRē Rapid Wildfire Risk Assessment. In Section 1, we describe the Rapid Assessment. In section 2, we provide the **Rapid Assessment Instructions**, which is guidance on how to choose which response category best reflects the condition observed at the parcel regardless of whether the Rapid Assessment is being conducted in-field or remotely. In Section 3, we present the **Rapid Assessment Scoring** that presents the risk score for each attribute response category, the weight of the attribute within the overall risk score, and the score ranges included in each risk rating category.

1 What is the WiRē Rapid Wildfire Risk Assessment?

The WiRē Rapid Wildfire Risk Assessment is comprised of 13 attributes that include building materials, vegetation, and other combustibles near the home; background fuels and topography; and access to the property (see Figure 1). To calculate a parcel's overall "risk score" (continuous number on a 1000-point scale), each Rapid Assessment attribute is weighted, reflecting its relative contribution to parcel-level wildfire risk (see Figure 2). For example, because roofing materials can present a more significant risk than address posting, these attributes are weighted differently, constituting 30% and 1% of the overall risk score, respectively.

Importantly, a parcel-level risk rating does not account for all components of risk, including variable or extreme weather conditions and some factors which can only be captured during a comprehensive on-site consultation (e.g., vent screen size, windows, fire-resistant flashing, etc.). Thus, WiRē risk scores are not an absolute measure of risk but are estimates of risk using a standardized suite of variables observed by a particular person at one point in time.

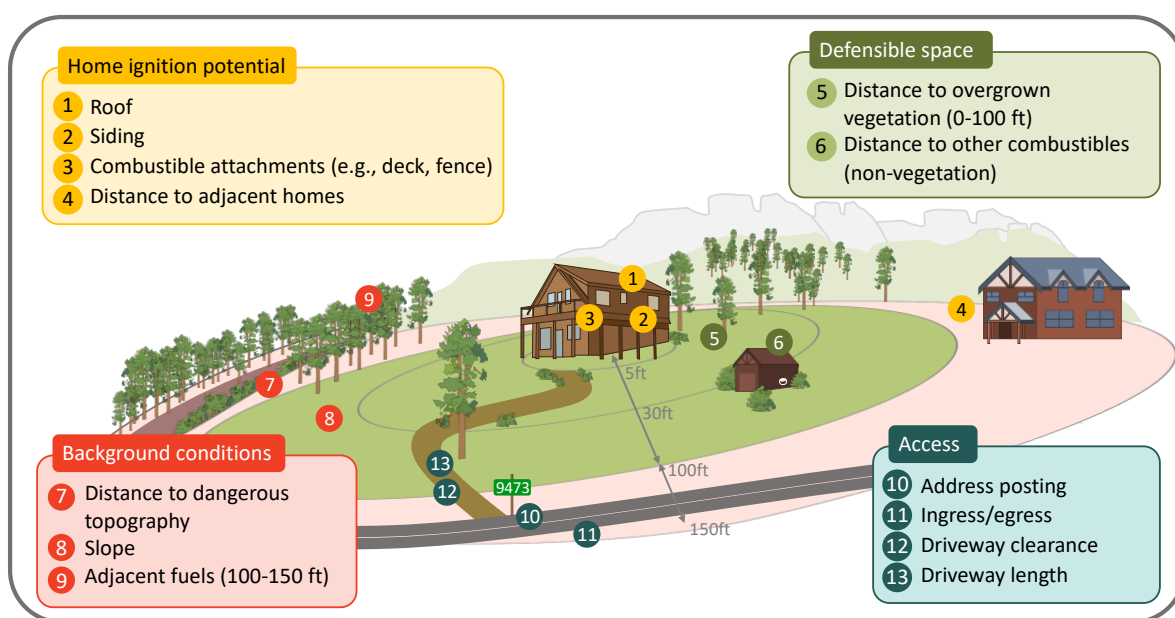


Figure 1. WiRē Rapid Wildfire Risk Assessment: A Visual Guide

Things to keep in mind

- **Risk mitigation, not suppression.** The goal of the risk assessment is to identify potential ways to mitigate risk. While the risk assessment includes dimensions associated with structure protection, it is not specific to wildfire response.
- **Subjectivity.** Wildfire professionals may rate certain components of the WiRē Risk Assessment differently. This guide is intended to help increase consistency across assessors, making the resulting data as consistent as possible.

- **Consistency of messaging.** It's important to build consistency between the risk assessment and the messaging of the rest of your programs.

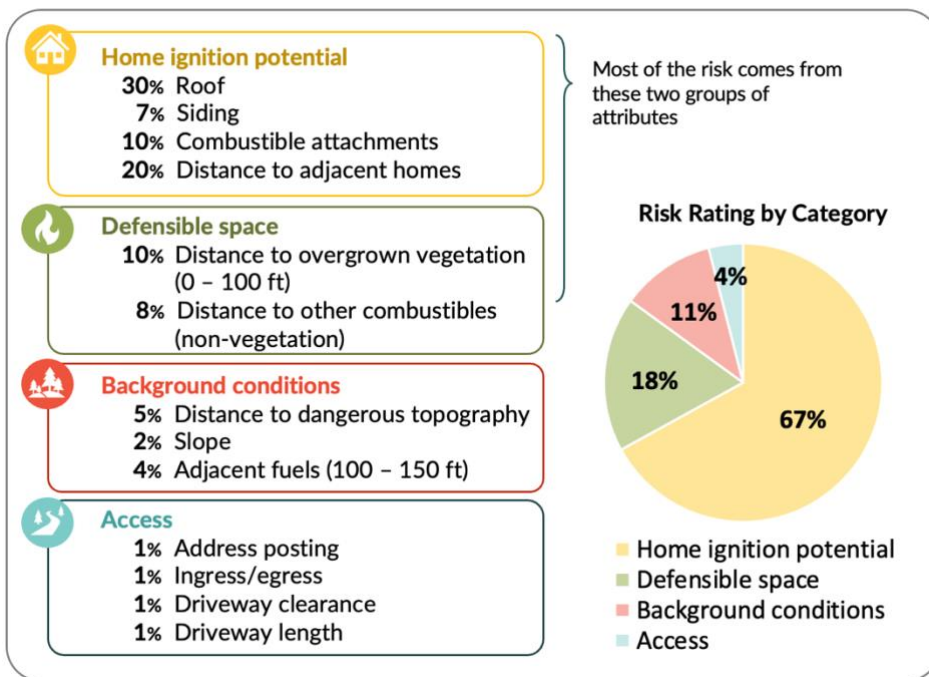


Figure 2. How much does each risk assessment attribute contribute to a property's risk?

2 Rapid Assessment Instructions

This section presents guidance on how to choose which response category best reflects the condition observed at the parcel. Because this is a rapid assessment, some of the attributes may be unobservable. For example, in the case of assessments conducted from the road, if the back of the house is not visible from the road, several attributes may be unobservable (e.g., combustible attachments, other non-vegetation combustibles). Similarly, if the assessment is being conducted using aerial imagery, the siding material may not be distinguishable. For these instances, we include an additional response category “unknown/not observed” for all the risk attribute questions.

During data processing, we retain the unobserved status and include the attribute in the risk score by assigning the highest risk score for the attribute in question. This is consistent with other parcel risk and structure protection assessments. If a particular attribute is “unknown/not observed” or missing, practitioners and firefighters assume that a hazard exists. At best, the correct attribute response is chosen; at worst, the assessment invites a conversation with the parcel owner to delve deeper into the mitigation needs of the parcel in question and an update to their parcel risk assessment.

In the remainder of this section, we present a set of tables (Tables 1 to 6, respectively) organized by the categories: general information, home ignition potential, defensible space,

background conditions, access, and community-specific information. Each table includes the following:

- Background information about the risk attribute,
- the response categories and associated risk scores, and
- additional information on how to select a response category for a given property.

Table 1. General information

Attribute (<i>variable name</i>)	Response categories	Attribute suggestions
Structure type (<i>structype</i>) <i>This variable helps WiRē understand whether to send a household survey to the parcel. As part of the WiRē process, we only send household surveys to properties with a residential structure.</i>		
What is the primary use of this structure?	Residential	Select the structure/property type that best reflects the observed use.
	Not residential, developed	
	Not residential, undeveloped/no structures	
	Unknown	Select unknown if you drive by and see an orange parcel with a visible address sign but cannot see the residential structure from the roadside.
Gate (<i>gate</i>) – In-field assessments only <i>Locked gates restrict emergency responders to safely defend a structure in the event of a wildfire.</i>		
Is there a gate that blocks access the property?	No gate present	Denote whether there is a gate that blocks access to the property (yes/no – does not matter if it is locked or not). If there are two clear driveways and only one has a gate, select “gate present”.
	Gate present	
	Unknown – not observed	If you cannot observe the attribute at all, choose "Unknown - not observed."
Comments (<i>comments</i>)		
Open field for any assessor comments (ex. home currently being built, more than one residential structure).		

Table 2. Risk attributes related to home ignition potential

Risk attribute (<i>variable name</i>)	Response categories	Score	Attribute measurement suggestions
Roof (roof) <i>The roof plays a major role in the vulnerability of the home to fire, particularly airborne embers, which can burn through roofing.</i>			
What is the most vulnerable roofing material?	Tile, metal, or asphalt shingles	0	Tile, metal, or asphalt shingles are commonly associated with a Class A roofing assembly - though not in all cases. Certainly, there are some additional types of roofing materials that are used besides the ones listed, in which case the assessor should decide using best available information related to the roofing material and its potential ignitability. In other instances, multiple types of roofing materials are used, particularly in homes with complex roof lines, dormers, and extensions. In these cases, we recommend rating the entire roof as the most vulnerable section.
	Wood (shake shingles)	300	
	Unknown - not observed	300	If you cannot observe the attribute at all, choose "Unknown - not observed."

Table 2. Risk attributes related to home ignition potential

Risk attribute (<i>variable name</i>)	Response categories	Score	Attribute measurement suggestions
Siding (<i>siding</i>) <i>After the roof, the exterior siding represents the second largest surface that is exposed to potential ignition risks.</i> <i>This is probably the most challenging domain to assess during the Rapid Assessment, for many reasons including 1) there are dozens of commonly used siding materials, many of which claim to be ignition resistant or noncombustible; 2) it is very common for a home to incorporate multiple different types of exterior cladding/siding; 3) some of the newer available products that fall in the general category of "fiber cement siding" have been designed to mimic wood; and 4) not all stucco applications meet fire resistant standards.</i> <i>It is up to the assessor to identify the most vulnerable exterior siding material, even if it constitutes a small portion of the total.</i>			
What is the most vulnerable exterior siding material?	Stucco, cement, brick, stone, or other non-combustible siding	0	This category includes brick, stone, block, concrete synthetic stone, metal, stucco (3 stage or EIFS), fiber cement (ex. Hardie Board) or other materials that are considered Class A or B.
	Log or heavy timbers	35	To qualify as log, it needs to be considered "heavy log construction" with a minimum log diameter of 6 inches with all bark striped and incorporating a chinking material to fill the gaps between the logs.
	Wood or vinyl	70	Wood or vinyl siding only. Faux logs, D-Link, and square logs qualify for this category.
	Unknown - not observed	70	If you cannot observe the attribute at all, choose "Unknown - not observed."

Table 2. Risk attributes related to home ignition potential

Risk attribute (<i>variable name</i>)	Response categories	Score	Attribute measurement suggestions
Combustible attachments (<i>attach</i>) <i>Decks, fences, and other attachments are well known to be considerable sources of home ignition vulnerability.</i>			
Does the home have a combustible balcony, deck, porch, or fence attached to the structure?	No combustible attachments	0	If there is not anything attached to the structure, then the answer is no combustible attachments. If a deck, fence, or other attachment is present, the assessor will need to determine to what extent the attachment poses an ignition risk based upon an observation of the combustibility of such attachment.
	Combustible attachments present	100	While composite decking boards (ex. Trex) are considered by many to be a better alternative than standard decking boards, this risk assessment categorizes composite decking as "combustible."
	Unknown - not observed	100	If you cannot observe the attribute at all, choose "Unknown - not observed."
Distance to adjacent homes (<i>closehome</i>) <i>Home to home ignitions (i.e., conflagration) are a significant factor in the spread of fire through more densely built environments.</i>			
What is the closest distance to a neighboring home?	More than 100'	0	When assessing the home, determine the distance to the nearest neighboring home.
	30' - 100'	50	
	10' - 29'	100	
	Less than 10'	200	
	Unknown - not observed	200	If you cannot observe the attribute at all, choose "Unknown - not observed."

Table 3. Risk attributes related to defensible space

Risk attribute (<i>variable name</i>)	Response categories	Score	Attribute measurement suggestions
Distance to overgrown vegetation (0 – 100 ft) (<i>dspace</i>) <i>Primary experimental research from the International Crown Fire Modeling Experiment (1998) demonstrated that structures (stick built, T-1-111 siding, composite shingles) were able to survive (with light scorch) from the <u>radiant</u> heat of an active crown fire at a distance as little as 10 meters (32.8 ft), without direct flame contact, but did ignite when the structure was exposed to direct flames. At 30 meters (98.42 ft), the same structures survived without any scorch. Along with modeling, case studies, and other research, this famous experiment laid the foundation for the classic zones of defensible space: Zone 1 (0-30 ft) / Zone 2 (30-100 ft) / Zone 3 (100 ft or more with slope factor). Additional understanding and research have led to a fuller understanding of ignition vulnerabilities for the home (primarily related to ember ignitions). The 5-ft zone should be devoid of all combustible materials (including bark mulch or combustible vegetation).</i>			
What is the closest distance from the home to overgrown, dense, or unmaintained vegetation?	More than 100'	0	Use best professional judgement to determine the distance between the home and any "overgrown, dense, or unmaintained vegetation." It is important to consider whether the property's <i>particular</i> vegetation would more likely than not contribute to an active wildland fire and thusly expose the home in question to direct flames, radiant heat, and/or convective heat that could presumably result in ignition in most imagined scenarios. In other words, if you were recommending treatment/mitigation for defensible space, would you recommend that the vegetation in question be managed within 5ft, 30ft, or 100ft of the home? If you cannot observe the attribute at all, choose "Unknown - not observed."
	30' - 100'	50	
	5' - 29'	75	
	Less than 5'	100	
	Unknown - not observed	100	

Table 3. Risk attributes related to defensible space

Risk attribute (<i>variable name</i>)	Response categories	Score	Attribute measurement suggestions
Distance to other combustibles (non-vegetation) (<i>combustibles</i>) <i>Other combustibles are extremely common. These materials represent a risk, particularly related to ember ignition exposure.</i>			
What is the closest distance from the home to combustible items other than vegetation such as lumber, firewood, a propane tank, hay bales, or other materials that could easily ignite?	More than 30' or no combustible items	0	Are there any other combustible materials that a structure triage group (group responsible for deciding how defensible a home is and what firefighter efforts would need to include) would likely want to remove/clean up in the event of an approaching wildfire? If so, how close to the home are these items to the home? For example, outbuildings, sheds, detached garages, lumber, construction materials, firewood, propane tanks, hay bales, leaves, wicker furniture, or decorative ornaments.
	5' - 30'	40	
	Less than 5'	80	
	Unknown - not observed	80	If you cannot observe the attribute at all, choose "Unknown - not observed."

Table 4. Risk attributes related to background conditions

Risk attribute (<i>variable name</i>)	Response categories	Score	Attribute measurement suggestions
Distance to dangerous topography (<i>topo</i>) <i>Topography is one of three main factors that influence wildland fire behavior. Certain topographic features, such as ridges, chimneys, and drainages are known to dramatically increase fire behavior (rate of spread, flame length, etc.). As such, homes that are located close to, and in direct alignment with, these features are at significantly higher risk than those homes that are situated back and away from such features. Topography has a perceived overlap with slope; however, slope is designed to capture the "grade" of the land rather than specific topographic features.</i>			
What is the closest distance from the home to a ridge, steep drainage, or narrow canyon?	More than 150'	0	The goal of this attribute is to assess the proximity of the home to topographical features that can increase fire behavior. This is specifically regarding topographic features like ridges, steep drainages, or narrow canyons. This does not include the home being on a steep slope, which will be assessed with the "slope" attribute.
	50' - 150'	25	
	Less than 50'	50	
	Unknown - not observed	50	If you cannot observe the attribute at all, choose "Unknown - not observed."

Table 4. Risk attributes related to background conditions

Risk attribute (<i>variable name</i>)	Response categories	Score	Attribute measurement suggestions
Slope (<i>slope</i>) <i>The overall slope of the land where the home is situated has a significant influence on how wildfire will likely behave. As slope increases, the potential for elevated fire behavior characteristics increases as well.</i>			
The slope of a property refers to the steepness of the land. A large property may have steep, moderate, and gentle slopes. How would you describe the slope within 150 feet of the home ?	Gentle: less than 20%	0	Slope is a measurement of the vertical rise between at least two points.
	Moderate: 20% - 45%	10	To maintain consistency for in-field assessments, we recommend that each assessor utilize the same methodology for estimating slope. If the slope varies across the property, do your best to make an estimate of the overall lay of the land within approximately 150 feet of the home.
	Steep: greater than 45%	20	PLEASE NOTE THE DIFFERENCE BETWEEN PERCENT SLOPE AND DEGREES.
	Unknown - not observed	20	If you cannot observe the attribute at all, choose "Unknown - not observed."

← "Steep" rating

"Moderate" rating →

← "Gentle" rating →

Slope = 100%

Rise

300 ft

90°

45°

300 ft

Run

— = $\frac{300}{300}$ = 100%

Slope = 45%

135 ft

300 ft

42°

— = $\frac{135}{300}$ = 45%

Slope = 20%

60 ft

300 ft

20°

— = $\frac{60}{300}$ = 20%

Slope = 0%

0 ft

300 ft

— = $\frac{0}{300}$ = 0%

Table 4. Risk attributes related to background conditions

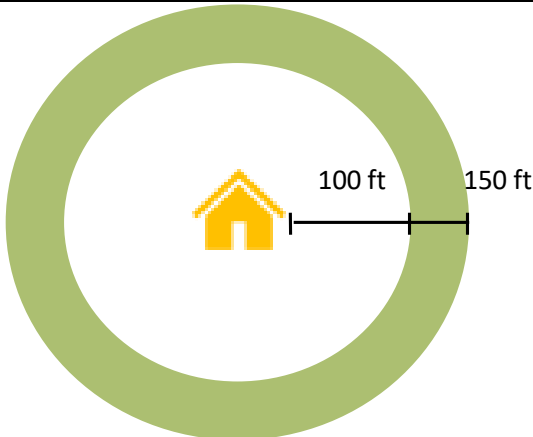
Risk attribute (<i>variable name</i>)	Response categories	Score	Attribute measurement suggestions
Adjacent fuels (100 – 150 ft) (<i>adjfuels</i>) <i>This attribute is a proxy for fuel type and fuel load/density. It does not necessarily analyze factors related to fuel conditions that are critical to understanding future potential wildfire behavior including: true fuel type, fuel arrangement, fuel continuity (vertical and horizontal), fuel moistures, fuel loads, combustion characteristics, etc. As such, this attribute is representative of the fuels and is likely subject to some degree of assessor interpretation.</i>			
Which of the following best describes the dominant vegetation 100' - 150' from the home? <i>This may be outside the property boundary.</i>	Light: Grasses with less than 1' accumulated dead material or hardwood stand (e.g., birch, aspen, alder, cottonwood) without spruce and without a dense understory	10	Within a band starting at 100' from the home (limits of defensible space) and extending out to 150' from the home, in all directions, estimate what is the dominant and primary fuel description.
	Medium: Isolated shrubs/trees or mixed hardwood/spruce stand without a dense understory	20	To assess this, we recommend considering: 1) vertical density (ladder fuels), 2) horizontal density (spacing of vegetation), and 3) fuel type (e.g., coniferous vs. deciduous).
	Dense: Dense spruce stand or mixed hardwood/spruce stand with dense understory (e.g., small spruce, dead grasses, thick lichen)	40	
	Unknown - not observed	40	If you cannot observe the attribute at all, choose "Unknown - not observed."
			

Table 4. Risk attributes related to background conditions

Risk attribute (<i>variable name</i>)	Response categories	Score	Attribute measurement suggestions
Adjacent fuels (100'-150') response category examples			
	Light	Medium	Dense

Table 5. Risk attributes related to access

Risk attribute (<i>variable name</i>)	Response categories	Score	Attribute measurement suggestions
Address posting (<i>address</i>) – In-field assessments only <i>A clearly visible address sign, that remains visible in the dark (e.g., night, smoky) is critical for safe and effective emergency response. Assessors should note *all* the standards to determine which response to select.</i>			
Does the address sign meet the standards? - Numbers 3" high - Numbers on contrasting background - Durable material - Visible from road - Reflective	Fully meets standards	0	Use this category if the address sign fully meets or exceeds the standards.
	Address sign is visible, but does not meet all standards	5	Use this category if the address sign is visible from the road but does not meet all standards (ex: it is not reflective).
	Not posted or visible from the road	10	Use this category if the address sign either (A) does not appear to exist or (B) is not visible.
	Unknown - not observed	10	If you cannot observe the attribute at all, choose "Unknown - not observed."
Ingress/Egress (<i>roads</i>) <i>Safe and effective ingress and egress is a critical component to community planning as well as emergency response and evacuation. In certain locations there may be more than one road out from the immediate house, but over some distance, these multiple roads may funnel into a single ingress/egress route which would constitute only one way in/out.</i>			
If the road to access the home was blocked due to a wildfire, is there another road to get out of the community?	Two or more roads in/out	0	Use this category if there are two ways to leave the community from the end of the property's driveway, which would allow evacuation to occur in two or more directions. For example, at the end of the driveway there are two different roads that can get to the highway.
	One road in/out	10	Use this category if the property has just one ingress/egress route that reaches a location considered safe in the event of a wildfire.
	Unknown - not observed	10	If you cannot observe the attribute at all, choose "Unknown - not observed."

Table 5. Risk attributes related to access

Risk attribute (<i>variable name</i>)	Response categories	Score	Attribute measurement suggestions
Driveway clearance (<i>drivewayclr</i>) <i>Driveway clearance is critical for access to the property by wildland fire engines, structure fire apparatus, and other emergency responders. Ideally, each driveway should provide enough horizontal width so that two vehicles can easily pass one another along the driveway and enough vertical clearance so fire apparatus is able to pass through. Assessors should note *both* the standards to determine which response to select.</i>			
Does the driveway meet the following clearance standards: - At least 13.5' height - At least 20' width	Meets both standards (height and width)	0	Height (vertical standard): Overhanging tree branches or ranch-style gateways can create vertical obstructions. The vertical standard for this assessment is 13.5 feet. Width (horizontal standard): Width refers to horizontal obstruction-free clearance that would permit vehicle access, not just road base. The horizontal standard for this assessment is 20 feet. For example, if the driveway road base is 12' wide and bordered by flat ground that could easily be driven on by any firefighting vehicle, with no obstructions for at least 4' on each side (20' total), driveway meets width standard.
	Meets one, but not both, standards (height or width)	5	However, if there are obstructions, such as vegetation, driveway gateways or anything else that would make it difficult or impossible to access the home, at any point, then the assessor should rate this domain as either "Meets one, but not both, standards (height or width)" or "Does not meet either standard (height and width)" depending on an observational estimate of the width of the driveway.
	Does not meet either standard (height or width)	10	
	Unknown - not observed	10	If you cannot observe the attribute at all, choose "Unknown - not observed."

Table 5. Risk attributes related to access

Risk attribute (<i>variable name</i>)	Response categories	Score	Attribute measurement suggestions
Driveway length (<i>drivewayl</i>) <i>The longer the driveway, the more risk exposure for responders and the less likely that they will choose to access the property during a wildfire.</i>			
What best describes the driveway?	Less than 150' long with "adequate" turnaround	0	In the field, length should be visually estimated (do NOT drive down the driveway). "Adequate" is considered in the context of a Type 1 fire engine (classic large fire engine).
	Less than 150' long without "adequate" turnaround	0	
	150' or more with "adequate" turnaround	5	
	150' or more without "adequate" turnaround	10	
	Unknown - not observed	10	If you cannot observe the attribute at all, choose "Unknown - not observed."

Table 6. Community-specific information

Attribute (<i>variable name</i>)	Response categories	Attribute measurement suggestions
Driveway steepness (<i>driveways</i>) <i>Driveway steepness affects firefighter's ability to access a property during an event. Considering slope alone and with all other driveway access attributes being accessible, a 10% slope is the maximum steepness accessible for 2WD Type 1 vehicle, and 20% slope requires a 4WD vehicle.</i>		
What is the slope of the driveway?	Less than 10%	Slope is a measurement of the vertical rise between at least two points. If the slope varies across the driveway, record the slope of the steepest section if that section is 5' long or more.
	10% to 20%	
	Greater than 20%	To maintain consistency during in-field assessments, we recommend that each assessor utilize the same methodology for estimating slope.
	Unknown - not observed	If you cannot observe the attribute at all, choose "Unknown - not observed."

3 Rapid Assessment Scoring

WiRē Rapid Assessment Scoring Guide

	Risk attribute	Response categories	Attribute weight	Category score
Home ignition potential	Roof	Tile, metal, or asphalt shingles	30%	0
		Wood (shake shingles)		300
	Siding	Stucco, cement, brick, stone, or other noncombustible siding	7%	0
		Log or heavy timbers		35
		Wood or vinyl siding		70
	Combustible attachments	No combustible attachments	10%	0
		Combustible attachments present		100
	Distance to adjacent homes	More than 100'	20%	0
		30' - 100'		50
		10' - 29'		100
		Less than 10'		200

Defensible space	Distance to overgrown vegetation (0' - 100')	More than 100'	10%	0
		30' - 100'		50
		5' - 29'		75
		Less than 5'		100
	Distance to other combustibles (non-vegetation)	More than 30' or no combustible items	8%	0
		5' - 30'		40
		Less than 5'		80

Risk rating	Low	20	260
	Moderate	261	325
	High	326	455
	Very high	456	540
	Extreme	541	1000

	Risk attribute	Response categories	Attribute weight	Category score
Background conditions	Distance to dangerous topography	More than 150'	5%	0
		50' - 150'		25
		Less than 50'		50
	Slope	Gentle: Less than 20%	2%	0
		Moderate: 20% - 45%		10
		Steep: Greater than 45%		20
	Adjacent fuels (100' - 150')	Light	4%	10
		Medium		20
		Dense		40

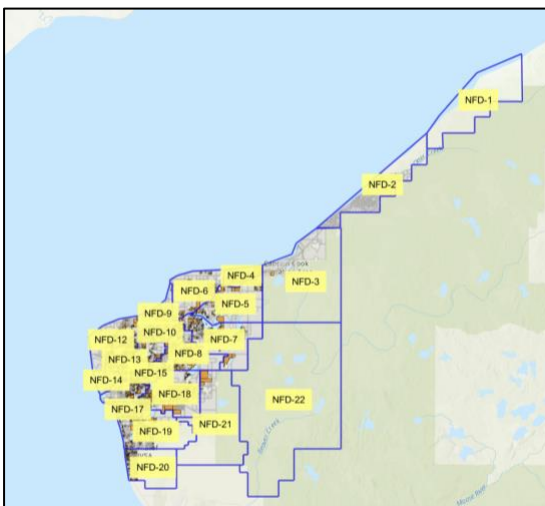
Access	Address posting	Fully meets standard	1%	0
		Visible, but does not meet all standards		5
		Not posted/visible from the primary road		10
	Ingress/Egress	Two or more roads in/out	1%	0
		One road in/out		10
	Driveway clearance	Meets both standards (height and width)	1%	0
		Meets one, but not both, standards (height or width)		5
		Does not meet either standard (height or width)		10
	Driveway length	Less than 150' long with "adequate" turnaround	1%	0
		Less than 150' long without "adequate" turnaround		0
		150' or more with "adequate" turnaround		5
		150' or more without "adequate" turnaround		10

1 Nikiski and Cooper Landing Rapid Assessment

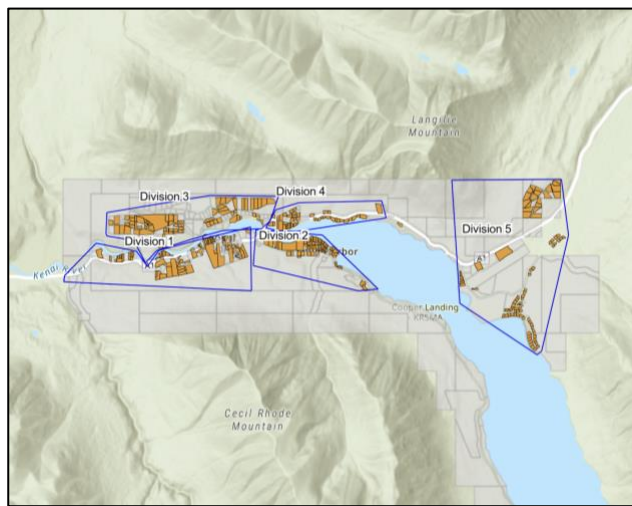
Instructions for Using ArcGIS Field Maps

Before starting the WiRē rapid wildfire risk assessments, it's important to remember the strong tie between the rapid assessment and homeowner survey. The driving principle behind the paired data collection approach is to empower residents to take action to reduce their wildfire risk.

Be consistent with the response categories throughout data collection. The goal of the WiRē rapid assessment is to assess all parcels with residential structures in the study area, which comprise approximately 2,655 residential parcels in Nikiski¹ and 350 residential parcels in Cooper Landing. These parcels are indicated on the maps below in solid orange. The blue boundary lines represent the different assignment areas.



Nikiski Study Area



Cooper Landing Study Area

¹ There are 105 additional residential structures in Nikiski that will not be assessed in the field due to accessibility and safety concerns. In lieu of the in-field rapid assessment, WiRē will conduct remote assessments.

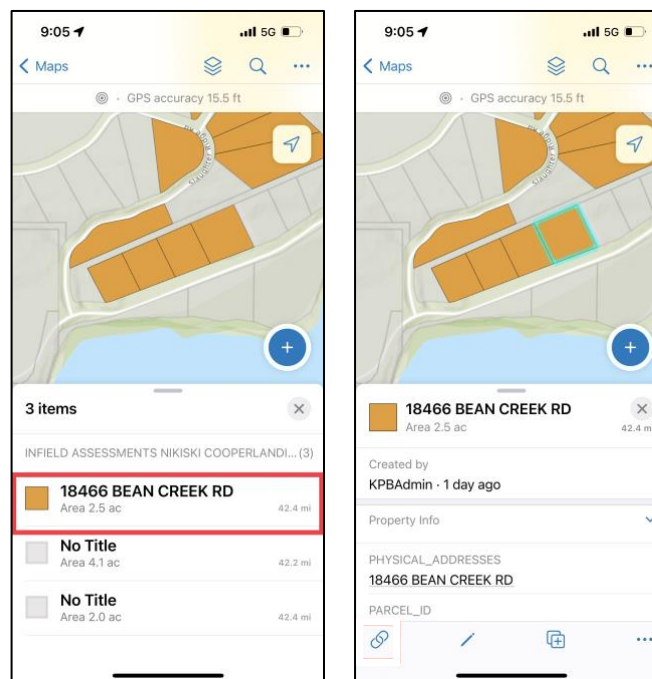
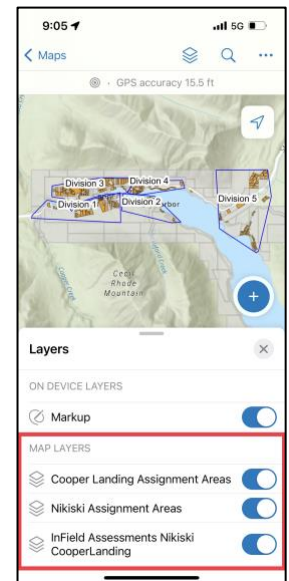
1.1 How to access the data collection app



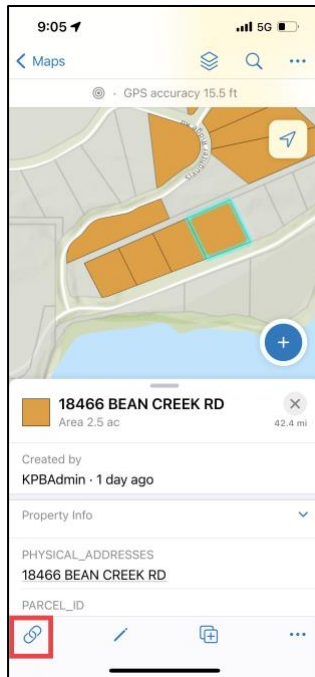
1. Download ArcGIS Field Maps onto your tablet or other device.
2. Log into the app using your personal username and the following password:
 - a. Volunteer@wire321
3. Select the map called wr024_InField_RA
 - a. To zoom into the Nikiski study area, click the layers button and click “Nikiski Assignment Areas”.
 - b. To zoom into the Cooper Landing study area, click the layers button and click “Cooper Landing Assignment Areas”

1.2 How to access the rapid assessment data form

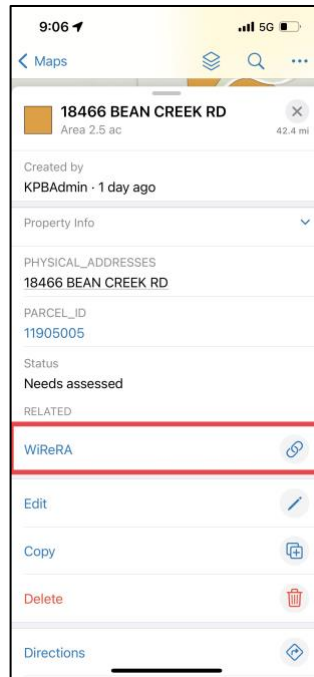
1. Open Field Maps.
2. You will only assess orange parcels, which have been identified as residential. If you pass a gray parcel on your way to get to an orange parcel that has a residence on it, please stop and conduct an assessment using the same directions as below. Do not go out of your way to check every gray parcel.
3. Select an orange polygon, and a sidebar will pop up. Select the orange polygon.



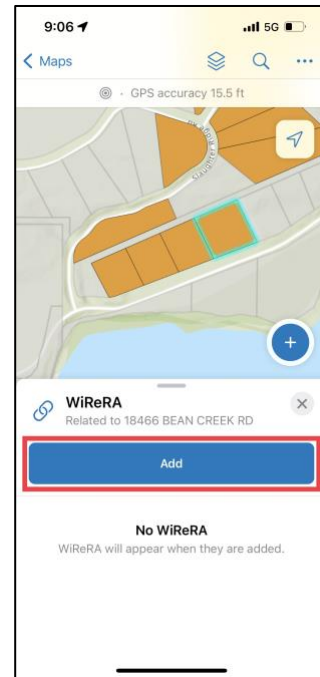
4. There are two ways to access the rapid assessment form.
 - a. Option 1: At the bottom of your phone/device, you will see a symbol that looks like two linked chains. Select that to collect data for the parcel. Then click the blue “Add” button.
 - b. Option 2: Scroll down and select “WiReRA.” Then click the blue “Add” button.



Option 1



Option 2



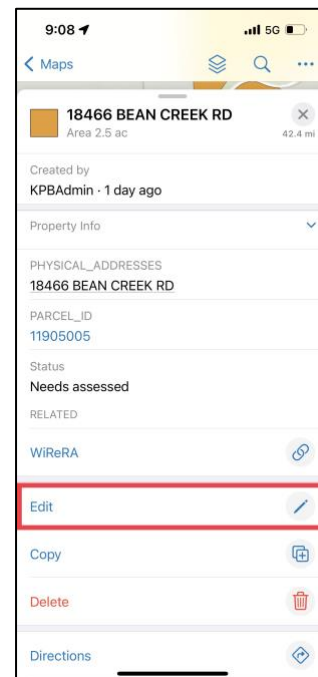
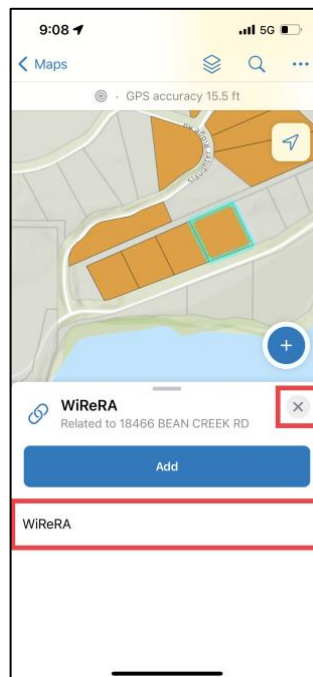
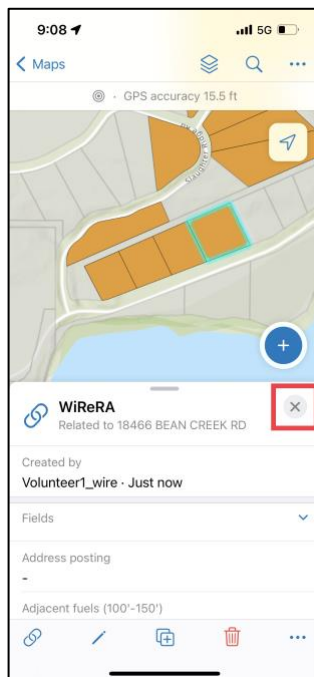
Add button

5. Fill out the form following protocols outlined in the Assessor Reference Guide.
 - a. If you are not able to tell if the parcel is residential, do not complete an assessment and edit the status to “cannot complete” as described under step 7.

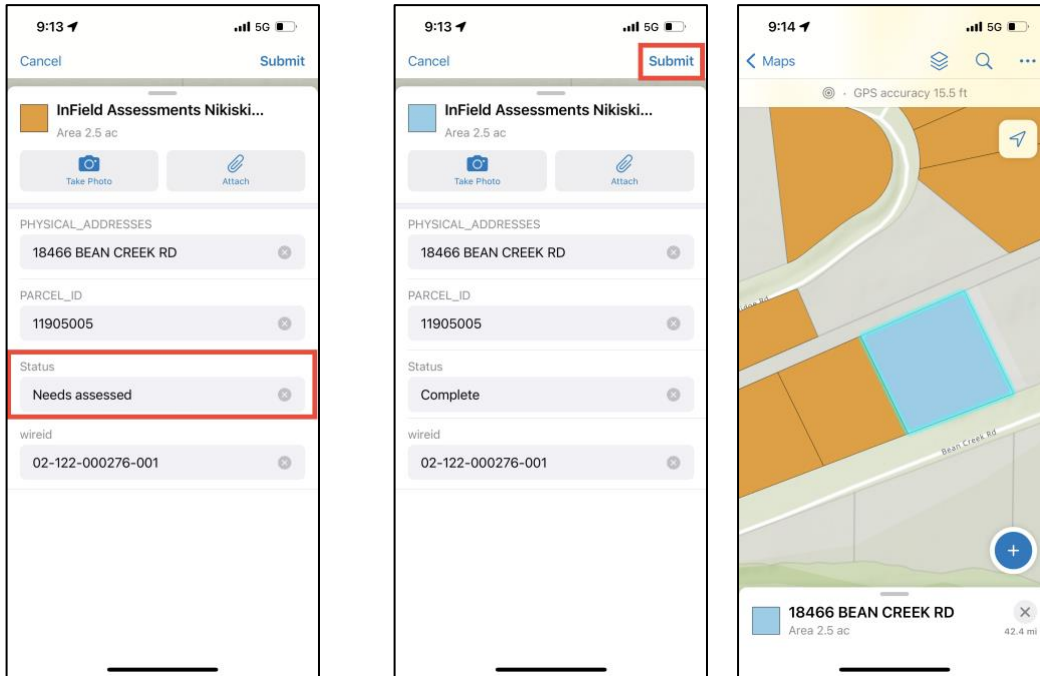
6. When done filling out the form, click submit in top, right-hand corner (android will show a checkmark).

The screenshot shows the WiReRA form submission screen. At the top, there are 'Cancel' and 'Submit' buttons. The 'Submit' button is highlighted with a red box. Below the buttons, the form fields are visible, including 'Structure type' (Residential), 'Gate' (No gate present), 'Roof' (Tile, metal, or asphalt shingles), 'Siding' (Wood or vinyl), and 'Combustible attachments' (Unknown-not observed). The 'Submit' button is located in the top right corner of the form.

7. We need you to take several more steps to call it complete/change the symbology.
 - a. Click on the X. Click on the X again. Note: you should see the words “WiReRA” to indicate your rapid assessment form was submitted.
 - b. Then click on the edit button.



- c. Scroll down to Status, click on the drop-down, and select “Complete”, then click Submit. The parcel should change from orange to blue. **Do NOT click the “Add Point” button.**
 - i. Change status to “Cannot complete” if it is unsafe to conduct an assessment, or if you cannot conduct an assessment from the road.



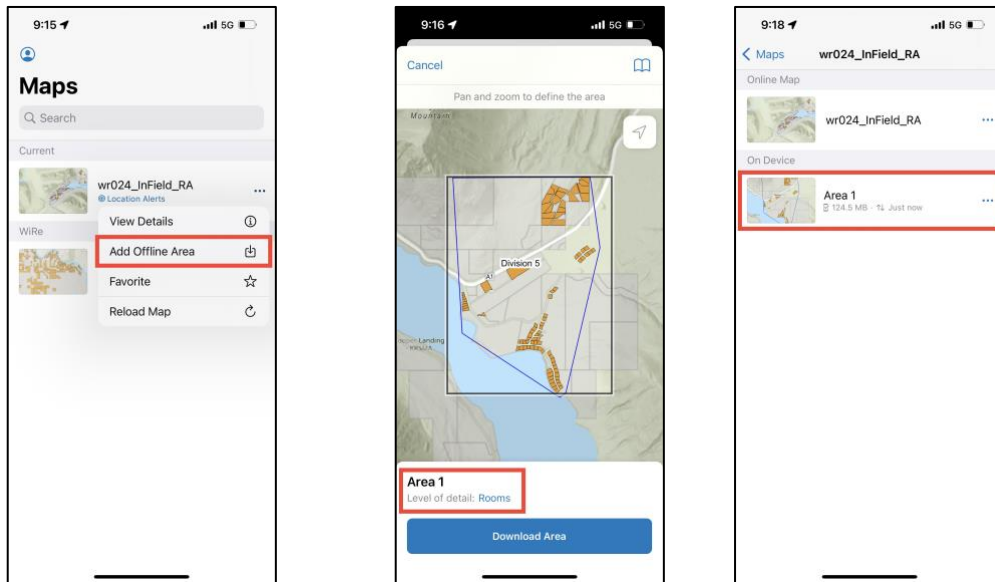
1.3 What to do when there are multiple structures on a property

1. Some parcels might have multiple structures on them. Please complete a separate WiReRA for **all** residential structures on a property. To do this, assess the main residential structure first.
2. To assess another residential structure on the same parcel, select the same parcel in Field Maps again and follow the same procedures in Section 1.2. Add in a description in the comments field to indicate it is a new residential structure such as ‘2nd house on property possibly a rental’ or ‘3rd residence on parcel appears used.’

1.4 How to add an off-line area

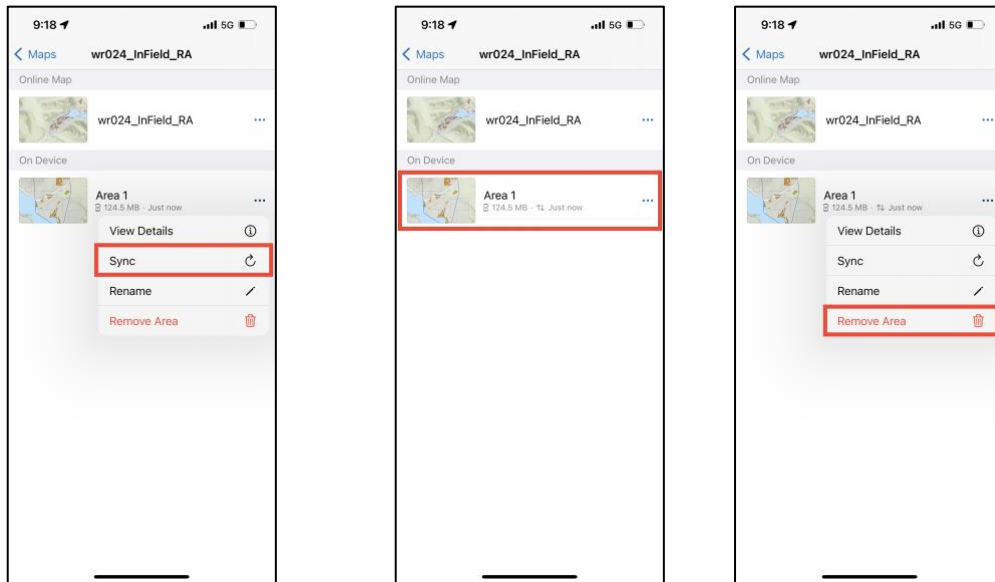
1. From the main screen in Field Maps, select the three dots next to the “wr024_InField_RA” and select “Add Offline Area”

2. Move the box over the area where you will conduct the rapid assessments. You may need to set the level of detail to fit the scale. In the example below, I selected “Rooms” to capture all of Division 5 in Cooper Landing. Then select “Download Area”. It may take some time to fully download. I had the best luck at the front of the fire station. Once the area is downloaded, you can go collect the data.



1.5 How to sync after being off-line?

1. When you have finished for the day, return to a place where you have WiFi to sync your work.
2. Go the map screen, select the three dots next to the offline area you created, and then select “Sync.”
3. You will know it has synced because the time will update. Right after you sync, it should say “Just Now”.
4. Once you’ve synced the data, click on the three dots again and select “Remove Area.” This will return you to the full view of the area.



1.6 What to do with multi-unit attached structure (ex., duplex, condos, apartment buildings) embedded in one white polygon

1. If a property has a structure with multiple units, conduct one rapid assessment for the entire structure and add a note in the comments field to let us know it was a multi-unit structure.
2. When you have submitted the rapid assessment and select "Complete" then the unit will turn blue, not the entire polygon.

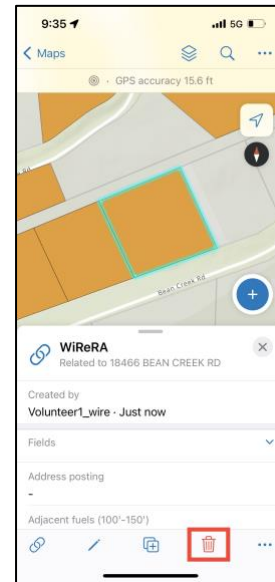
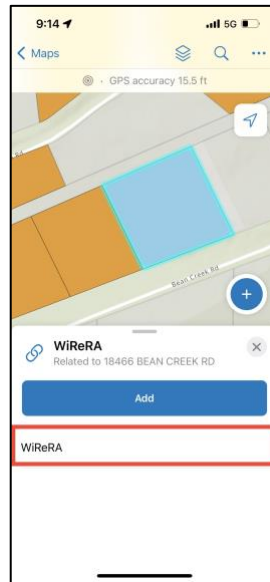
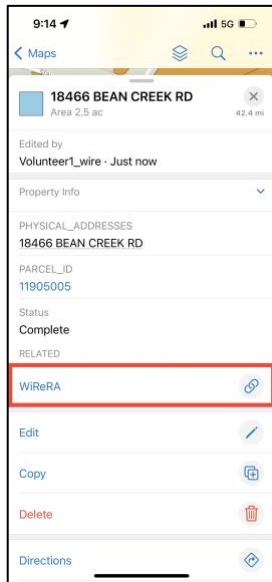
1.7 How to delete rapid assessment data, should you need to

1. While this should not happen often, there may be an instance where you need to delete the rapid assessment data associated with a parcel. To do this, select the parcel and click the link for WiReRA.

Note: Do NOT click the button that says "Delete" in red font next to the trashcan. This will delete the parcel.

2. Then you will see a screen with a link to the rapid assessment form called "WiReRA". Click on "WiReRA". Do NOT click add point!
3. Then you will see a screen with the rapid assessment data you collected. You will see the chain link with the words "WiReRA" and "related to..." on the screen. This means you are looking at the data you entered in the form. To delete the rapid assessment

data, click on the red trashcan data on the bottom and confirm you want to delete the feature.



Remote Rapid Assessment Protocol

1 Glossary

Rapid Assessment	WiRē Rapid Wildfire Risk Assessment – the data you’re collecting
Remote	Method of collecting Rapid Assessment data using aerial imagery from Connect Explorer
Assessor	The person conducting the Rapid Assessment
Google Sheet	The “Volunteer X: WiRē Remote Rapid Assessment Tracker” spreadsheet used to track progress and give parcel assignments for each volunteer, hosted by Google Sheets
Rapid Assessment Form	The WiRē Remote Rapid Assessment Form used to record data, hosted by Google Forms
Connect Explorer	The website and program that provides the aerial imagery which we use to conduct Rapid Assessments remotely
Parcel ID	Unique number that defines the property/parcel being assessed
WiRē ID	Unique number that helps WiRē track data

2 Resources and references

- Assessor Reference Guide: descriptions of each attribute and how to assess it
- Recording of virtual Rapid Assessment training (April 26th): descriptions of each attribute and how to assess it.
- Recording of Remote Rapid Assessment Protocol: video of how to use the technology.

3 Google Sheet and Rapid Assessment Form

3.1 Google Sheet – “Volunteer X: WiRē Remote Rapid Assessment Tracker”

- a) We recommend copying your personal link and emailing the link to yourself. Always use this link, and not a different volunteer’s link in the folder.
- b) Assess parcels in the order listed on your sheet (from the top row to the bottom row).
- c) Keep an eye out for text that may pop up on the top of your screen saying “cannot sync” or “offline.” If you encounter this, check your internet connection before moving forward.
- d) Always click on the “Rapid Assessment Form Link” next to the parcel you’re going to assess. This link will take you to a Google Form that has had the assessor, WiRē ID, and Parcel ID pre-populated.
- e) How to copy text: Command+C on a Mac, Ctrl+C on a PC (or right click, copy).
- f) How to paste text: Command+V on a Mac, Ctrl+V on a PC (or right click, paste).
- g) How to “undo” if you accidentally change text: Command+Z on Mac, Ctrl+Z on a PC.
- h) After assessing a parcel, always go back to the Tracker and check the box under “check when complete” if the assessment is done.
 - In the uncommon scenario in which you are *unable to find the parcel* in Connect Explorer, check the box under “check if parcel not found”.
 - In the uncommon scenario that a parcel you have been assigned *appears to be non-residential*, check the box under “check if parcel not residential”.

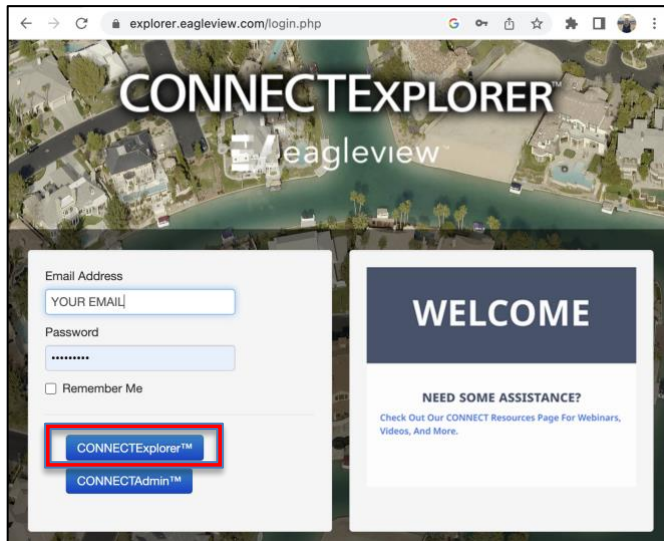
3.2 Google Form – “WiRē Remote Rapid Assessment Form”

- a) Always click on the “Rapid Assessment Form Link” in the Google Sheet next to the parcel you’re going to assess. This link will take you to a Rapid Assessment Form that has had the assessor, WiRē ID, and Parcel ID pre-populated. Therefore, it is imperative to make sure you are clicking the link for the same Parcel ID that you are assessing. It is good practice to do quick checks that you have clicked on the correct Rapid Assessment Form Link by making sure that the last three digits of the Parcel ID match between the Google Sheet and the Rapid Assessment Form.
- b) How to “undo” if you accidentally change text: Command+Z on Mac, Ctrl+Z on a PC.

4 Connect Explorer

4.1 Logging in

- Use the link provided in your email or in the second tab of the Google Sheet to open Connect Explorer in your web browser.
- Enter your email and password provided.
- Click “CONNECTExplorer™” button (see red box below).

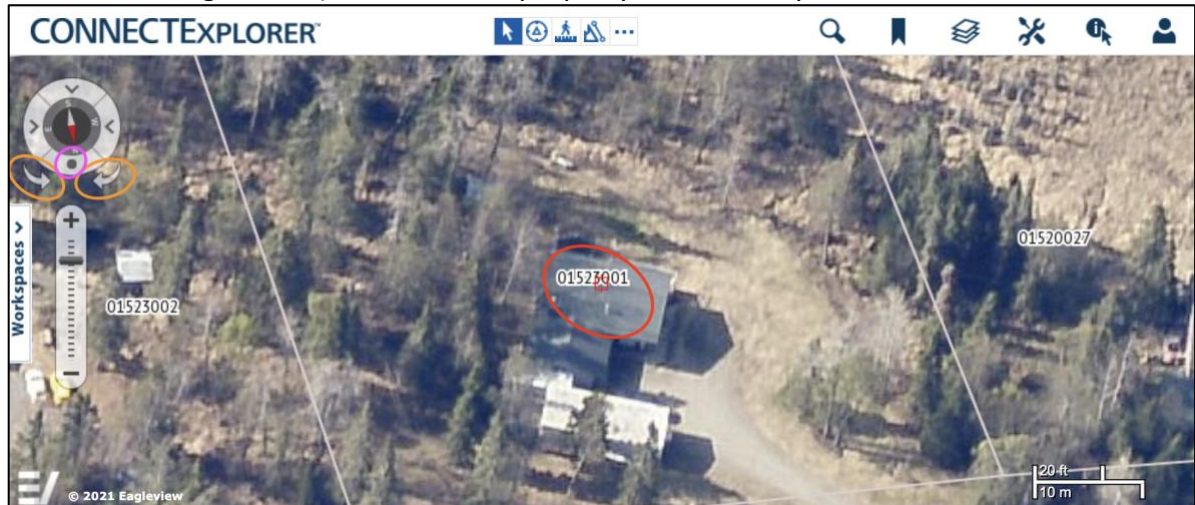


4.2 Point of View in Connect Explorer

- Use a mouse for the best performance. Using the track pad can cause unwanted navigation/zooming errors.
- To zoom in and out, you can use the zoom bar pictured below. The plus sign will zoom out and the minus sign will zoom in on an area.



- c) While making observations, look at the house from multiple points of view to get the best view of the property. To change your point of view:
- Center the small red square on the structure that you are assessing (the red square should be in the center of the screen). This is the point that the view will rotate around (circled in red in the image below).
 - Click curved arrows below the compass to change the point of view (circled in orange in the image below).
 - Click the small dot that is on the bottom part of the compass (circled in pink in the image below) to look at the property from directly above.

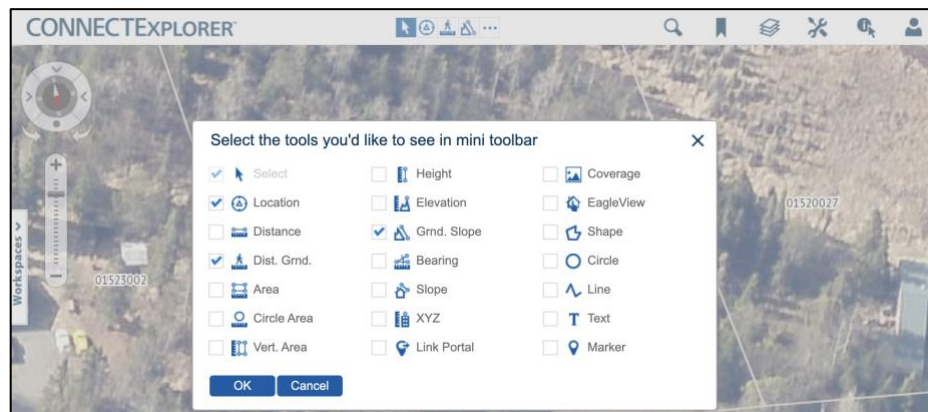


4.3 Using Tools in Connect Explorer

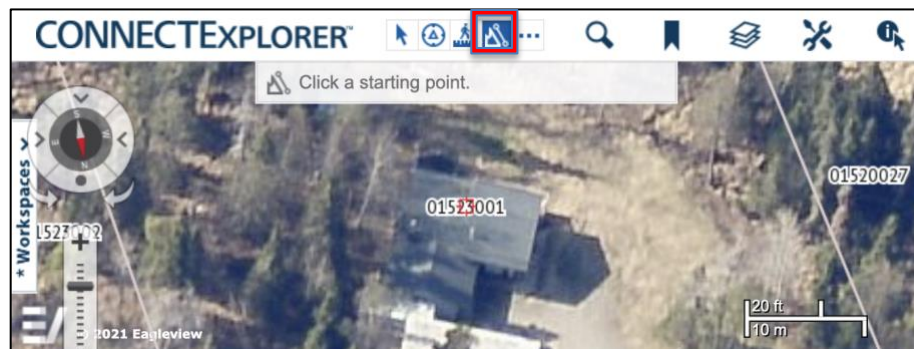


- a) You will need to set up some tools to help you with the rapid assessments.
- Click on the icon with the three dots located at the top/center of your browser.

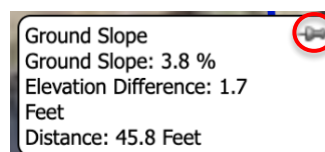
- Make sure the boxes to the left of the following tools are checked:
 - Select
 - Location
 - Dist. Ground
 - Grnd. Slope
- Uncheck all other boxes not listed above, if needed.
- Click “OK”.



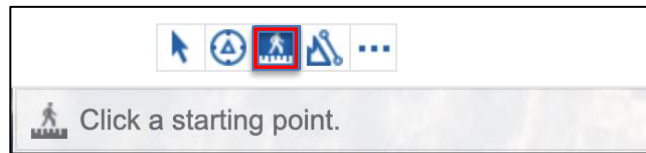
- b) Slope tool (called Grnd. Slope in toolbar above)
- This tool measures the slope of the ground.
 - Click on the slope tool (pictured below in red box).



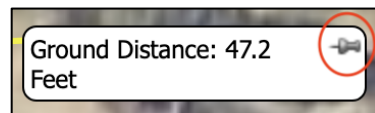
- Click on the image to where you want to start the measurement. A yellow line will appear on your screen that moves with your cursor.
- Click on the spot where you want to end the measurement.
- A box with details on the slope of the ground will appear on your screen.
- To remove a measurement, click the pushpin twice (see red circle on image below).



- c) Distance tool (called Dist. Grnd. in toolbar above)
- This tool measures the distance along the ground.
 - Click distance tool button (pictured below in red box).



- Click on the image to where you want to start the measurement. A yellow line will appear on your screen that moves with your cursor.
- **Double click** on the spot where you want to end the measurement.
- A box with details on the slope of the ground will appear on your screen
- To remove a measurement, click the pushpin twice (see red circle in image below).

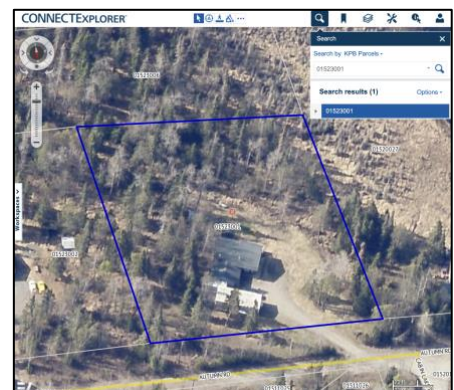


- d) To exit any tool you have opened, click the arrow icon (pictured in red box below).



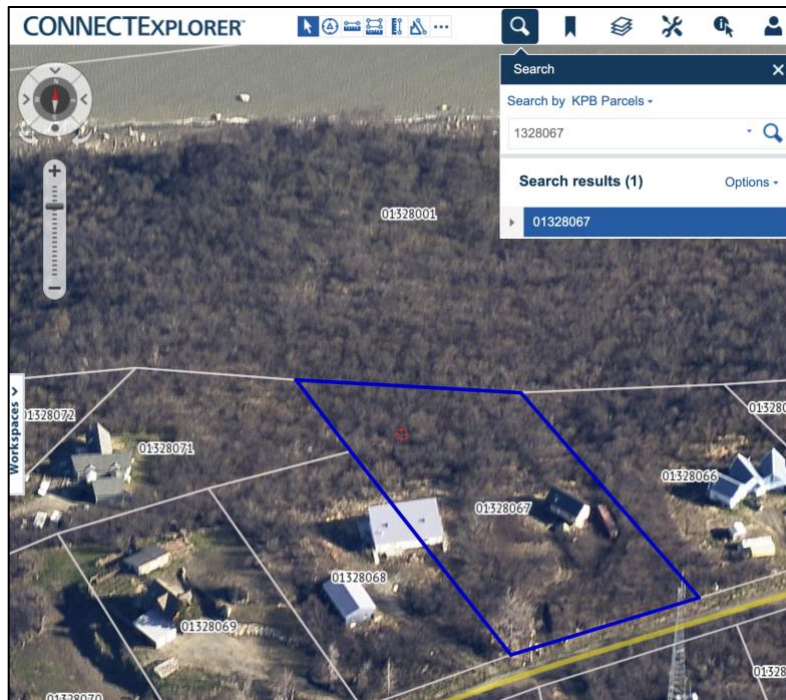
4.4 Finding a parcel

- Click magnifying glass icon from the top options bar as shown below.
- Confirm that "Search by KPB Parcels" is selected from the drop-down list:
- Paste the Parcel ID into the search bar.
- Hit enter on your keyboard or hit the magnifying glass icon to the right of the search bar.
- Your search results will come up, with a boundary drawn in blue around the parcel you entered.



- f) Sometimes, the property boundary shown may not align perfectly with what is likely the real property boundary. Use your best judgement, and don't assume it is always exactly accurate (e.g., a home may appear to sit on the property line but actually be within the property boundary and should be assessed as such).

4.5 Dealing with two residential structures on one parcel

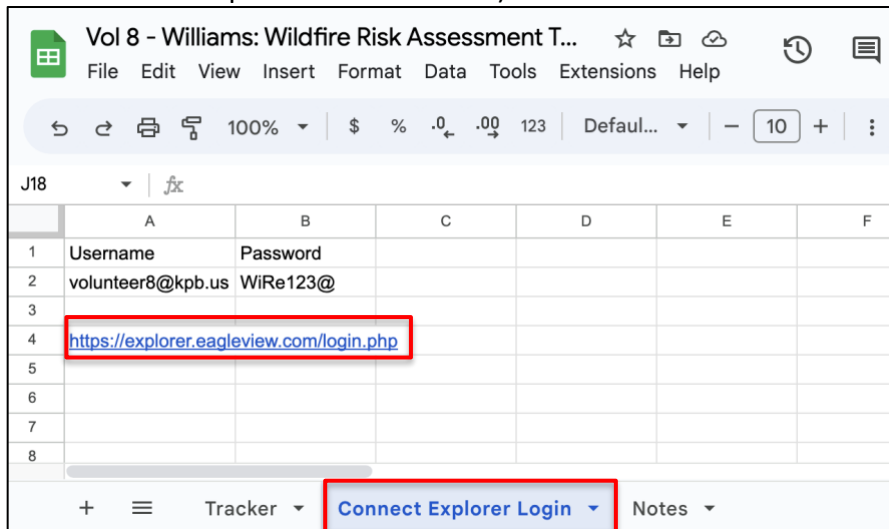


While uncommon, there are some situations in which the locations of structures and parcel boundaries require additional consideration to determine which structure should be assessed. See the example above where there is a structure that sits on top of the border between two parcels. If this is the case, work through the decision tree below to make consistent decisions about which structure to assess:

- Is there a single driveway leading to a residential structure on the parcel?
 - Yes: Assume the structure that the driveway leads to is the primary residence and assess it.
 - No: Assess the structure that looks to be the primary residence when comparing the two possible structures and note which you assessed in the Rapid Assessment Form (instructions on how to note this in Section 6.1).

5 Putting it all together

- 1) Open your Google Sheet called “Volunteer X: WiRē Remote Rapid Assessment Tracker”.
- 2) Go to the second tab of the Google Sheet and click the link for Connect Explorer (we recommend opening the link in a new tab or browser by right clicking on the link and “open in new tab” or “open in new window”).



- 3) Log in to Connect Explorer.
- 4) Click the link for the “Rapid Assessment Form Link” for the parcel you’re going to assess. This will open the Google Form.
- 5) Confirm you opened the correct “Rapid Assessment Form Link” by checking that the last three digits of the Parcel ID are matching between the Rapid Assessment Form and Google Sheet.
- 6) Confirm the Assessor name matches your volunteer number.
- 7) If Assessor and Parcel ID are correct, click “Next” at the bottom of the first page of the Rapid Assessment Form.
- 8) Navigate back to your Tracker and copy the Parcel ID for the parcel you are going to assess (Command+C on a Mac, Ctrl+C on a PC, or right click and “copy”).
- 9) Navigate to Connect Explorer and paste the Parcel ID into the search bar (Command+V on a Mac, Ctrl+V on a PC, or right click and “paste”). Confirm that it is set to search KPB Parcels as detailed under Section 4.4b.
- 10) Hit the Enter key on your keyboard or hit the magnifying glass icon to the right of the search bar.
- 11) Your search results will come up, with a boundary drawn around the parcel you searched for. Note that the parcel IDs and boundaries will only be shown from a certain distance – as you zoom in, these will no longer be shown so make sure that you observe this boundary carefully before zooming in further to ensure that you’re looking at the primary residence for the correct parcel.

- 12) Respond to each question in the Rapid Assessment Form, following the guidance under Section 6 (“answer-specific tool instructions”).
 - a) If the image is too blurry to see a given attribute, select “unknown”. This should be selected if you do not feel sure about the answer to a question and is normal and expected! Feel free to consult with other volunteers and KPB/WiRē team as needed.
- 13) Once you have answered all questions in the Rapid Assessment Form, click “Submit.”
- 14) Return to your Tracker and check the applicable box in Column E, F, or G.

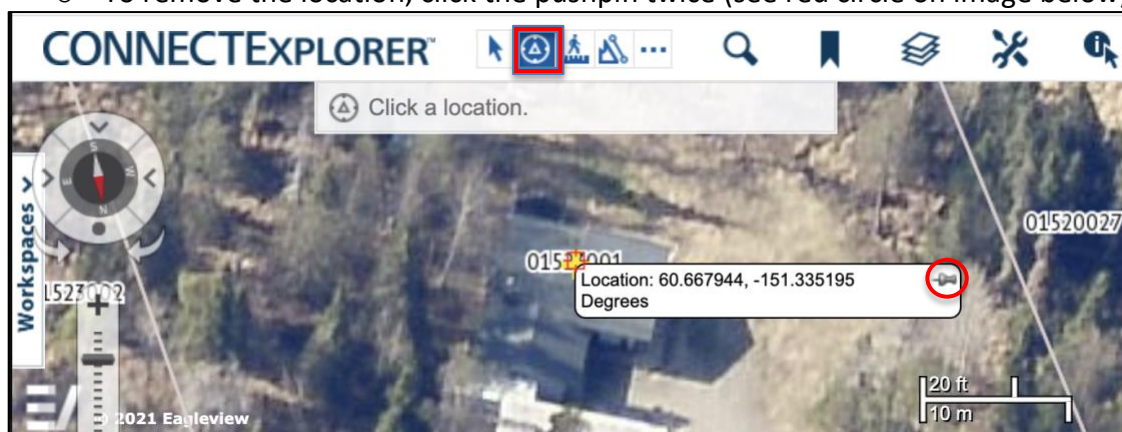
6 Answer-specific tool instructions

Below, we describe instructions for using Connect Explorer, the Google Sheet, and the Rapid Assessment Form to answer each question on the Rapid Assessment Form. To see detailed descriptions of each attribute, and how to assess which category the observation falls into, please reference the Assessor Reference Guide.

When beginning a new rapid assessment, start with a quick look at the whole property from multiple points of view. Do this following the instructions in Section 4.2.

6.1 – Q1 (answer if applicable). IF the primary residential structure is not obvious, enter the coordinates of the structure below. See 6.2 in protocol for detailed instructions.

- If there is a clear choice for a primary residence, leave blank and move on to Q2.
- If there is not one clear choice for a primary residence, use the decision tree in Section 4.5 to identify the primary residence and follow the instructions below.
 - Click the location button (see red box below) to obtain the coordinates for the primary structure you will assess.
 - Click on the center of the structure you are assessing. Type the coordinates (in this case: 60.779548, -151.133738) as your response to this question.
 - To remove the location, click the pushpin twice (see red circle on image below).

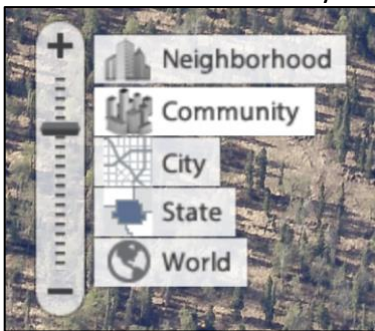


6.2 – Q2 What is the primary use of this structure?

- Select applicable choice from the dropdown menu.
- If you select either of the “not residential” options, you do not complete the Rapid Assessment Form.
- Open your Google Sheet and check the associated check box under “Check if parcel not residential”.

6.3 – Q3 If the road to access the home was blocked due to a wildfire, is there another road to get out of the community?

- Zoom to the “Community” scale to see possible ingress/egress routes.



- Select applicable choice from the dropdown menu.

6.4 – Q4 What is the most vulnerable roofing material?

- Select applicable choice from the dropdown menu.
- Considerations:
 - A standard roof shingle is asphalt.
 - The key question here is: is there any wood shake or is there no wood shake?

6.5 – Q5 What is the most vulnerable exterior siding material?

- Select applicable choice from the dropdown menu.

6.6 – Q6 Does the home have a combustible balcony, deck, porch, or fence attached to the structure?

- Select applicable choice from the dropdown menu.

6.7 – Q7 What is the closest distance to a neighboring home?

- Zoom out far enough to see closest adjacent home.

- Rotate your view using the arrows under the compass (circled in orange in the image below) so you can see side of the assessed structure that is closest to the adjacent home, as shown in the image below.



Original view example



Rotated view example

- Click distance tool button.



- Click the side of the structure that you are assessing, on the side that is closest to the adjacent home (as shown below).
- Double-click nearest side of the closest adjacent home.



- Select appropriate choice from the dropdown menu using measurement.

6.8 – Q8 What is the closest distance from the home to overgrown, dense, unmaintained, or highly flammable vegetation?

- Identify closest overgrown, dense, unmaintained, or highly flammable vegetation as defined in the Assessor Reference Guide.
- Rotate your view so that you can see side of the assessed structure that is closest to vegetation (see the example in 6.7).
- Click distance tool button. The only scenario in which you do not need to use the distance tool for this question is if this vegetation is touching the structure directly.
- Click the edge of the home that is closest to the applicable vegetation.
- Double click where the vegetation starts.
- Select appropriate choice from the dropdown menu using measurement.

6.9 – Q9 What is the closest distance from the home to combustible items other than vegetation such as an outbuilding/shed, detached garage, lumber, firewood, propane tank, hay bales, flammable outdoor furniture, or other materials that could easily ignite?

- Identify other combustible items.
- Rotate your view so that you can see side of the assessed structure that is closest to the combustible item(s) (see the example in 6.7).
- Click distance tool button. The only scenario in which you do not need to use the distance tool for this question is if an “other combustible” is touching the structure directly.
- Click the edge of the home that is closest to the other combustible.
- Double click where the other combustible is located.
- Select appropriate choice from the dropdown menu using measurement.

6.10– Q10 What is the closest distance from the home to a ridge, steep drainage, or narrow canyon?

- The key question here is: is there a ridge, steep drainage, or narrow canyon within 150’ of the home?
- If there is a ridge, steep drainage, or narrow canyon within 150 feet of the home...
 - Click distance tool button.
 - Click the edge of the home that is closest to the dangerous topography.
 - Double click where the topographic feature is located.
 - Select appropriate choice from the dropdown menu using measurement.

6.11– Q11 Which of the following best describes the dominant vegetation 100'-150' from the home? This may be outside the property boundary.

- Use the distance tool to orient yourself to ensure you are looking at the area between 100 feet and 150 feet from the home.
- As defined in the Assessor Reference Guide, select the most appropriate choice from the dropdown menu.

6.12– Q12 Does the driveway meet the following clearance standards?
At least 13.5' high and at least 20' wide.

- Use the distance tool to measure the width of the driveway where it appears to be most narrow.
- Next, click out of the distance tool by clicking the arrow icon.
- Observe whether there are any overhead obstructions above the driveway that cause it to not meet height clearance standards as defined in the Assessor Reference Guide. Clicking through multiple points of view will likely be necessary.
- Select the appropriate choice from the dropdown menu based on your observations of height and width clearance.

6.13– Q13 What is the slope of the area within 150' of the home?

- Click on the slope distance tool.
- Change your point of view to look at the property from directly above by clicking the dot on the bottom of the compass (described in 4.1c).



- Use the slope tool (click once on start point and click once on end point) to measure slope along:
 - A 300-foot (+/- 30 feet) line from north to south with the structure at the center. Click the pushpin once to keep the measurement.

Ground Slope
Ground Slope: 4.1 %
Elevation Difference: 13.5
Feet
Distance: 327.7 Feet

- A 300-foot (+/- 30 feet) line east to west with the structure at the center.



- You will choose a response category based on the value provided by the tool that is the highest absolute value (ex. the absolute value for a slope of “-6%” would be “6%”).
- Select the appropriate choice from the dropdown menu. For example, if your two slope measurements were -21% and 3%, you would select the “Moderate: 20% - 45%” because the slope value with the highest absolute value is 21%.

PAUSE: You will now use the slope tool for both Q14 and Q15

- With the slope tool still on, click where the driveway meets the road to start the measurement and click where the driveway meets the structure to end the measurement (may not exactly follow the driveway, as it will draw a straight line).
- This will provide both a distance measurement and a slope measurement for the driveway. Use these numbers to answer the next two questions. Note that the slope will be positive or negative depending on the start/end point. Use the absolute value (that is, you will report both “-6%” and “6%” as 6% slope when answering the question).

Ground Slope
Ground Slope: 6 %
Elevation Difference: 21.5
Feet
Distance: 357.8 Feet

6.14– Q14 What best describes the driveway? Consider the turnaround in the context of a classic large (Type 1) fire engine.

- Use distance measurement provided by the slope tool.

Ground Slope
Ground Slope: 6 %
Elevation Difference: 21.5 Feet
Distance: 357.8 Feet

- Select appropriate choice from the dropdown menu.

6.15– Q15 What is the slope of the driveway?

- If the driveway looks like it mostly maintains the same steepness across the entire length:

- Use the slope measurement you already calculated above to inform your answer.

Ground Slope
Ground Slope: 6 %
Elevation Difference: 21.5 Feet
Distance: 357.8 Feet

- Select appropriate choice from the dropdown menu.
- In the uncommon scenario in which the driveway appears to have highly variable steepness across the length of the driveway (that is, it looks like it gets a lot steeper in some sections than others):
 - Use the slope tool to calculate the length and slope of the section that looks the steepest.
 - If the distance for the steepest section is 5' or longer, this is the slope measurement that you will use to inform your answer. If the steepest section is less than 5' long, use the slope measurement you calculated for the whole driveway.
 - Select appropriate choice from the dropdown menu.



Assessing Wildfire Risk on the Kenai Peninsula

Who we are:

- Kenai Peninsula Borough Office of Emergency Management
- Cooper Landing Emergency Services
- Central Emergency Services – Funny River
- Nikiski Fire Service Area
- The Wildfire Research Center

You're seeing this letter because you may have met someone conducting a rapid wildfire risk assessment for your property. See the frequently asked questions below for more information about the information we're collecting and how it will be used. The assessments are conducted from the road and will take around 3 – 5 minutes.

We will also be mailing you a survey that asks you to rate your own property using the same questions as our assessment, as well as questions about your perceptions of wildfire. The purpose of this effort is to assess residential property-level wildfire risk so that we can better support wildfire preparedness in our communities. To do this, we are partnering with several local volunteers and the Wildfire Research (WiRē) Center, which is a non-profit that works with wildfire practitioners across the western U.S.

Frequently Asked Questions

How will the wildfire risk assessments be used?

The data from this effort will be used to help the emergency responders know how they can best support properties in being ready for wildfire as desired by the property owner. This allows your local fire department to utilize resources most effectively. For example, if we see that most homeowners have poor defensible space around their homes, your local mitigation programming can work on ways to better support homeowners in improving their defensible space. **These data will not be used to force anyone to take any action.**

Who will be able to see the wildfire risk assessment for my property?

This data will not be publicly available at the property level (e.g., nothing that states "1234 Example Rd. has a combustible roof" would be public). That is, only summarized information will be reported publicly (e.g., 10% of houses in the study area have flammable roofs). You can request to see the wildfire risk assessment for your property by contacting the people listed under contact information below.

What information is being collected?

This rapid assessment will collect the following information:

- Roof materials (combustible or non-combustible?)
- Siding materials (combustible or non-combustible?)
- Combustible attachments (present or not present?)
- Distance to adjacent homes (e.g., more than 30' away from another home or closer?)
- Distance to other combustibles (how far away are other combustibles like wood piles from the house?)
- Distance to overgrown vegetation (how far away are highly flammable plants from the house?)
- Distance to dangerous topography (how far from the house is there terrain that increases fire behavior?)
- Slope (how steep is the slope that the house sits on?)
- Adjacent fuels (are the fuels next to the home very dense and connected, or spread out?)
- Address posting (does the address sign meet local standards for visibility by firefighters during an emergency?)
- Ingress/egress (is there more than one way in/out?)
- Driveway length (can a fire truck access this property during a fire as safely as possible?)
- Driveway clearance (can a fire truck access this property during a fire as safely as possible?)

Will the wildfire risk assessments be used to make me take a particular action?

No (see section above: "How will the wildfire risk assessments be used?"). For example, this project will not identify or require trees near homes to be cut down. Not only will data not be used to force any action, but the information we are collecting will not be this detailed. It will only speak to presence/absence of certain risk factors so that we can make our programming better support mitigation efforts on private land.

Contact Information by Community

Community	Office of Emergency Management Representative	Email	Phone number
Cooper Landing	Tim Weekley	tweekley@kpb.us	(907) 262-2095
Funny River	Paul McBride	pmcbride@kpb.us	(907) 262-2097
Nikiski	Brenda Ahlberg	bahlberg@kpb.us	(907) 262-2098

Appendix C: Wildfire Research (WiRē) Rapid Wildfire Risk Assessment Summary

Begins on next page.

The Funny River Rapid Assessment Summary

Risk assessment data were collected in 2023 as a census of all residential properties with a structure in the study area¹. The rapid wildfire risk assessments were conducted for 873 parcels using the standard WiRē Rapid Wildfire Risk Assessment (WiRē RA). The WiRē RA is comprised of a set of 13 attributes that includes building materials, vegetation near the home, background fuels and topography, and access to the property. Each attribute of the WiRē RA is evaluated relative to other private land parcels within the study area. As a result, the WiRē RA serves as an indicator of the relative risk of private land parcels within the study area, rather than an absolute measure of risk.

The 13 attributes are weighted and summed to produce an overall risk score for each parcel. The weights reflect the attributes' relative contribution (ranging from 1% - 30% per attribute) to overall wildfire risk. Following our process for a standard WiRē RA, we apply a standard approach for placing the overall risk scores into five risk categories: low (20-250), moderate (251-325), high (326-455), very high (456-540), extreme (541-1000). This process can be iterative over time but has been validated across previous WiRē projects. Additionally, data were collected on three non-scored attributes: gate, driveway steepness, and community egress.

The WiRē Approach typically consists of WiRē RAs that are conducted in-person, from the road. However, due to some unique project circumstances, including accessibility, safety concerns, lack of capacity, and availability of high-resolution imagery²; rapid assessment data were collected using a mix of high-resolution imagery and in-person roadside assessments. Specifically, all WiRē attributes that were available in the high-resolution imagery were collected and scored. Address posting was not observable in the remote imagery and was collected in person. The unscored variables were also collected using a mix of remote imagery

¹ Kenai Peninsula Borough Assessor data from February 2023 was used as the underlying dataset to collect data.

² EagleView imagery published through Connect Explorer. 3-inch resolution oblique imagery; May-June 2021

**This research was supported, in part, by the U.S. Department of Agriculture, Washington Office Fire and Aviation Management; and the Bureau of Land Management, Wildland Fire Community Assistance Program. This research received in-kind support from the USDA Forest Service, Rocky Mountain Research Station; the Bureau of Land Management; the University of Colorado, Institute for Behavioral Sciences; the U.S. Geological Survey; the Kenai Peninsula Borough Office of Emergency Management; and Central Emergency Services – Funny River. The household survey administration was paid for by the National Science Foundation funded project: Socio-ecological considerations for sustainAble Fuel treatments to Reduce wildfire Risk (SAFRR).*

** All data received and processed as of 12/10/23*

**Document prepared 3/27/2024*

** Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.*

(driveway steepness) and in-person (presence of a gate). Community egress is the other unscored attribute that was determined based on partner input.

In instances when a risk attribute was not observable, the data collector selected “unknown/not observed.” It is WiRē’s protocol to assign the “unknown/not observed” and true missing data (i.e., the mitigation specialist did not select a response) the highest risk score for the attribute in question. This is consistent with other parcel risk and structure protection assessments. If a particular attribute is “unknown/not observed” or missing, practitioners and firefighters assume that a hazard exists. At best, the correct attribute response is chosen; at worst, the assessment invites a conversation with the parcel owner to delve deeper into the mitigation needs of the parcel in question and an update to their parcel risk assessment.

This protocol allows us to report results for all residential parcels in the study area rather than only those for which all attributes could be observed. For each risk attribute in the tables below, we report the number of “unknown/not observed” and missing as a footnote.

The first table presents the results of the overall wildfire risk rating, which is the sum of the attribute scores (Section 1.1). The next 13 tables present a summary of the 13 risk attributes in the WiRē RA (Section 1.2 through 1.5). Section 1.6 presents the results of the three non-scored attributes. The percentages might not add to 100% due to rounding.

1.1 Overall risk rating

Overall risk rating: Based on the sum of the 13 attribute scores.				
Response categories	Score range	Number (N=873)	% of all rapid assessments in study area	
Low	20-250	56	6%	
Moderate	251-325	168	19%	
High	326-455	575	66%	
Very high	456-540	28	3%	
Extreme	541-1000	46	5%	

1.2 Home ignition potential

Risk attribute: Roof (collected using aerial imagery; 30% of total rapid assessment score)

What is the most vulnerable roofing material?

Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
Tile, metal, or asphalt shingles	0	826	95%	
Wood (shake shingles)	300	47	5%	

*Out of all rapid assessments in the study area, 16 were missing/unobserved (2%) and included in the highest risk category

Risk attribute: Siding (collected using aerial imagery; 7% of total rapid assessment score)

What is the most vulnerable exterior siding material?

Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
Stucco, cement, brick, stone, or other noncombustible siding	0	35	4%	
Log or heavy timbers	35	40	5%	
Wood or vinyl siding	70	798	91%	

*Out of all rapid assessments in the study area, 63 were missing/unobserved (7%) and included in the highest risk category

Risk attribute: Combustible attachments (collected using aerial imagery; 10% of total rapid assessment score) Does the home have a combustible balcony, deck, or fence attached to the structure?

Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
No combustible attachments	0	120	14%	
Combustible attachments present	100	753	86%	

*Out of all rapid assessments in the study area, 29 were missing/unobserved (3%) and included in the highest risk category

Risk attribute: Distance to adjacent homes (collected using aerial imagery; 20% of total rapid assessment score) What is the closest distance to a neighboring home?				
Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
More than 100'	0	625	72%	
30' - 100'	50	238	27%	
10' - 29' away	100	6	1%	
Less than 10'	200	4	0%	
*Out of all rapid assessments in the study area, 2 were missing/unobserved (<1%) and included in the highest risk category.				

1.3 Defensible space

Risk attribute: Distance to overgrown vegetation (0 – 100 ft) (collected using aerial imagery; 10% of total rapid assessment score) What is the closest distance from the home to overgrown, dense, or unmaintained vegetation?				
Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
More than 100'	0	13	1%	
30' - 100'	50	139	16%	
5' - 29'	75	563	64%	
Less than 5'	100	158	18%	
*Out of all rapid assessments in the study area, 0 were missing/unobserved.				

Risk attribute: Distance to other combustibles (non-vegetation) (collected using aerial imagery; 8% of total rapid assessment score) What is the closest distance from the home to combustible items other than vegetation such as lumber, firewood, a propane tank, hay bales, or other materials that could easily ignite?				
Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
More than 30' or no combustible items	0	83	10%	
5' - 30'	40	297	34%	
Less than 5'	80	493	56%	
*Out of all rapid assessments in the study area, 34 were missing/unobserved (4%) and included in the highest risk category				

1.4 Background conditions

Risk attribute: Distance to dangerous topography (collected using aerial imagery; 5% of total rapid assessment score) What is the closest distance from the home to a ridge, steep drainage, or narrow canyon?				
Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
More than 150'	0	840	96%	
50' - 150'	25	4	0%	
Less than 50'	50	29	3%	
*Out of all rapid assessments in the study area, 2 were missing/unobserved (<1%) and included in the highest risk category				

Risk attribute: Slope (collected using aerial imagery; 2% of total rapid assessment score) The slope of a property refers to the steepness of the land. A large property may have steep, moderate, and gentle slopes. How would you describe the slope of the property within 150' of the home?				
Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
Gentle - Less than 20%	0	853	98%	
Moderate - Between 20% and 45%	10	18	2%	
Steep - Greater than 45%	20	2	0%	
*Out of all rapid assessments in the study area, 2 were missing/unobserved (<1%) and included in the highest risk category				

Risk attribute: Adjacent fuels (100 - 150 ft) (collected using aerial imagery; 4% of total rapid assessment score) Which of the following best describes the dominant vegetation 100' to 150' from the home? This may be outside the property boundary.

Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
Light	10	22	3%	
Medium	20	183	21%	
Dense	40	668	77%	

*Out of all rapid assessments in the study area, 1 was missing/unobserved (<1%) and included in the highest risk category

1.5 Access

Risk attribute: Address posting (collected in-field; 1% of total rapid assessment score)
Does the address sign meet all local standards (Posted location, reflective, size, contrasting, non-combustible materials)

Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
Fully meets standard	0	572	66%	
Address sign is visible, but does not meet all standards	5	50	6%	
Not posted/visible from the primary road	10	251	29%	

*Out of all rapid assessments in the study area, 105 were missing/unobserved (12%) and included in the highest risk category

Risk attribute: Ingress/egress (collected using aerial imagery; 1% of total rapid assessment score)
If the road to access the home was blocked due to a wildfire, is there another road to get out of the community?

Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
Two or more roads in/out	0	499	57%	
One road in/out	10	374	43%	

*Out of all rapid assessments in the study area, 12 were missing/unobserved (1%) and included in the highest risk category

Risk attribute: Driveway clearance (collected using aerial imagery; 1% of total rapid assessment score) Does the driveway meet the horizontal and vertical clearance standards: height at least 20' and width at least 13.5'?				
Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
Meets all driveway standards	0	65	7%	
Meets one, but not both, standards	5	731	84%	
Does not meet either standard	10	77	9%	
*Out of all rapid assessments in the study area, 4 were missing/unobserved (<1%) and included in the highest risk category.				

Risk attribute: Driveway length (collected using aerial imagery; 1% of total rapid assessment score) What best describes the driveway?				
Response categories	Score	Number (N=873)	% of all rapid assessments in study area	
Less than 150' long	0	367	42%	
150' or more with "adequate" turnaround	5	269	31%	
150' or more without "adequate" turnaround	10	237	27%	
*Out of all rapid assessments in the study area, 0 were missing/unobserved.				

1.6 Unsourced attributes

Attribute: Gate (collected in-field; not scored) Does the property have a gate?				
Response categories	Score	Number (N=873)	% of study area	
No gate present	-	492	56%	
Gate present	-	381	44%	
*Out of all records in the study area, 110 were missing/unobserved (13%) and included in the highest risk category.				

Attribute: Driveway steepness (collected using aerial imagery; not scored)

What best describes the driveway?

Response categories	Score	Number (N=873)	% of study area	
Less than 10%	-	823	94%	
10%-20%	-	35	4%	
Greater than 20%	-	15	2%	

*Out of all records in the study area, 10 were missing/unobserved (1%) and included in the highest risk category.

Attribute: Community egress (determined based on parnter input; not scored)

If the road to access the home was blocked due to a wildfire, is there another road to get out of the community?

Response categories	Score	Number (N=873)	% of study area	
Two or more roads in/out	-	0	0%	
One road in/out	-	873	100%	

Appendix D: Comparison of Wildfire Research (WiRē) Rapid Wildfire Risk Assessment and Household Survey

Begins on next page.

Funny River Rapid Assessment Compared to Household Survey Responses

Trained assessors from The Wildfire Research Center (WiRē) conducted parcel-level rapid wildfire risk assessments in 2023 using a mix of high-resolution imagery and in-person roadside assessments and administered a household survey in 2024. The rapid assessment provides the professional's risk rating for each parcel, and the household survey provides, among other things, respondent's self-assessed risk for their own parcel. Pairing these data is the heart of the WiRē Approach because it allows us to analyze the risk gap between how professionals rate wildfire risk and how survey respondents (i.e., homeowners) perceive their risk.

Overall, there are 285 properties for which we have a rapid assessment paired with household survey. There are an additional 588 properties with only a rapid assessment, for a total of 873 rapid assessments in the study area. Within this document, we present the following:

- Section 1 provides graphs that compare the professional risk ratings from the rapid assessment to the self-assessed risk ratings from the paired household survey.
- Section 2 provides tables that provide a three-way comparison of risk ratings from all rapid assessments in the study area, the subset of rapid assessments for which there is a paired household survey, and the household survey self-assessment.

Section 1 and Section 2 are organized by overall risk rating, followed by the attribute-level risk ratings. The attribute-level risk ratings are grouped into the following categories: home ignition potential, defensible space, background conditions, and access.

**This project was funded, in part, by the U.S. Department of Agriculture, Washington Office Fire and Aviation Management; and the Bureau of Land Management, Wildland Fire Community Assistance Program. This research received in-kind support from the USDA Forest Service, Rocky Mountain Research Station; the Bureau of Land Management; the University of Colorado, Institute for Behavioral Sciences; the U.S. Geological Survey; the Kenai Peninsula Borough Office of Emergency Management; and the Central Emergency Services – Funny River. The household survey administration was paid for by the National Science Foundation funded project: Socio-ecological considerations for sustainAble Fuel treatments to Reduce wildfire Risk (SAFRR).*

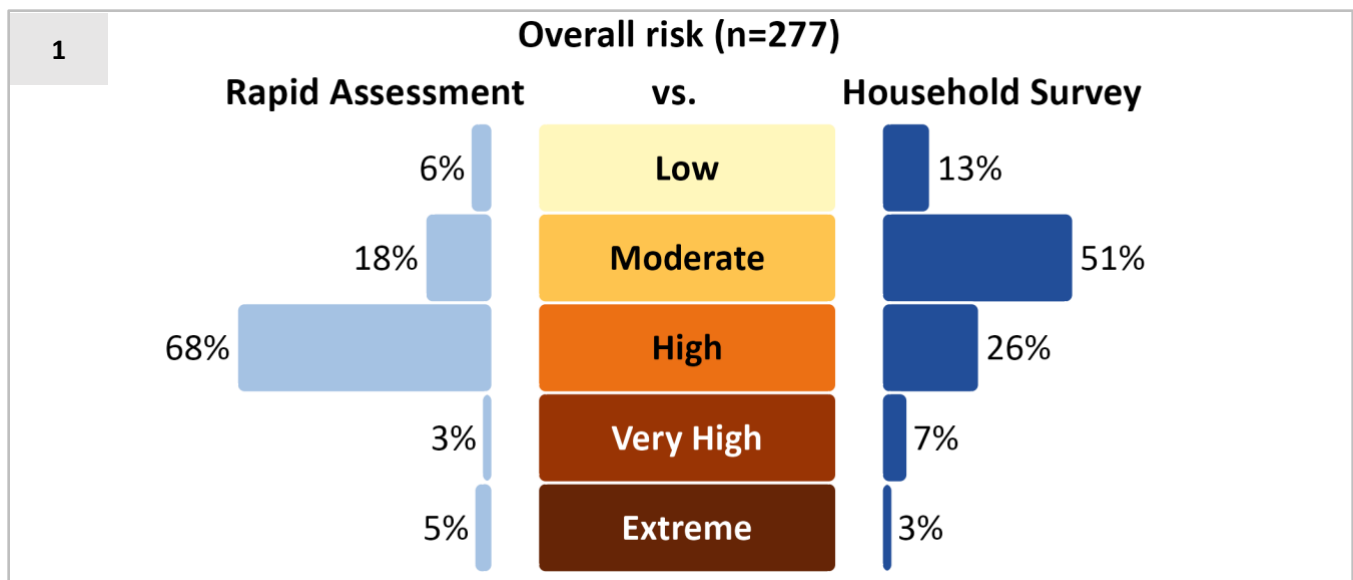
**All data received and processed as of June 18, 2024*

**Document prepared July 24, 2024*

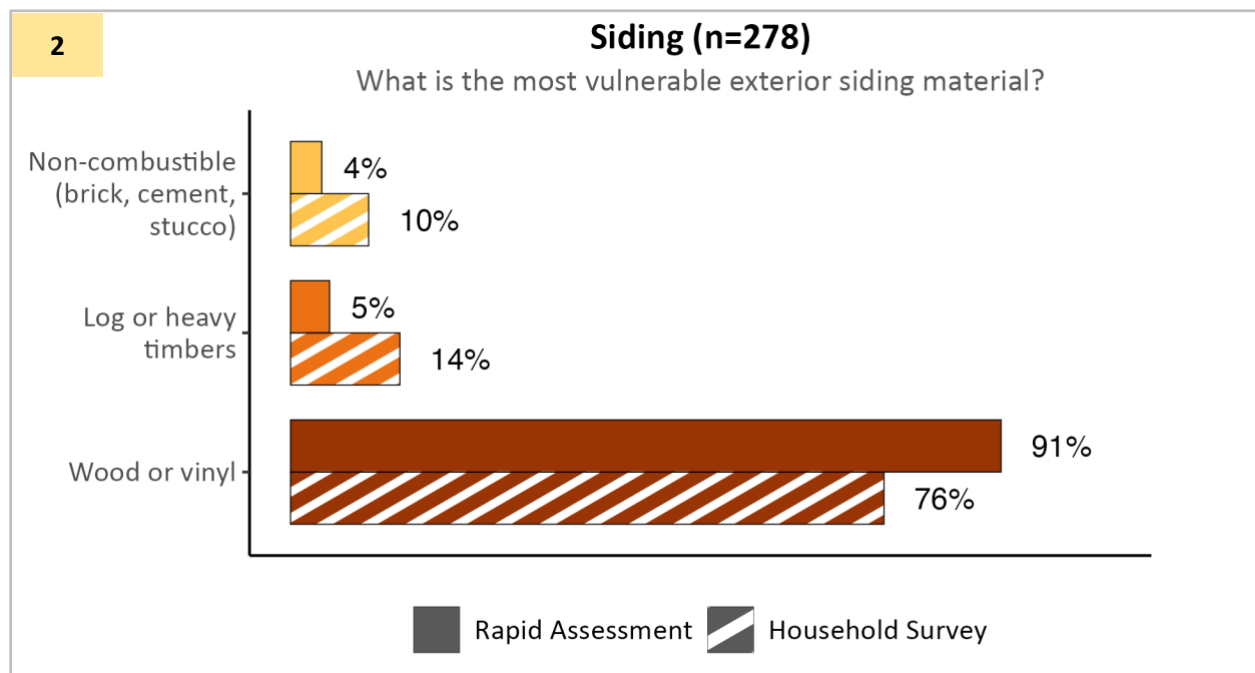
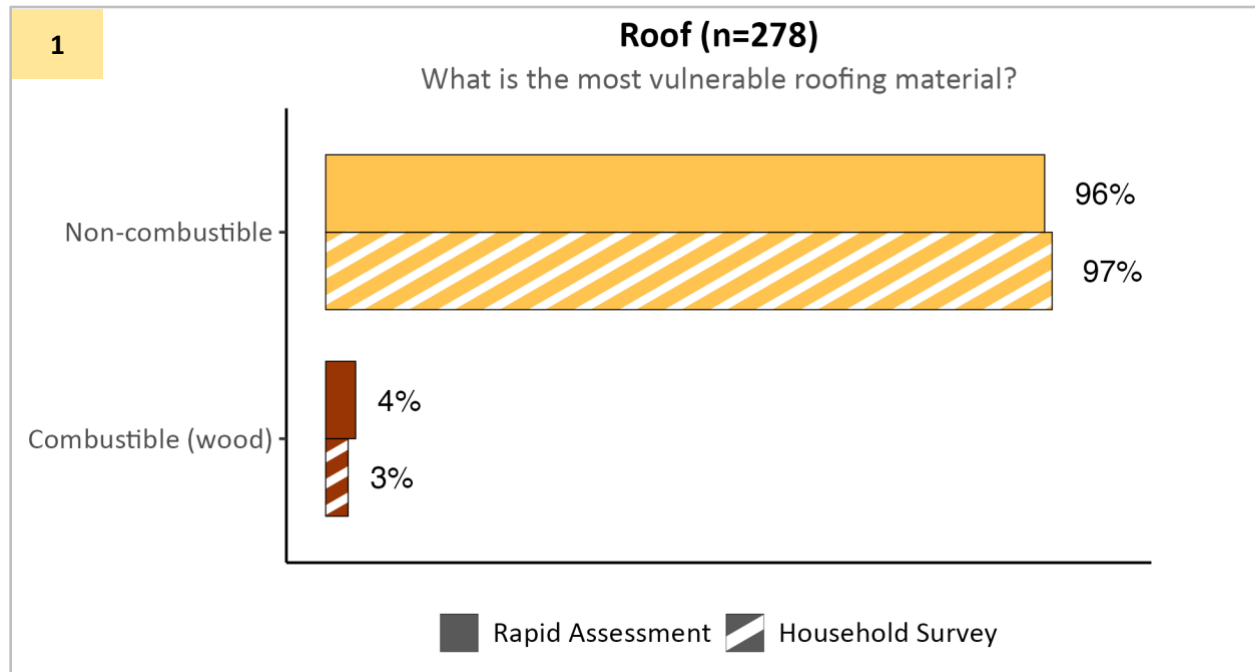
1. Comparison of paired WiRē Rapid Assessment vs. Household Survey

In this section, we compare professional risk ratings and household survey respondents' self-assessments for properties' overall risk rating and the 13 risk attributes included in the rapid assessment. These comparisons are presented as graphs. For the overall risk rating, the professional risk ratings are on the left and the household survey respondent' self-assessment is on the right. For the remaining risk attributes, the first bar shows the professional risk rating, and the second bar presents the household survey respondents' self-assessment. For each individual risk attribute, our comparisons only include the data from properties for which we have both rapid assessment and household survey data for that particular attribute, and thus the number of records (signified by "n=") varies by attribute and is reported for each.

1.1 Overall risk rating



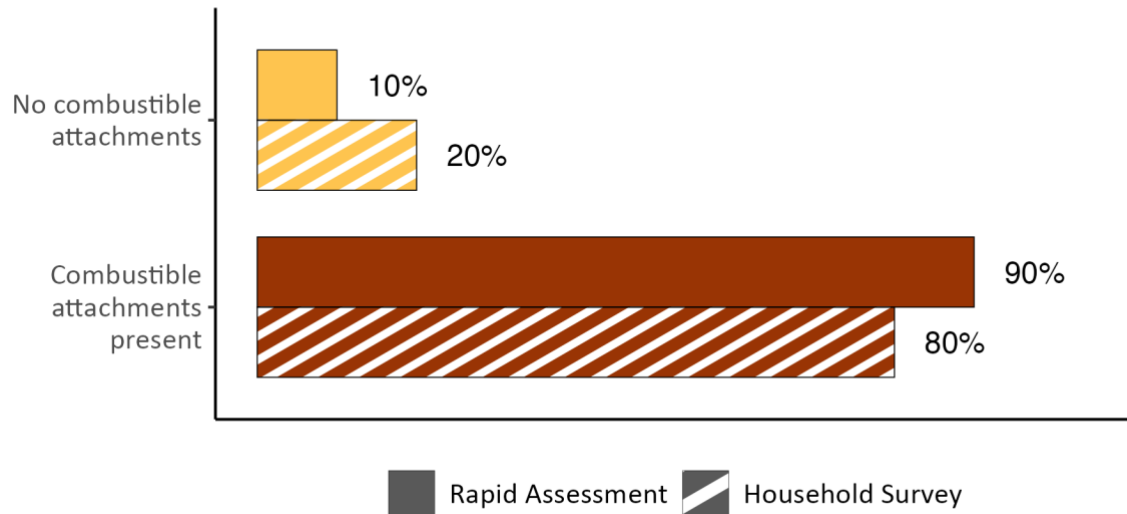
1.2 Home ignition potential



3

Combustible attachments (n=279)

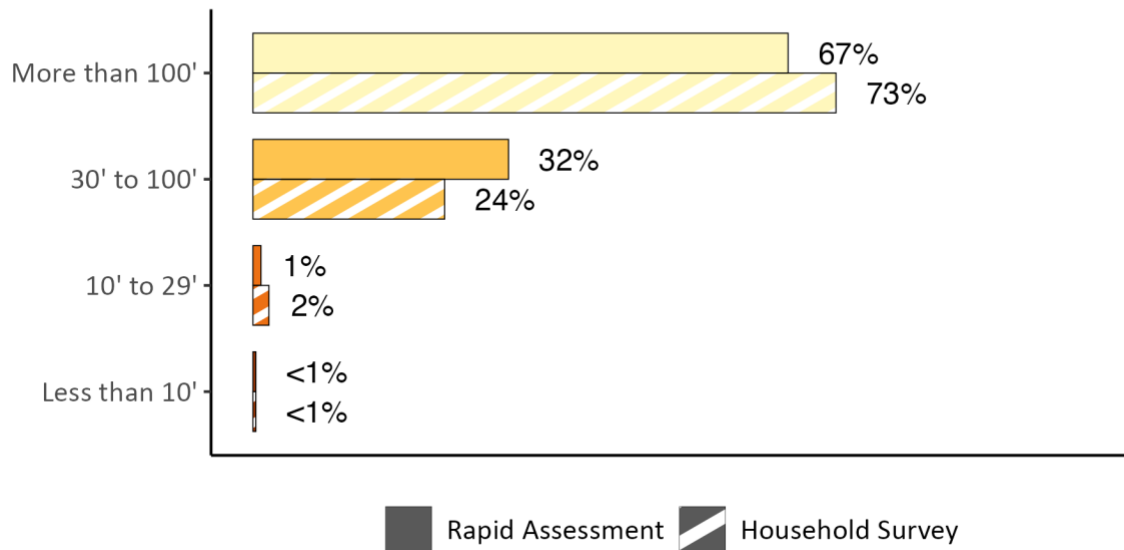
Does the home have a combustible balcony, deck, or fence attached to the structure?



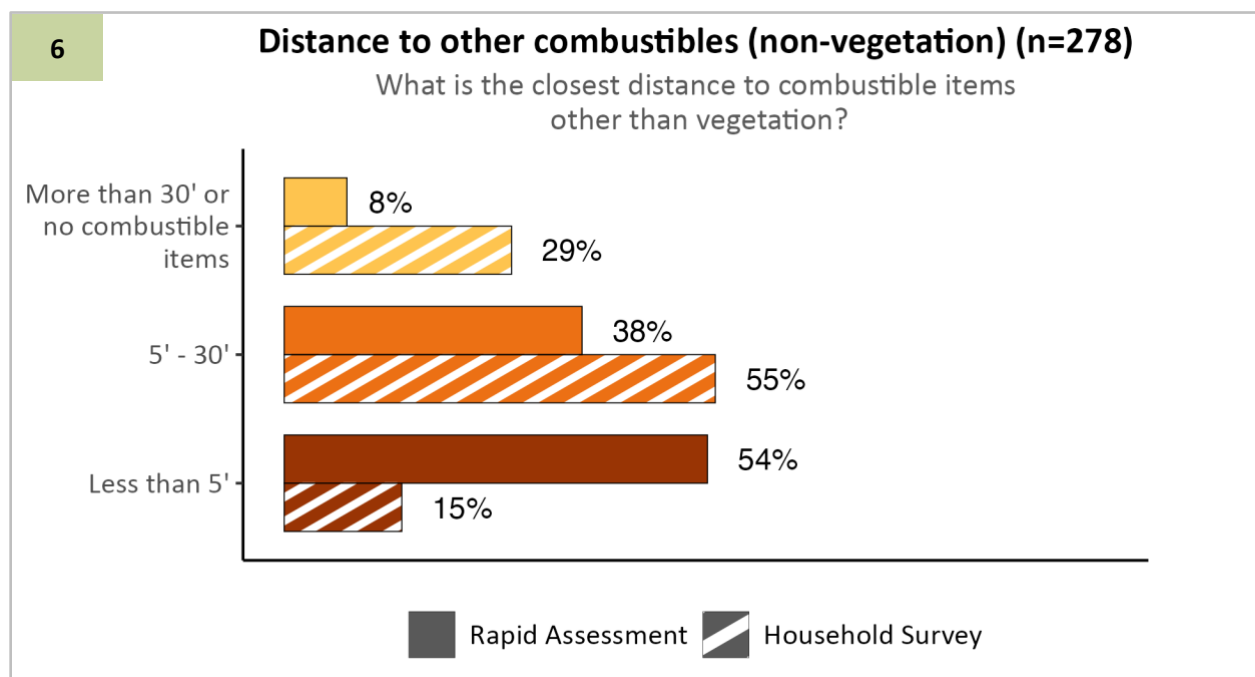
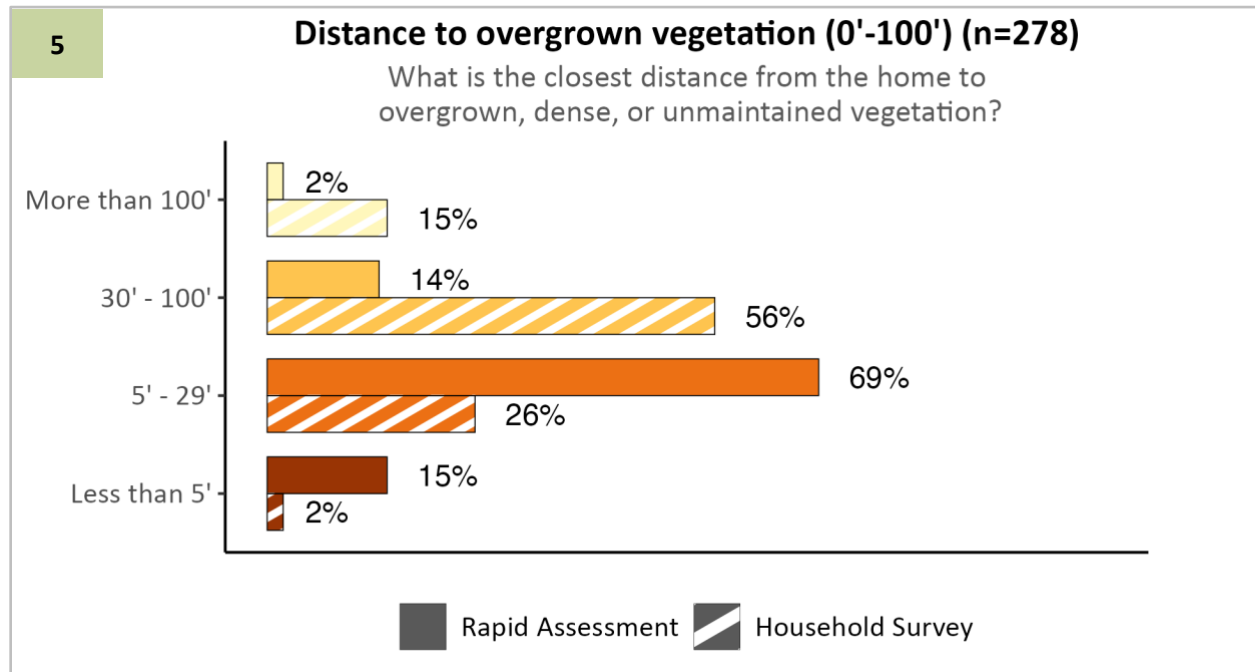
4

Distance to adjacent homes (n=279)

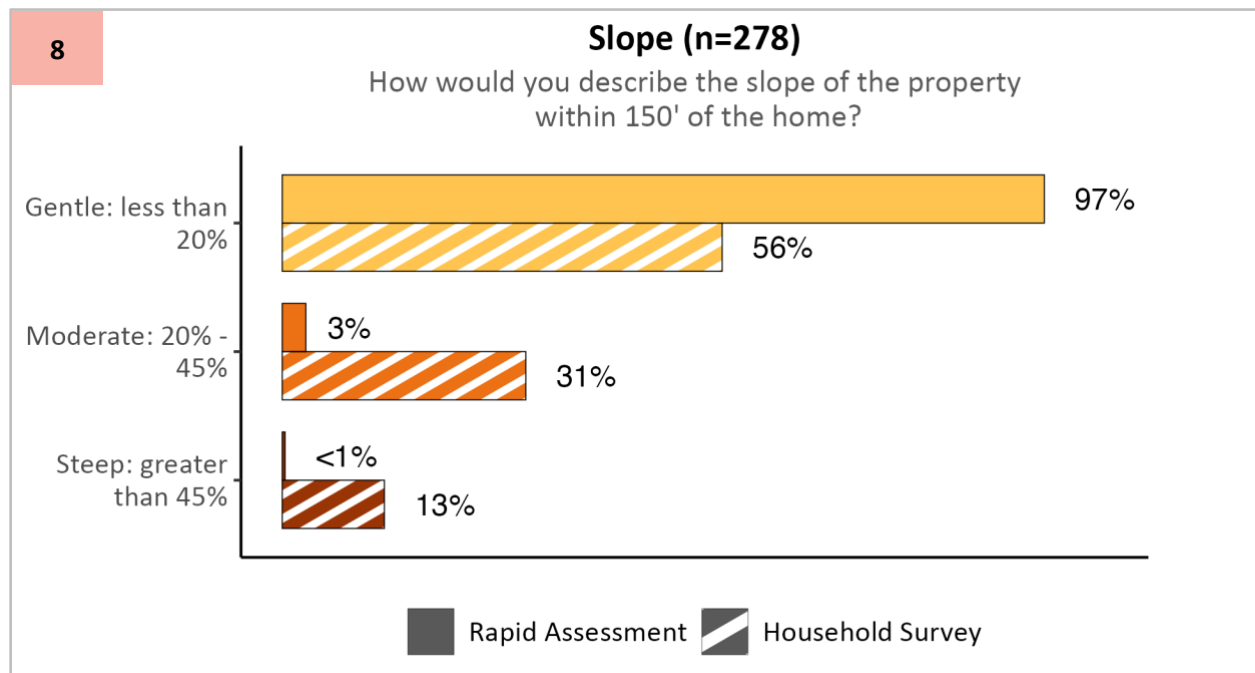
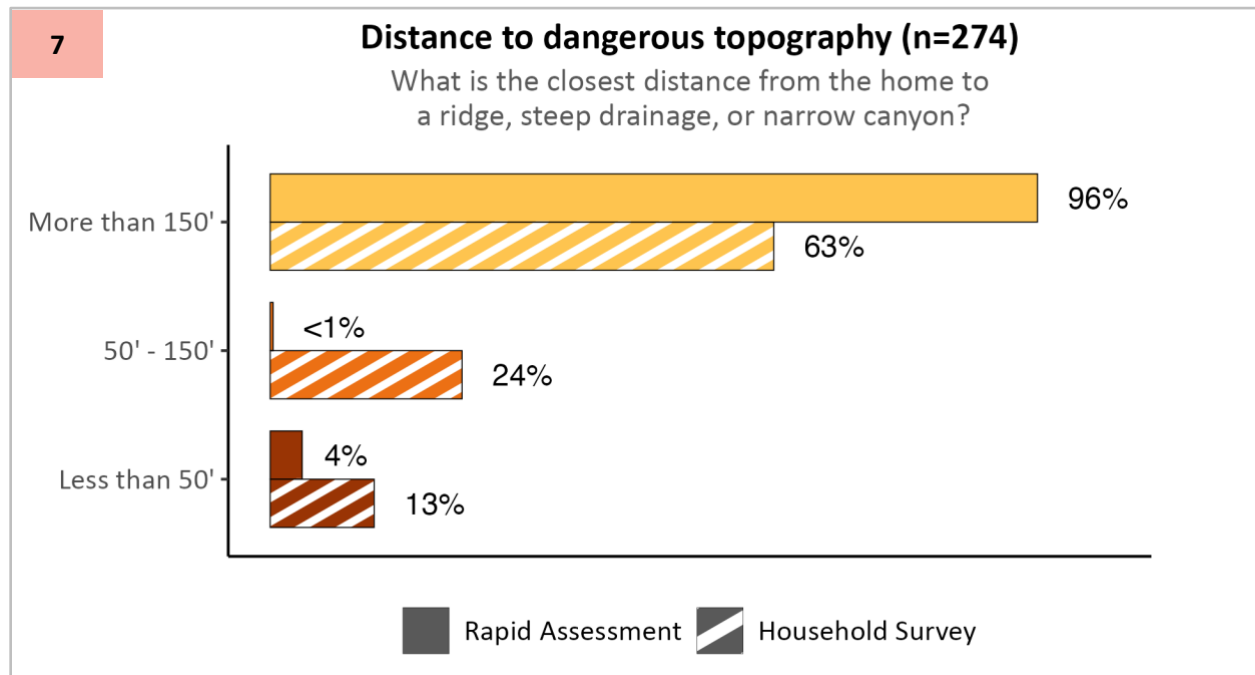
What is the closest distance to a neighboring home?



1.3 Defensible space

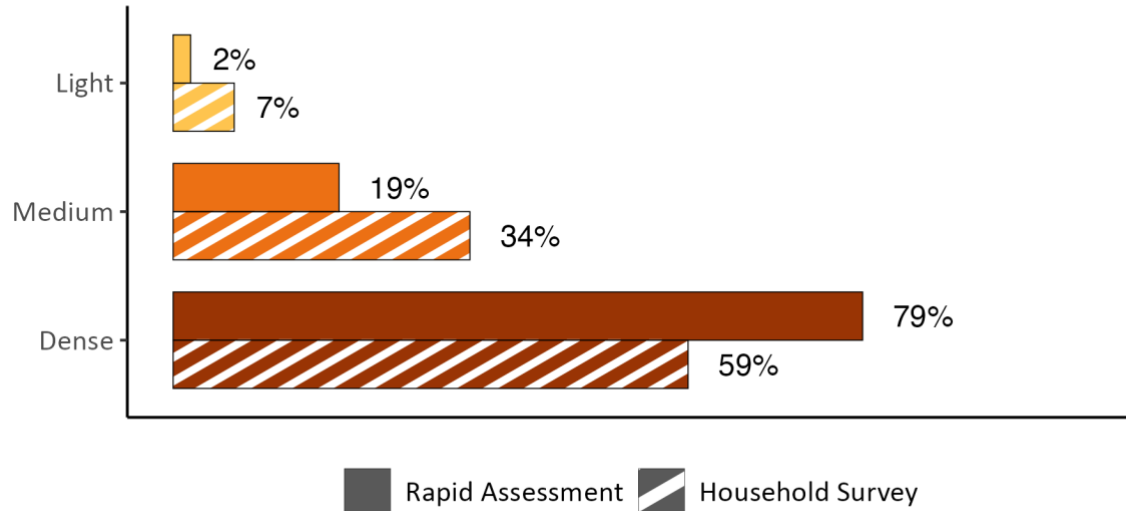


1.4 Background conditions



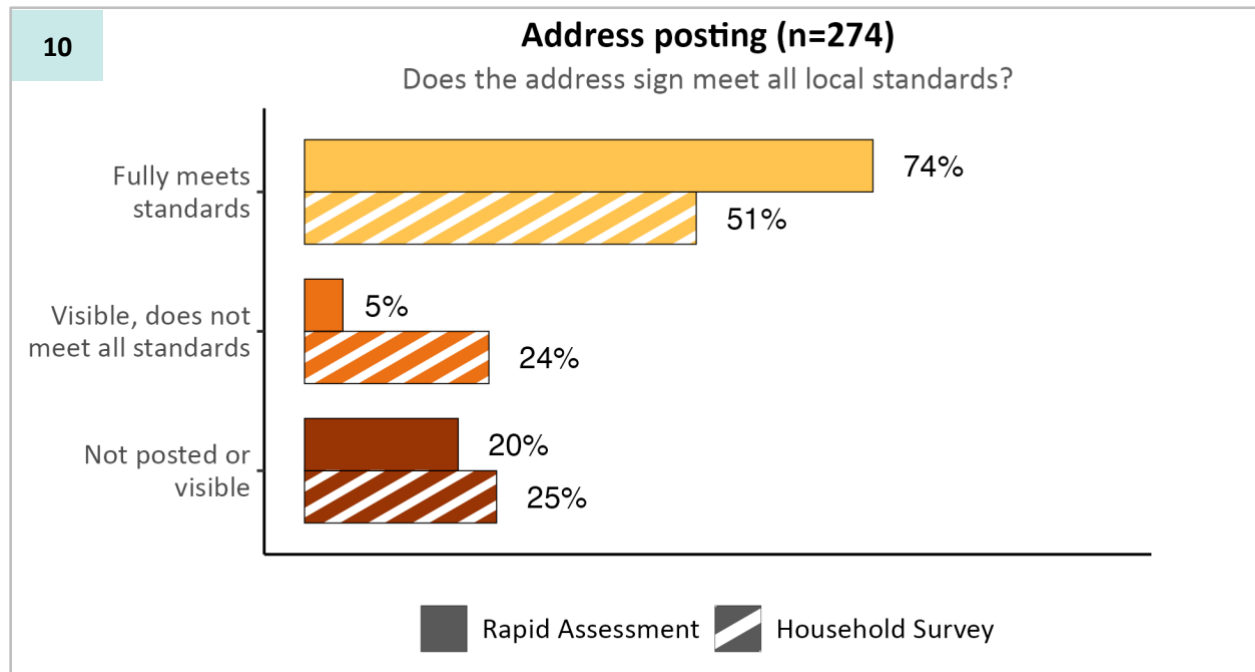
Adjacent fuels (100'-150') (n=277)

Which of the following best describes the dominant vegetation 100'-150' from the home?

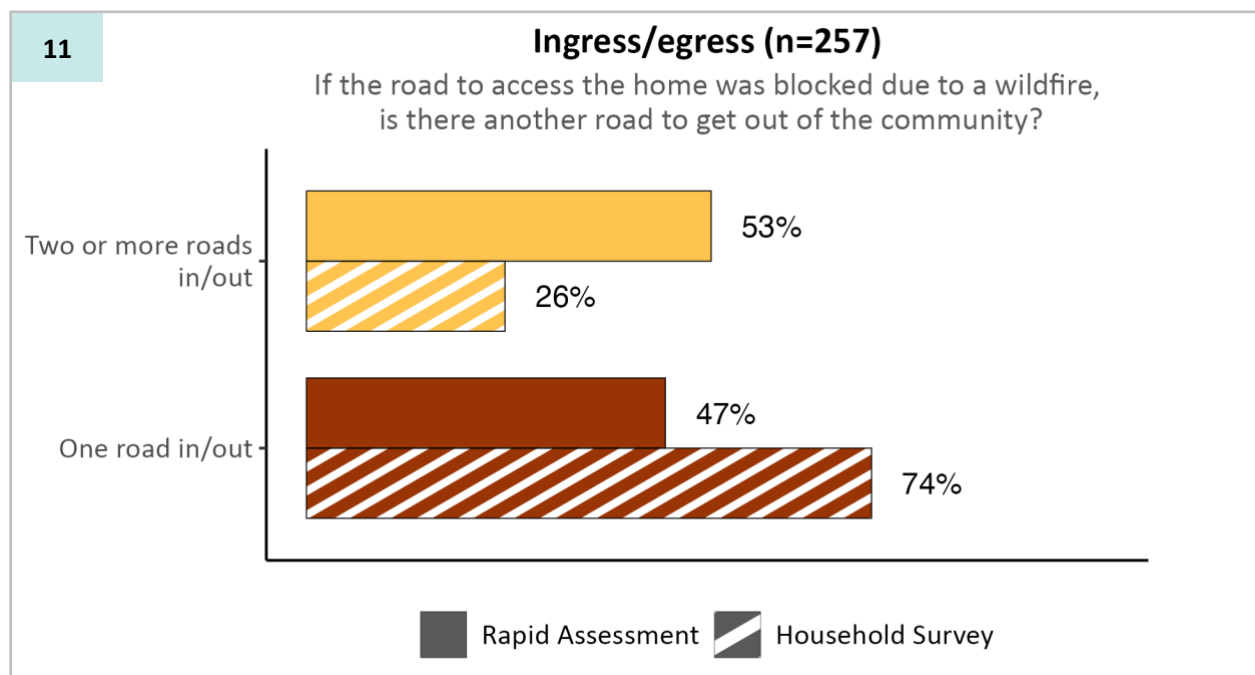


Additional description of categories: Light density ("grasses with less than 1' accumulated dead material or hardwood stand (e.g., birch, aspen, alder, cottonwood) without spruce and without a dense understory"), medium ("isolated shrubs/trees or mixed hardwood/spruce stand without a dense understory"), dense ("dense spruce stand or mixed hardwood/spruce stand with dense understory (e.g., small spruce, dead grasses, thick lichen)").

1.5 Access



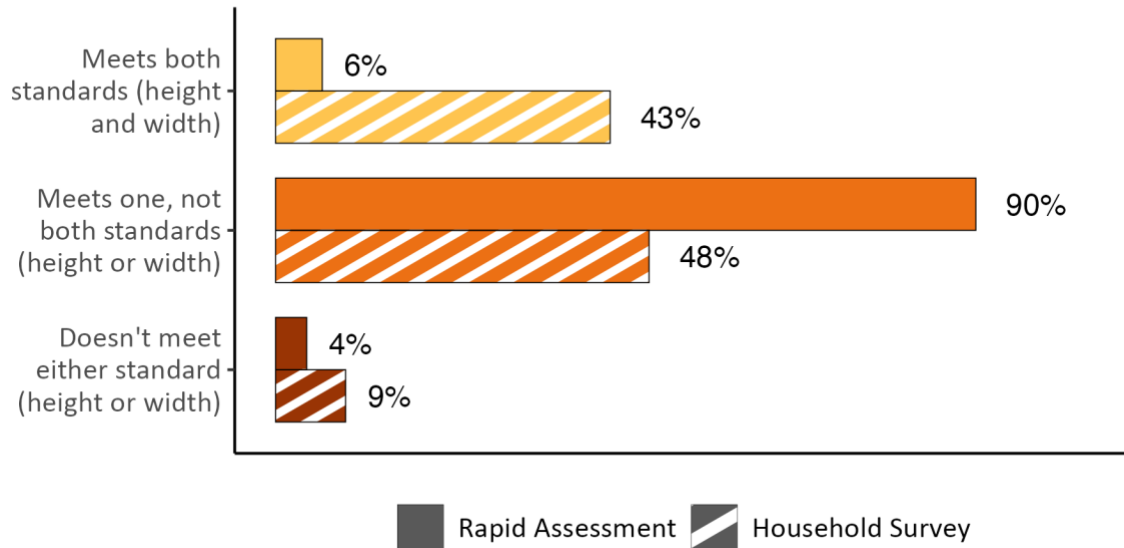
Standards: 3-inch numerals, on a contrasting background, made of durable materials, visible from road, and reflective.



12

Driveway clearance (n=230)

Does the driveway meet horizontal and vertical clearance standards?

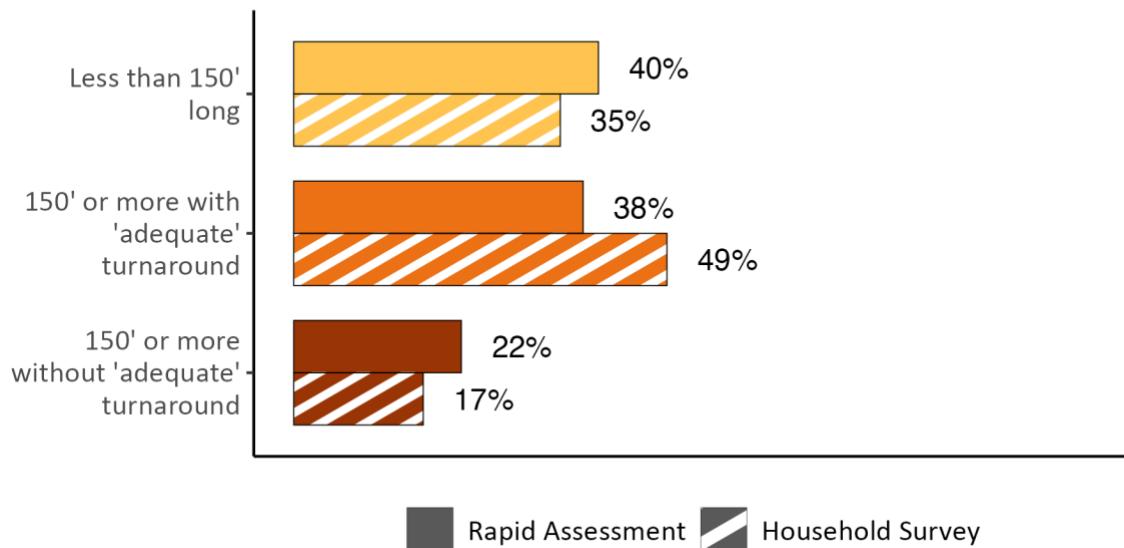


Standards: height at least 13.5' and width at least 20'.

13

Driveway length (n=243)

What best describes the driveway?



2. Comparison of all Rapid Assessments vs. paired Rapid Assessment and Household Survey

Section 2 provides tables that provide a three-way comparison of risk ratings from all rapid assessments in the study area, the subset of rapid assessments for which there is a paired household survey, and the household survey self-assessment.

2.1. Overall risk rating

Overall risk rating: Based on the sum of the 13 attribute scores. Homeowner's self-assessment response to: What do you think is your property's current overall wildfire risk rating?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=277)	Self-assessment from household surveys (n=277)
Low	6%	6%	13%
Moderate	19%	18%	51%
High	66%	68%	26%
Very high	3%	3%	7%
Extreme	5%	5%	3%

2.2. Home ignition potential

Risk attribute: Roof What is the most vulnerable roofing material?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=278)	Self-assessment from household surveys (n=278)
Tile, metal, or asphalt shingles	95%	96%	97%
Wood (shake shingles)	5% ^a	4% ^b	3%
a. Out of all rapid assessments in the study area, 16 were missing/unobserved (2%) and included in the highest risk category. b. Out of the subset of rapid assessments with a paired household survey, 3 were missing/unobserved (1%) and included in the highest risk category.			

Risk attribute: Siding What is the most vulnerable exterior siding material?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=278)	Self-assessment from household surveys (n=278)
Stucco, cement, brick, stone, or other non-combustible siding	4%	4%	10%
Log or heavy timbers	5%	5%	14%
Wood or vinyl siding	91% ^a	91% ^b	76%
a. Out of all rapid assessments in the study area, 63 were missing/unobserved (7%) and included in the highest risk category. b. Out of the subset of rapid assessments with a paired household survey, 18 were missing/unobserved (6%) and included in the highest risk category.			

Risk attribute: Combustible Attachments Does the residence have a combustible balcony, deck, porch, or fence attached to the structure?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=279)	Self-assessment from household surveys (n=279)
No combustible attachments	14%	10%	20%
Combustible attachments present	86% ^a	90% ^b	80%
a. Out of all rapid assessments in the study area, 29 were missing/unobserved (3%) and included in the highest risk category. b. Out of the subset of rapid assessments with a paired household survey, 7 were missing/unobserved (3%) and included in the highest risk category.			

Risk attribute: Distance to adjacent homes What is the closest distance to a neighboring home?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=279)	Self-assessment from household surveys (n=279)
More than 100'	72%	67%	73%
30' – 100'	27%	32%	24%
10' – 29'	1%	1%	2%
Less than 10'	<1% ^a	<1% ^b	<1%
a. Out of all rapid assessments in the study area, 2 were missing/unobserved (<1%) and included in the highest risk category. b. Out of the subset of rapid assessments with a paired household survey, 1 was missing/unobserved (<1%) and included in the highest risk category.			

2.3. Defensible space

Risk attribute: Distance to overgrown vegetation (0 – 100 ft) What is the closest distance from the home to overgrown, dense, or unmaintained vegetation?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=278)	Self-assessment from household surveys (n=278)
More than 100'	1%	2%	15%
Between 30' - 100'	16%	14%	56%
Between 5' - 29'	64%	69%	26%
Less than 5'	18% ^a	15% ^b	2%
a. Out of all rapid assessments in the study area, 0 were missing/unobserved. b. Out of the subset of rapid assessments with a paired household survey, 0 were missing/unobserved.			

Risk attribute: Distance to other combustibles (non-vegetation) What is the closest distance from the home to combustible items other than vegetation such as lumber, firewood, a propane tank, hay bales, or other materials that could easily ignite?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=278)	Self-assessment from household surveys (n=278)
More than 30' or no combustible items	10%	8%	29%
5'-30'	34%	38%	55%
Less than 5'	56% ^a	54% ^b	15%
a. Out of all rapid assessments in the study area, 34 were missing/unobserved (4%) and included in the highest risk category. b. Out of the subset of rapid assessments with a paired household survey, 7 were missing/unobserved (3%) and included in the highest risk category.			

2.4. Background conditions

Risk attribute: Distance to dangerous topography What is the closest distance from the home to a ridge, steep drainage, or narrow canyon?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=274)	Self-assessment from household surveys (n=274)
More than 150'	96%	96%	63%
50' - 150'	<1%	<1%	24%
Less than 50'	3% ^a	4% ^b	13%
a. Out of all rapid assessments in the study area, 2 were missing/unobserved (<1%) and included in the highest risk category. b. Out of the subset of rapid assessments with a paired household survey, 1 was missing/unobserved (<1%) and included in the highest risk category.			

Risk attribute: Slope The slope of a property refers to the steepness of the land. A large property may have steep, moderate, and gentle slopes. How would you describe the slope within 150 feet of the home?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=278)	Self-assessment from household surveys (n=278)
Gentle: less than 20%	98%	97%	56%
Moderate: between 20% and 45%	2%	3%	31%
Steep: greater than 45%	<1% ^a	<1% ^b	13%
a. Out of all rapid assessments in the study area, 2 were missing/unobserved (<1%) and included in the highest risk category. b. Out of the subset of rapid assessments with a paired household survey, 1 was missing/unobserved (<1%) and included in the highest risk category.			

Risk attribute: Adjacent Fuels (100 – 150 ft) Which of the following best describes the dominant vegetation 100'-150' from the home? This may be outside the property boundary.			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=277)	Self-assessment from household surveys (n=277)
Light	3%	2%	7%
Moderate	21%	19%	34%
Dense	77% ^a	79% ^b	59%
a. Out of all rapid assessments in the study area, 1 was missing/unobserved (<1%) and included in the highest risk category. b. Out of the subset of rapid assessments with a paired household survey, 0 were missing/unobserved.			

2.5. Access

Risk attribute: Address Posting Does the address sign meet the standards?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=274)	Self-assessment from household surveys (n=274)
Fully meets standard	66%	74%	51%
Address sign is visible, but does not meet all standards	6%	5%	24%
Not posted/visible from the primary road	29% ^a	20% ^b	25%
a. Out of all rapid assessments in the study area, 105 were missing/unobserved (12%) and included in the highest risk category. b. Out of the subset of rapid assessments with a paired household survey, 23 were missing/unobserved (8%) and included in the highest risk category.			

Risk attribute: Ingress/Egress If the road to access the residence was blocked due to a wildfire, is there another road to get out of the community?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=257)	Self-assessment from household surveys (n=257)
Two or more roads in/out	57%	53%	26%
One road in/out	43% ^a	47% ^b	74%
a. Out of all rapid assessments in the study area, 12 were missing/unobserved (1%) and included in the highest risk category. b. Out of the subset of rapid assessments with a paired household survey, 0 were missing/unobserved.			

Risk attribute: Driveway clearance Does the driveway meet the horizontal and vertical clearance standards?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=230)	Self-assessment from household surveys (n=230)
Meets both driveway standards	7%	6%	43%
Meets one, but not both, standards (height or width)	84%	90%	48%
Does not meet either standard (height or width)	9% ^a	4% ^b	9%
a. Out of all rapid assessments in the study area, 4 were missing/unobserved (<1%) and included in the highest risk category. b. Out of the subset of rapid assessments with a paired household survey, 1 was missing/unobserved (<1%) and included in the highest risk category.			

Risk attribute: Driveway length What best describes the driveway?			
Response categories	All rapid assessments in study area (N=873)	Subset of rapid assessments with a paired household survey (n=243)	Self-assessment from household surveys (n=243)
150 feet long or less	42%	40%	35%
Longer than 150 feet with turnaround “adequate” turnaround	31%	38%	49%
Longer than 150 feet without “adequate” turnaround	27% ^a	22% ^b	17%
a. Out of all rapid assessments in the study area, 0 were missing/unobserved. b. Out of the subset of rapid assessments with a paired household survey, 0 were missing/unobserved.			

Appendix E: Wildfire Research (WiRē) Household Survey Summary

Begins on next page.

Living with Wildfire in Funny River in 2023



Number of completed surveys: 308

Number of surveys mailed: 836

n = number of observations

Response rate: 36.8%

Blue numbers are percent responses (might not total to 100% due to rounding)

Red words are variable names and the number of responses (n=)

Please note: We encourage use of this survey instrument for applied, research, and/or publication purposes but request to be notified before any such use at: info@wildfireresearchcenter.org

** This research was supported, in part, by the U.S. Department of Agriculture, Washington Office Fire and Aviation Management; and the Bureau of Land Management, Wildland Fire Community Assistance Program. This research received in-kind support from the USDA Forest Service, Rocky Mountain Research Station; the Bureau of Land Management; the University of Colorado, Institute for Behavioral Sciences; the U.S. Geological Survey; the Kenai Peninsula Borough Office of Emergency Management; and the Central Emergency Services – Funny River. The household survey administration was paid for by the National Science Foundation funded project: Socio-ecological considerations for sustainable fuel treatments to Reduce wildfire Risk (SAFRR).*

**All data received and processed as of May 31, 2024*

**Document prepared May 31, 2024*

Section 1: In this first section of the survey, we ask about your home in Funny River. Please answer the following questions with respect to your **Funny River home**.

When choosing a response, please fill in the circle completely. Correct: ☒ Incorrect: ☐ ☐ ☐

ownrent_a (n=304)

1.1. Do you own or rent your Funny River home? (*Fill in one circle*)

- 48% Own: primary home
- 51% Own: secondary home
- 1% Rent: I do not own this home

1.2. In a typical year, what months do you spend any time at your Funny River home?
(*Fill in all that apply*) (n=302)

all_months	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	no_months
All 12 months	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	No months
43%	45%	47%	53%	59%	79%	89%	95%	93%	81%	60%	48%	48%	2%

rentout (n=302)

1.3. Do you rent out your Funny River home to others? (*Fill in one circle*)

- 93% No, I do not rent out my home
- 4% Yes, I rent out my home short-term
- 2% Yes, I rent out my home long-term

fulltime (n=288)

1.4. In what year did you move in to your Funny River home? (*Fill in the blank*)

AVERAGE = 2007

yrbuild (n=272)

1.5. In what year was your Funny River home originally built? (*Fill in the blank*)

AVERAGE = 1999

riskawar (n=304)

1.6. How aware of wildfire risk were you when you bought or decided to rent your Funny River home? (*Fill in one circle*)

- 51% Very aware
- 36% Somewhat aware
- 11% Not aware
- 3% Don't remember

Section 2: In this section, we ask about your experience with, and preparation for, wildfire at your Funny River home.

fire (n=303)

2.1. What is the closest distance (as a crow flies) a wildfire has come to your Funny River property? *(Fill in one circle)*

- 1% There has been a wildfire on my property
- 43% Less than 2 miles away but not on my property
- 45% 2 to 10 miles away
- 2% More than 10 miles away
- 9% Not sure

2.2. Have you had any of the following wildfire experiences at your Funny River home? *(Fill in one circle per row)*

		No	Yes
evacuated (n=302)	I have evacuated from my Funny River home due to a wildfire or threat of a wildfire	60%	40%
smokedam (n=286)	My Funny River home has had wildfire smoke damage	98%	2%
firedam (n=286)	My Funny River home has had wildfire damage	99%	1%
destroy (n=286)	My Funny River home was destroyed by a wildfire	99%	1%

2.3. Do you currently have an evacuation plan in the event a wildfire threatens your Funny River home? *(Fill in one circle per row)*

		No	Yes	Not applicable
evacppl (n=292)	For the people in my household	21%	79%	
evacpets (n=286)	For the pets in my household and on my property	14%	46%	40%
evaclivstoc (n=280)	For livestock on my property	12%	5%	83%

2.4. Have you completed any of the following actions to prepare for a **wildfire evacuation**, and do you want more information about how to complete any of the actions?

(Fill in two circles per row, one for each question) (n=308)

	Completed action?		Want more information about the action?	
Identify how I will be notified about an evacuation	evactact1_a	35%	evacinfo1_a	46%
Sign up for a wildfire evacuation notification system (KPB Alerts at https://info.kpb.us/)	evactact2_a	33%	evacinfo2_a	45%
Identify safe evacuation routes (multiple, if possible)	evactact3_a	54%	evacinfo3_a	31%
Identify a location that my household will evacuate to	evactact4_a	52%	evacinfo4_a	28%
Identify what to take and what to leave behind during an evacuation	evactact5_a	57%	evacinfo5_a	23%
Discuss evacuation with my neighbors	evactact6_a	39%	evacinfo6_a	28%
Create a checklist for steps to take before evacuating	evactact7_a	31%	evacinfo7_a	38%
Identify a place to stay during a long-term evacuation	evactact8_a	50%	evacinfo8_a	27%
Pack a “go bag” with items needed during an evacuation	evactact9_a	40%	evacinfo9_a	31%
Provide evacuation information to renters, if applicable	evactact10_a	19%	evacinfo10_a	14%

2.5. Please tell us about your experiences with your **homeowner’s insurance** for your Funny River home. (Fill in one circle per row)

		No	Yes	Don’t know
insure9 (n=299)	Do you currently have homeowner’s insurance?	24%	76%	
insure3 (n=284)	Has an insurance company ever refused to provide or renew insurance because of wildfire risk?	84%	3%	13%
insure4_a (n=282)	Has an insurance company charged a higher premium because of wildfire risk?	45%	8%	48%
insure10_a (n=282)	Has an insurance company ever given you a discount on your premium because you have reduced wildfire risk on your property?	59%	6%	36%
insure12 (n=286)	Do you think your home is adequately insured against loss from wildfire?	22%	56%	22%
insure13_a (n=282)	Has an insurance company ever required you to take action to reduce wildfire risk in order to continue coverage?	81%	9%	11%

Section 3: In this section, we ask about the characteristics of your Funny River home and the area near your Funny River home.

- 3.1. Does your Funny River home have any of the following roofing materials?
(Fill in all that apply) (n=299)

rooftype1	Tile, metal, or asphalt shingles	99%
rooftype2	Wood (shake shingles)	3%

- 3.2. Does your Funny River home have any of the following exterior siding materials?
(Fill in all that apply) (n=298)

sidetype1	Stucco, cement, brick, stone, or other noncombustible siding	16%
sidetype2	Log or heavy timbers	18%
sidetype3	Wood or vinyl siding	75%

attachcomb (n=301)

- 3.3. Does your Funny River home have a **combustible** balcony, deck, porch, or fence attached to the structure? (Fill in one circle)

23%	No
77%	Yes

combust_a (n=300)

- 3.4. What is the **closest** distance from your Funny River home to combustible items other than vegetation such as lumber, firewood, a propane tank, flammable outdoor furniture, or other materials that could easily ignite, including an outbuilding/shed, detached garage, or other structure on your property? (Fill in one circle)

31%	More than 30 feet or no combustible items
54%	5 – 30 feet
15%	Less than 5 feet

closeveg_a (n=301)

3.5. What is the **closest** distance from your Funny River home to overgrown, dense, or unmaintained vegetation? (*Fill in one circle*)

- 16% More than 100 feet
- 55% 30 – 100 feet
- 26% 5 – 29 feet
- 2% Less than 5 feet

domveg_b (n=300)

3.6. Which of the following best describes the **majority** of the vegetation just beyond 100 feet from your home (about 6 car lengths)? That area might be outside your property boundary and include properties immediately surrounding you. (*Fill in one circle*)

- 2% Grasses with less than one-foot dead material
- 5% Isolated shrubs/trees
- 5% Wooded area with only hardwood trees (birch, aspen, alder, cottonwood) and no small trees/shrubs and tall dead grasses
- 30% Mixed wooded area with both hardwood (birch, aspen, alder, cottonwood) and spruce trees; no small trees/shrubs and tall dead grasses underneath
- 42% Mixed wooded area with both hardwood (birch, aspen, alder, cottonwood) and spruce trees; lots of small trees/shrubs and tall dead grasses underneath
- 17% Dense spruce forest

closehome (n=302)

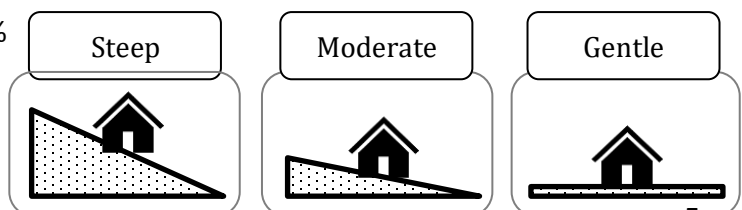
3.7. What is the **closest** distance from your Funny River home to a neighboring home outside of your property? (*Fill in one circle*)

- 73% More than 100 feet
- 24% 30 - 100 feet
- 2% 10 – 29 feet
- <1% Less than 10 feet

slope (n=301)

3.8. The slope of a property refers to the steepness of the land. A large property may have steep, moderate, and gentle slopes. How would you describe the average slope **within 150 feet** of your Funny River home? (*Fill in one circle*)

- 13% Steep – Greater than 45%
- 29% Moderate – 20% to 45%
- 57% Gentle – Less than 20%



ridge (n=297)

3.9. What is the **closest** distance from your Funny River home to a ridge, steep drainage, or narrow canyon? (Fill in one circle)

- 63% More than 150 feet
- 23% 50 – 150 feet
- 14% Less than 50 feet

3.10. Do any of the following describe your driveway? My driveway... (Fill in one circle per row)

		No	Yes
drivewayv (n=254)	has an overhead obstruction (e.g., tree limbs) lower than 13.5 feet	91%	9%
drivewayw_b (n=266)	is narrower than 20 feet wide	42%	58%
drivewayl_a (n=264)	is longer than 150 feet	35%	65%
turnarnd_a (n=286)	has room for a fire truck to turn around	27%	73%

3.11. Do any of the following describe your address number? My address number...
(Fill in one circle per row)

		No	Yes
homenumvis (n=297)	is visible from road?	25%	75%
homenumcontrast (n=275)	has contrasting background?	23%	77%
reflect_a (n=273)	is reflective?	27%	73%
homenumsize (n=280)	has 3-inch numerals?	18%	82%
homenumdurable (n=289)	is made of durable material?	16%	84%

roads (n=278)

3.12. If the road you use to access your Funny River home was blocked due to a wildfire, is there another road you could use to get out of your community? (Fill in one circle)

- 71% No
- 29% Yes

riskrate (n=299)

3.13. Properties in your community are assessed for overall wildfire risk based on the items asked about in questions 3.1 – 3.12 above. What do you think is your Funny River property's current overall wildfire risk rating? (Fill in one circle)

- 14% Low risk
- 53% Moderate risk
- 24% High risk
- 7% Very high risk
- 3% Extreme risk

Section 4: In this section, we ask about wildfire risk reduction activities.

talkfire (n=299)

4.1. Have you ever talked about wildfire issues with a neighbor? (*Fill in one circle*)

41% No

59% Yes

4.2. Have you done any of the following wildfire-related activities? (*Fill in one circle per row*)

		No	Yes
activities1 (n=299)	Removed large or dense vegetation near my Funny River home (e.g., trees, brush)	8%	92%
activities7 (n=286)	Regularly cleared my roof and gutters of leaves and pine needles	29%	71%
activities8 (n=293)	Regularly mowed and raked around my Funny River home	20%	80%
activities2 (n=289)	Made my Funny River home more fire resistant (e.g., replaced roofing, siding, added screening under eaves)	59%	41%
activities3 (n=297)	Helped neighbor(s) reduce vegetation on their properties	67%	33%
activities4 (n=297)	Helped reduce vegetation on community property (e.g., parks, gun range, sport fields)	93%	7%
activities5 (n=296)	Reduced vegetation on nearby public lands (e.g., borough, state, federal lands)	91%	9%
activities6 (n=295)	Participated in a community wildfire preparedness activity (e.g., meeting, chipper day)	90%	10%
activities9 (n=295)	Met with a wildfire professional at my Funny River home to evaluate and discuss my property's wildfire risk	80%	20%
activities10 (n=296)	Interacted with public land managers about vegetation reduction on nearby public lands	94%	6%
activities13 (n=299)	Obtained a permit to burn in 2023 (e.g., for lawn burns, fireburn barrels, pile burning)	70%	30%
activities14 (n=298)	Obtained a permit to cut trees in the last two years on public lands (borough, federal)	89%	11%

4.3. How much do you think each of the following factors contributes to the chances of a wildfire damaging your Funny River property **in the next 12 months**? (*Fill in one circle per row*)

		A lot	Somewhat	Not at all
contrib1 (n=294)	Vegetation on my property	16%	56%	28%
contrib2 (n=288)	Physical characteristics of my house or other buildings (ex. roofing or siding) on my property	9%	53%	38%
contrib3 (n=293)	Vegetation on my neighbors' properties	22%	53%	25%
contrib4 (n=293)	Vegetation on nearby public or large undeveloped land	39%	33%	28%
contrib5 (n=292)	Lack of nearby water supply (ex. hydrant or cistern) for fire suppression	27%	27%	45%

4.4. How acceptable are the following land management and regulatory approaches to **reducing wildfire risk** in Funny River to you? (*Fill in one circle per row*)

		Extremely acceptable	Very acceptable	Moderately acceptable	Slightly acceptable	Not at all acceptable
accept1_a (n=292)	Removing trees and other vegetation (thinning) on nearby public lands	38%	33%	20%	7%	3%
accept19 (n=289)	Creating a fuel break on nearby public lands by removing all trees in a strip/corridor next to a community or other values at risk	39%	31%	16%	9%	4%
accept20 (n=287)	Removing all trees in a defined area (about 2 to 6 acres) on nearby public lands (patch cut)	24%	20%	25%	18%	14%
accept9 (n=295)	Removing trees and other vegetation along roadways for safer evacuation and emergency response	42%	35%	15%	6%	3%
accept2 (n=291)	Burning piles of cut vegetation (slash piles) on nearby public or Borough lands	32%	37%	19%	8%	4%
accept21 (n=296)	Removing vegetation along utility right of ways to reduce fire starts	41%	40%	14%	4%	2%
accept3 (n=289)	Conducting a prescribed fire ignited by fire professionals on nearby public lands	19%	22%	28%	20%	10%
accept4_a (n=291)	Allowing a naturally ignited fire to burn on nearby public lands, when and where appropriate	16%	19%	31%	20%	14%
accept24 (n=290)	Establishing and managing public site to dispose of cut vegetation (slash)	46%	32%	16%	3%	2%
accept22 (n=288)	Allowing residents to reduce vegetation on nearby public lands	25%	25%	27%	13%	9%
accept18 (n=292)	Burning piles of cut vegetation (slash piles) on my or nearby private land	19%	26%	29%	15%	12%
accept23 (n=291)	Removing fire-prone trees (spruce) and planting fire-resistant trees (birch, aspen) on nearby public lands	37%	31%	19%	9%	5%
accept25_ wr024b (n=296)	Building a new public road and bridge across Kenai River that could be used in emergency evacuation	47%	14%	8%	9%	22%
accept6 (n=291)	Growth policies or land use regulations that limit new development in fire-prone areas in Funny River	18%	14%	28%	21%	20%
accept7 (n=291)	Building codes that require fire resistant materials for structures located in fire-prone areas	11%	15%	26%	24%	24%
accept8 (n=288)	Development standards that require vegetation management (e.g., removing trees and mowing grass) on lots located in fire-prone areas	11%	19%	22%	24%	24%
accept12 (n=294)	Temporarily shutting off the power grid during extreme fire risk days to avoid wildfire ignitions	15%	16%	23%	21%	25%

Section 5: In this section, we ask about your notions, expectations, and risk perceptions related to wildfire.

5.1. How much do you agree or disagree with the following statements about wildfire?
(Fill in one circle per row)

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
state2_a (n=295)	With technology, we can control all wildfires.	3%	9%	25%	33%	31%
state26 (n=296)	During a wildfire, I will receive an evacuation order with enough time to safely evacuate.	15%	38%	36%	9%	2%
state6 (n=296)	Wildfires are a natural part of a healthy forest/ecosystem.	30%	51%	14%	4%	1%
state11 (n=297)	I live here for the trees and will not remove any of them to reduce wildfire risk.	1%	5%	16%	47%	32%
state14 (n=297)	Homeowners' actions to reduce wildfire are not effective.	2%	7%	13%	50%	29%
state15 (n=297)	My property is at risk of wildfire.	10%	41%	31%	13%	5%
state17 (n=295)	My effort to reduce wildfire risk on my property is not effective because of the vegetation on nearby private or public lands.	5%	22%	33%	34%	6%
state20 (n=295)	Local firefighters have sufficient resources to protect threatened homes.	2%	14%	38%	32%	14%
state27 (n=297)	Reducing wildfire risk on private property improves firefighter safety.	37%	50%	11%	2%	0%
state22 (n=291)	Wildfires threaten my community water supply.	2%	12%	41%	32%	13%
state24 (n=297)	I plan to move out of the area in the next 12 months because of wildfires.	<1%	0%	3%	21%	76%
state25_a (n=295)	New residential development in nearby fire-prone areas increases the wildfire risk to my Funny River property.	5%	18%	38%	25%	15%

5.2. If there is a wildfire on your Funny River property, how likely do you think it is that the following would occur? (Fill in one circle per row)

		Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely	Not applicable
lact1 (n=297)	I would put the fire out.	14%	17%	18%	26%	25%	1%
lact2 (n=297)	The fire department would save my home.	5%	19%	32%	30%	14%	1%
lact3 (n=291)	My home would have smoke damage.	9%	29%	33%	19%	8%	2%
lact4 (n=291)	My home would have some physical damage.	9%	24%	37%	22%	8%	1%
lact5 (n=294)	My home would be destroyed.	6%	15%	29%	31%	17%	2%
lact6 (n=294)	I would lose money due to the loss of business or income on my property.	6%	7%	7%	10%	26%	45%
lact7 (n=296)	My trees and landscape would burn.	18%	30%	30%	16%	5%	1%
lact9 (n=293)	My neighbors' homes would be damaged or destroyed.	10%	22%	37%	21%	8%	2%
lact12 (n=290)	Direct flame would ignite my home.	13%	28%	25%	20%	13%	1%
lact13 (n=293)	Embers would ignite my home.	6%	15%	35%	28%	13%	2%
lact14 (n=294)	Nearby homes would ignite my home.	4%	9%	16%	28%	36%	6%

chances1 (n=293)

5.3. What do you think is the chance that a wildfire will be on your Funny River property in the next 12 months? (Fill in one circle)

For sure										No chance
100%	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%
<1%	<1%	1%	2%	3%	21%	6%	14%	15%	30%	7%

chances2 (n=293)

5.4. If there is a wildfire on your property in the next 12 months, what do you think is the chance that it will destroy or severely damage your Funny River home? (Fill in one circle)

For sure										No chance
100%	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%
6%	3%	8%	9%	5%	19%	4%	18%	10%	16%	3%

Section 6: In this section, we ask where you get information about wildfire, how useful the information is, how you receive information, and how you would like to receive information.

6.1. The following sources provide information about wildfire risk. If you have received information from one of these sources, how useful has it been? *(Fill in one circle per row)*

			Usefulness of information among respondents who received information from the source (sums to ~100%)					
		HAS Received info from source		Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
Central Emergency Services	sourcerec1 (n=291)	51%	sourceuse1 (n=147)	23%	40%	26%	10%	1%
Community group	sourcerec2 (n=282)	37%	sourceuse2 (n=104)	14%	33%	24%	25%	4%
Local tree contractor (tree cutter, tree services)	sourcerec28 (n=286)	22%	sourceuse28 (n=62)	11%	19%	16%	29%	24%
Office of Emergency Management	sourcerec32 (n=283)	43%	sourceuse32 (n=123)	22%	29%	24%	20%	6%
Local government	sourcerec29 (n=282)	36%	sourceuse29 (n=101)	12%	24%	27%	26%	12%
Tribal entity	sourcerec52 (n=279)	13%	sourceuse52 (n=36)	3%	3%	11%	31%	53%
2022 Kenai Peninsula Community Wildfire Protection Plan	sourcerec47 (n=283)	30%	sourceuse47 (n=84)	13%	23%	31%	25%	8%
Kenai Peninsula Ready-Set-Go! (info.kpb.us)	sourcerec24 (n=283)	25%	sourceuse24 (n=72)	17%	31%	25%	18%	10%
Alaska Firewise	sourcerec5 (n=286)	37%	sourceuse5 (n=107)	21%	31%	26%	20%	3%
Kenai National Wildlife Refuge	sourcerec53 (n=279)	25%	sourceuse53 (n=70)	13%	24%	27%	23%	13%
All Lands All Hands (ALAH)	sourcerec54 (n=283)	10%	sourceuse54 (n=28)	7%	14%	21%	32%	25%
Alaska Division of Forestry and Fire Protection	sourcerec55 (n=279)	30%	sourceuse55 (n=85)	18%	31%	28%	19%	5%
Chugach National Forest	sourcerec14 (n=283)	17%	sourceuse14 (n=48)	10%	23%	27%	25%	15%
Media (newspaper, TV, radio, internet)	sourcerec4 (n=285)	56%	sourceuse4 (n=161)	12%	18%	39%	22%	9%

- 6.2. How do you currently receive information about wildfire risk reduction, and how would you prefer to receive information? (Fill in all circles that apply) (n=308)

	I receive information from this source		I would like to receive information from this source	
Email/e-newsletter	receiveinfo1_a	15%	wantinfo1_a	52%
Social media (Facebook, Twitter)	receiveinfo5_a	22%	wantinfo5_a	23%
Conversations with local wildfire specialists	receiveinfo10_a	11%	wantinfo10_a	36%
Community meetings	receiveinfo3_a	18%	wantinfo3_a	30%
Internet (non-social media)	receiveinfo6_a	23%	wantinfo6_a	28%
Mailed newsletter	receiveinfo2_a	16%	wantinfo2_a	45%
TV news	receiveinfo7_a	26%	wantinfo7_a	21%
Newspaper	receiveinfo8_a	12%	wantinfo8_a	17%
Radio	receiveinfo9_a	32%	wantinfo9_a	25%

oemnum (n=295)

- 6.3. Do you know the number to reach the Office of Emergency Management call center? (Fill in one circle)

83% No

17% Yes

Section 7: In this section, we would like to know why you do or do not take action to reduce the risk of wildfire to your Funny River property.

- 7.1. Do any of the following **limit your ability** to take action to reduce the wildfire risk on your Funny River property (e.g., cutting trees, changing roof/siding)? (*Fill in all that apply for each row*)

Personal resources (n=295)	factor1_a Financial cost 32%	factor2_a Time to do the work 26%	factor3_b Physical ability to do the work 37%	factorno1_a None of these 38%
Lack of specific information about... (n=285)	factor11_a Factors contributing to my property's wildfire risk 13%	factor4_a How to reduce wildfire risk on my property 15%	factor12_a Where to dispose of cut vegetation (slash) 27%	factorno2_a None of these 60%
Personal perspectives (n=289)	factor6_a I do not want to change the way my property looks 15%	factor5_b I do not think taking action would reduce my property's wildfire risk 16%	factor13_a It's a low priority to me 9%	factorno3_a None of these 64%
Community (n=290)	factor14_a Lack of options for disposing of cut vegetation (slash) 26%	factor9_b Restrictions on the changes I can make to my property 11%	factor15_a Social pressure from neighbors <1%	factorno4_a None of these 67%

7.2. Would any of the following **encourage you** to take action to reduce the wildfire risk on you Funny River property? *(Fill in all that apply for each row)*

Resources (n=295)	incentv1	incentv3	incentv4	incentvno1
	Cost-share or financial assistance 38%	Help doing the work 39%	Recommended contractors 12%	None of these 41%
Information (n=295)	incentv6	incentv7	incentv8	incentvno2
	A report describing my property's wildfire risk factors 37%	Videos showing how to reduce risk on a property in my area 19%	One-on-one visit with wildfire risk experts on my property 38%	None of these 37%
Other (n=295)	incentv9	incentv10	incentv11	incentvno3
	Feedback on work I've done to reduce my property's risk 28%	Recognition for taking action 8%	Neighborhood group that organizes wildfire risk-reduction activities 12%	None of these 60%

Section 8: In this section, we ask about personal and household characteristics. . As with all questions in this survey, including those in this section, your name will not be connected to your answers in any way

risktake1 (n=288)

8.1. In general, do you view yourself as someone who is very willing to take risks or not at all willing to take risks? (*Fill in one circle*)

Very willing to take risks									Not at all willing to take risks	
10	9	8	7	6	5	4	3	2	1	0
4%	2%	9%	13%	11%	22%	9%	12%	8%	4%	6%

age (n=286)

8.2. What is your age? (*Fill in the blank*)

MEAN AGE: 67

gender (n=289)

8.3. Are you? (*Fill in one circle*)

74% Male
26% Female
0% Other

educ (n=280)

8.4. What is the highest grade or year of school you completed? (*Fill in one circle*)

1% Less than high school
15% High school graduate
25% Some college or technical school
10% Technical or trade school
27% College graduate
5% Some graduate work
17% Advanced degree (M.D., M.A., M.S., Ph.D., etc.)

employ (n=286)

8.5. Which of the following best describes your current employment situation?
(Fill in one circle)

- 26% Employed full time (including self-employed)
- 6% Employed part time (including self-employed)
- 4% Unemployed or do not work outside of the home
- 64% Retired

income_a (n=253)

8.6. Which of the following categories describes your annual household income?
(Fill in one circle)

- 9% Less than \$24,999
- 15% \$25,000 – \$49,999
- 17% \$50,000 - \$74,999
- 19% \$75,000 - \$99,999
- 24% \$100,000 - \$199,999
- 16% \$200,000 or more

Thank you for your help. Survey results will be reported in summary form and your name will not be connected to your answers in any way. Please use the space below to write any additional comments.

Appendix F: Outreach Materials

Begins on next page.



Understand your **WILDFIRE RISK**

WiRē
wildfire research

The Wildfire Research (WiRē) Center is a partner of Central Emergency Services and the Kenai Peninsula Borough Office of Emergency Management. For more information, visit wildfireresearchcenter.org.



WILDFIRE RISK ASSESSMENTS

We conducted wildfire risk assessments on 873 residential properties in the community. This evaluation was conducted using a combination of high-resolution imagery and in-person roadside assessments by trained assessors.

We observed factors that affect the chances of homes catching fire. Additionally, we looked at the vegetation and combustible items immediately surrounding homes, the types and density of vegetation around the property that can influence wildfire behavior, and features that could affect access to homes during a wildfire.



HOUSEHOLD SURVEY RESULTS

In 2024, we mailed 836 surveys on wildfire risk to households in Funny River. The survey covered a wide range of topics, including the acceptability of wildfire-related policies and fuel treatments, parcel-level wildfire risk perceptions, barriers and incentives to action, communication preferences, and more.

We received 308 completed surveys, a **36.8% response rate**.

Thank you to all of those who participated!



**Central
Emergency
Services**



907-262-4792



www.kpb.us/service-areas/ces



www.facebook.com/CESalaska



231 South Binkley
Soldotna, AK 99669



**Kenai Peninsula
Borough Office of
Emergency
Management**



907-262-4910



oem@kpb.us



info.kpb.us



253 Wilson Ln
Soldotna, AK 99669



**Alaska Department
of Natural Resources
Division of Forestry
and Fire Protection**

Kenai-Kodiak Area



907-260-4200



Burn permit hotline
907-260-4260



Burn permit information
dnr.alaska.gov/burn/fireareas/kenai-kodiak



Kenai-Kodiak Area Office
42499 Sterling Highway
Soldotna, AK 99669



**U.S. Fish and
Wildlife Service
Kenai National
Wildlife Refuge**



907-262-7021



www.fws.gov/refuge/kenai



33398-B Ski Hill Road
Soldotna, AK 99669

RECOMMENDED HOMEOWNER ACTIONS



**CREATE AND MAINTAIN
DEFENSIBLE SPACE**



**COMPLETE EVACUATION
PREPARATIONS**

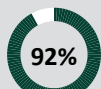
For more
details,
see page 2

**Start with your home and the
first 5 feet surrounding it.**



Keep up the good work!

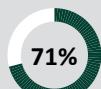
Survey respondents reported having done these wildfire-related activities on their property:



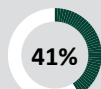
Reduced
vegetation



Regularly
mowed/
raked around
residence



Regularly
cleared roof
and gutters



Hardened
home

TO-DO LIST

- ☐ Regularly remove all tree needles, leaves, and other debris from your home's roof, deck, and gutters, as well as under the deck.
- ☐ Move firewood, propane tanks, and all other combustible items at least 30 feet away from your home.
- ☐ Prune tree branches hanging over your home's roof and within 10 feet of the chimney.
- ☐ Remove all flammable vegetation within 5 feet of your home and deck, including shrubs, slash, mulch, and other woody debris.
- ☐ Refinish wood decks (e.g., sand and stain).

Understand your home's **DEFENSIBLE SPACE**

ZONE 1 (0–5 feet from home)

37% Homes in the study area had adequate defensible space in Zone 1 according to trained assessors.

Zone 1 is the priority area to prevent flames from coming in direct contact with the structure. Clear vegetation and other combustibles within 5 feet of the home.

ZONE 2 (5–30 feet from home)

<1% Homes in the study area had adequate defensible space in Zone 2 according to trained assessors.

In Zone 2, proper maintenance includes reducing fuels for fire to help decrease fire spread and intensity.

ZONE 3 (30–100 feet from home)

Zone 3 focuses on mitigation to slow or stop the spread of wildfire and helps protect your home. Where property lines meet, homeowners are encouraged to work with neighbors to reduce risk.

LEARN MORE ABOUT personal use firewood harvesting on borough land



Kenai Peninsula
Borough Land
Management Division
Visit bit.ly/KPB_Resources_Firewood
or scan the QR code to the left.

Other resources



Alaska Department of
Natural Resources
Division of Forestry and
Fire Protection
Visit forestry.alaska.gov/wood/firewood.htm
or scan the QR code to the left.

**U.S. Fish and Wildlife Service
Kenai National Wildlife Refuge**

For permits, contact:
907-262-7021 / 877-285-5628



READ MORE about defensible space

Visit bit.ly/Firewise-Alaska
or scan the QR code to the left.



DOWNLOAD the Ready, Set, Go! preparedness guide

Visit info.kpb.us/pages/preparedness-guide
or scan the QR code to the left.



SIGN UP for alert notifications

Visit my.kpb.us/users/sign_up or scan the QR code to the left.



STAY INFORMED

Visit the Kenai Peninsula Borough Office of Emergency Management's Facebook page at www.facebook.com/KPBAlerts or scan the QR code to the left.

Evacuation preparations

Emergency notifications (pp. 10–12)

- ☐ Identify how I will be notified about an evacuation.
- ☐ Sign up for Kenai Peninsula Borough cell phone emergency notification alerts (p. 12).

Where to evacuate (pp. 17–20)

- ☐ Identify safe evacuation routes (multiple routes, if possible).
- ☐ Identify a location that my household will evacuate to (don't forget about pets and livestock).
- ☐ Identify a place to stay during a long-term evacuation.

Other critical steps (pp. 21–30)

- ☐ Create a checklist for steps to take before evacuating
- ☐ Identify what to take and what to leave behind during an evacuation.
- ☐ Pack a go bag with important items needed during an evacuation.
- ☐ Discuss evacuation with neighbors.

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