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Living With Wildfire in Santa Fe, New Mexico: 2021 Data Report

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Abstract: When it comes to wildfire in the wildland-urban interface (WUI), parcel-level wildfire risk mitigation and preparedness matter. This study, in collaboration with the City of Santa Fe Fire Department, used rapid risk assessment and household survey methods to better understand wildfire risk to parcels—as well as homeowners’ risk perceptions, current mitigation and preparedness actions, communication preferences, and views on community-level risk mitigation strategies—in the Santa Fe, New Mexico, study area. Results may inform educational outreach and programming from the City of Santa Fe Fire Department.

Keywords: WiRē (wildfire research), partner, risk assessment, survey data, wildland-urban interface, social science, mitigation, wildfire risk, community, homeowner, social science

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EXECUTIVE SUMMARY

The City of Santa Fe is well known for arts, food, and architecture, but it also faces significant risk of wildfire. In 2020, the City of Santa Fe partnered with the Wildfire Research (WiRē) team with the goal of better understanding the needs of residents within the study area and their level of support for wildfire risk mitigation programs. The resulting project centers on two types of property-level data: rapid 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 building materials. The standard WiRē RA was slightly modified to capture the City's particular interest in understanding the prevalence of combustible attachments to dwellings, such as fences, balconies, and porches/portals. First, WiRē RAs were conducted on all properties with residential structures within the study area, which consisted of select communities within the City boundaries. Next, a social survey was sent to the owners of all households 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.

This report summarizes the results of the study. Household survey respondents were generally aware of wildfire risk, with high levels of stated awareness (81% claimed to be somewhat or very aware of risk when they moved in; fig. 18) and no clear patterns of under- or overestimating overall parcel-level risk compared to the WiRē RA (fig. 4). More than half of survey respondents reported receiving information about wildfire from the City of Santa Fe Fire Department and from community groups such as homeowners associations (HOAs) (fig. 30). Most respondents who received information from these sources found that information to be very or extremely useful, as did those receiving information from Santa Fe County Fire Departments, the Fireshed Ambassador program, or Firewise USA (fig. 30).

The survey also indicated widespread support for multiple types of programs intended to reduce wildfire risk to the City. Most survey respondents found public lands treatments such as removing trees and conducting prescribed fires (fig. 42) and regulations such as building codes, growth policies, and development standards (fig. 43) highly acceptable. Supporting the Santa Fe Fire Department's Fireshed Ambassador program and increasing City capacity for wildfire risk reduction and water protection were also rated as highly acceptable by a strong majority of survey respondents (fig. 44).

Despite more than two-thirds of survey respondents reporting at least 30 feet of defensible space, the WiRē RA found fewer than 10% of properties as having at least 30 feet of defensible space and one out of every five properties as having less than 5 feet of defensible space (fig. 9). The WiRē RA also found many properties with combustible items near and attached to the home (fig. 10 and fig. 7, respectively). Many respondents reported barriers to conducting mitigation on their properties, including lacking the physical ability to do the work (31%; fig. 35), lacking options for disposing of vegetation (24%; fig. 38), and lacking specific information about how to reduce the risk on their property (24%; fig. 36). However, most respondents reported having undertaken vegetation reduction around the home and regular maintenance to reduce wildfire risk, and more than one-third have met with a wildfire professional to evaluate home risk (fig. 34). Results also indicated widespread interest in many programs for supporting mitigation on private property, including a majority of survey respondents reporting that they would be encouraged to take action by one-on-one visits with wildfire

experts on their properties or by reports describing their properties' wildfire risk factors (fig. 40), and more than one-third wanting feedback on work that they have done to reduce their risk (fig. 41).

Finally, results indicated that evacuation was a concern, with the WiRē RA finding that more than half of properties had only one road to get out of the community during a wildfire (fig. 15). Although many respondents reported some level of planning for evacuation, including majorities having identified safe evacuation routes and what to take with them during an evacuation, survey results also indicated strong demand for more information about evacuation, including among those who reported having done some planning. Common topics for which more information was desired included identifying how residents would be notified to evacuate, how to sign up for emergency notification, and creating a checklist.

Overall, the study indicated a community that was engaged in preparing for wildfire yet had more that could be done to reduce its risk. Common architectural styles led to generally hardened structures, and respondents reported many risk reduction activities, yet most properties were found to have significant vulnerabilities related to limited defensible space and combustible materials near and attached to dwellings. Although many survey respondents did not perceive these same vulnerabilities on their own properties, survey results nonetheless demonstrated widespread interest for programs intended to reduce wildfire risk at the landscape, community, and individual parcel scales.

WHAT IS WiRē?

The Wildfire Research Center (WiRē¹ Center) works with wildfire practitioners seeking to create communities that are adapted to wildfire through an evidenced-based approach. Historically, immediate threats and wildfire suppression have garnered much attention and resources. While these efforts remain critical, getting in front of the problem by promoting pathways to fire adaptation is of paramount importance. Fire adaptation is about living with wildfire. It's about creating safe and resilient communities that mitigate wildfire risk on their property before a fire, as well as supporting an effective response when fires threaten a community. It is also about allowing fire, as an important ecological process, on the landscape when it is safe and beneficial to do so.

Over the last decade, a team of researchers and practitioners, referred to as the WiRē Team, has developed and successfully implemented a systematic data collection and integration approach (the WiRē Approach) that informs local wildfire risk education efforts and allows for monitoring of community adaptation over time.

The mission of the WiRē Center is to support evidence-based community wildfire education and mitigation efforts so that communities can live with wildfire. Specifically, the WiRē Center provides personalized expertise and support to collect, interpret, and use paired parcel-level wildfire risk and social data. The WiRē Approach enables partners to effectively allocate resources and engage with residents in the study area. Leveraging lessons learned across projects, the WiRē Center pursues scientific approaches to inform conversations and decisions about wildfire adaptation.

Individual WiRē Team members maintain a connection with the WiRē Center by participating on the Center's Advisory Committee or as a member of the Board of Directors. In this capacity,

¹ Pronounced Wy-REE

the WiRē Team provides technical and strategic guidance to the WiRē Center, ensuring the WiRē Approach is implemented with exceptional quality and scientific integrity.

The WiRē Approach

Currently, the WiRē Approach includes two central data collection efforts:

1. A property-level WiRē Rapid Wildfire Risk Assessment (WiRē RA) based on attributes related to access to the property, background fuels and topography, vegetation near the home, and building materials. 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: What Did We Do? section).
2. A social survey sent to the owner of each assessed property, which collects owners' 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 both 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, the WiRē Center summarizes local data and provides wildfire practitioner partners with insights to act on research results. The WiRē Center also works with some partners with a regional (e.g., multi-county) reach and receive support to implement portions of the WiRē Approach into new communities.

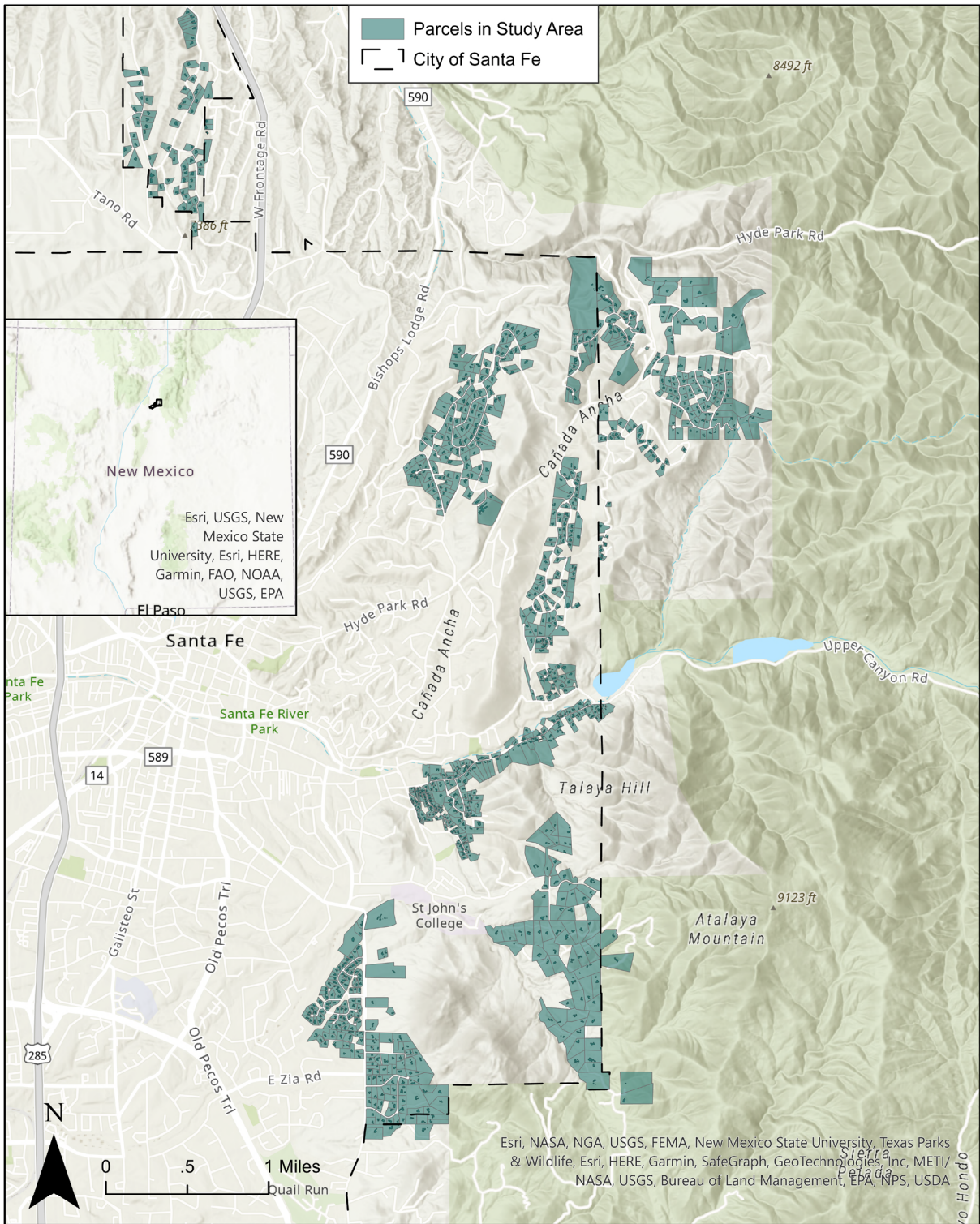
At a broader scale, the WiRē Center manages, compiles, and analyzes data collected across communities to provide insights across space and time with respect to wildfire risk on private land and the characteristics, knowledge, and experience of the people who live on those properties. These data are an important contribution to the state of knowledge regarding private lands and wildfire risk. Guided by the WiRē Team, the WiRē Center advances understanding of effective pathways to community wildfire adaptation.

PROJECT AREA: WHAT DO THE COMMUNITY AND ENVIRONMENT LOOK LIKE?

WiRē partnered with the City of Santa Fe Fire Department (SFFD) to implement the WiRē approach in select wildland-urban interface neighborhoods identified in SFFD’s Wildfire Hazard and Risk Analysis. The City of Santa Fe is approximately 37.4 square miles at 7,000 feet in elevation, nestled on the west slopes of the lower Sangre De Cristo Mountains. Communities in this area are predominantly made up by people who are Hispanic/Latino, Native American, and Caucasian. The City of Santa Fe serves as a “hub”—where urban and rural communities mingle—providing jobs, recreation, commerce, resources, and many other services.

There are approximately 3,000 parcels in the wildland-urban interface. The WiRē study area included 965 residential parcels in the City of Santa Fe (refer to fig. 1) within the communities of Arroyo Chamiso; Cerro Gordo East; Hyde Park and Santa Fe Summit; Los Cerros Colorados; Monte Sereno; Sierra del Norte; Upper Canyon Road; and Talaya Hill, Ponderosa Ridge, and Wilderness Gate. Most household survey respondents (hereinafter referred to as survey respondents) reported living in their home full-time (77%), and the median age of survey respondents was 69 years old.

The ecology around Santa Fe is mostly comprised of piñon-juniper forests, shrub and semi-arid grasslands, ponderosa pine forests, mixed conifer forests, and wetlands/riparian areas. Around homes, it is common to see piñon pines, junipers of multiple species, sagebrush, yuccas, and aspens. These ecosystems have been subjected to drought, and piñon pine populations have been negatively affected by outbreaks of the ips bark beetle. In Santa Fe County, there are 11 birds, 3 mammals, and 1 mollusk that are listed as endangered species.



WiRē + City of Santa Fe Fire Department
Data collected in 2021
Map produced by The Wildfire Research Center (WiRē)

Figure 1—Map of residential parcels in the study area for the City of Santa Fe, New Mexico. Inset shows the location of the study area in New Mexico. 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: City of Santa Fe Fire Department

The SFFD has been in operation since 1880. Its mission is to “provide sustainable quality of life now and in the future for the entire Santa Fe community by protecting and preventing the loss of life and property through professional and efficient planning, preparation, training, fire prevention, public education, and deliver of emergency services.” The SFFD has an established Wildland Division that provides information, assistance, and recommendations to homeowners and landowners with property in areas where forest fires are a danger. The SFFD is proud to be one of the few departments in New Mexico to have a staffed Wildland Division that is dedicated to wildland-urban interface issues and wildfire prevention.

SFFD is focused on reducing life and property loss due to wildfires. SFFD has five primary relevant programs:

1. **Fireshed Ambassadors**—A community volunteer network that educates individuals about wildfire prevention, mitigation, and emergency response. The Fireshed Ambassadors spread the word about wildfire.
2. **Wildfire Hazard Assessments**—SFFD performs on-site, wildfire hazard assessments for individual properties and recommends actions to reduce wildfire risk.
3. **Mitigation Agreements**—SFFD’s wildland firefighters thin trees around private homes.
4. **Fuels Reduction**—SFFD’s wildland firefighters thin trees on City-owned property or in collaboration with Forest Service, Santa Fe County, New Mexico State Forestry, or other entities.
5. **Wildland Fire Suppression**—SFFD provides wildland firefighting resources that are dedicated to suppression.

METHODS: WHAT DID WE DO?

In the study area, SFFD and WiRē implemented the WiRē Approach, a systematic approach to data collection that includes a parcel-level WiRē RA and household survey data collection. Together, these two forms of data collection support better understandings of wildfire risk and the residents whose decisions and actions shape the community landscape. The project launched with the mailing of an initial letter in late 2020 to inform residents in the study area of the upcoming activities (refer to Appendix A for correspondence materials and household survey).

Rapid Wildfire Risk Assessments

Rapid assessment data collection was conducted by SFFD mitigation specialists as a census of all residential properties with a structure in the study area. Rapid assessments were conducted for 965 residential properties in summer 2021 using the standard WiRē RA, slightly modified to collect information about different types of combustible attachments, including fences, balconies, and porches/portals. The WiRē RA is composed of a set of 13 attributes that includes access to the property, background fuels and topography, vegetation near the home, and building materials.

To calculate a parcel's overall "risk score" (continuous number on a 1,000-point scale), each WiRē RA attribute is weighted, reflecting its relative contribution to parcel-level wildfire risk. 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. Refer to Appendix B for specific rapid 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 projects to date. Specifically, the cut-offs between each risk rating are the 10th, 25th, 75th, and 90th percentile of the full distribution across WiRē projects. This resulted in the following overall risk ratings: low (20–240), moderate (241–305), high (306–435), very high (436–505), extreme (506–1,000).

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). 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.

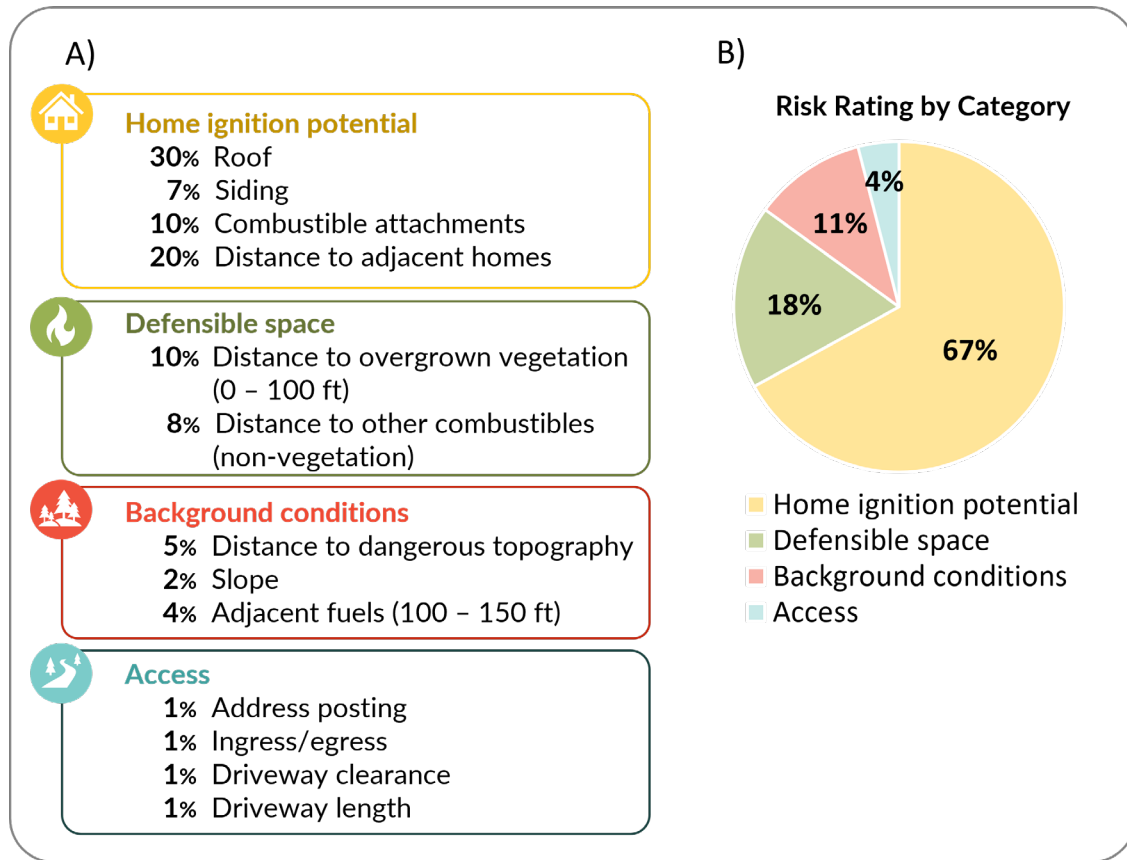


Figure 2—Wildfire Research (WiRē) Rapid Wildfire Risk Assessment. (A) Relative weight of each risk attribute within the overall risk score. (B) Relative weight of each risk category within the overall risk score.

To ensure consistent, high quality data collection, WiRē wildfire practitioners conducted a training that included a virtual orientation for those who would conduct the rapid assessments. Additionally, data were collected using ArcGIS Collector.² A standardized reference sheet for data collectors was available for use in the field (refer to Appendix B for the Assessor Reference Guide).

All parcel-level assessments were conducted by four members of SFFD and were conducted on all residential properties in the study area unless access was blocked by a gated driveway or posted with no trespassing signage. While environmental and situational variables may occasionally affect the rapid assessment data collection process, SFFD is confident that the rapid assessments collected for this project provide an accurate representation of wildfire risk to the parcels in the Santa Fe study area. In instances when the mitigation specialist could not observe a risk attribute, the specialist selected “unknown/not observed.” During data processing, these responses were assigned the highest risk score. For this project, many of the responses to the proximity to adjacent home question were coded as “unknown/not observed.”

² Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Household Survey

The household survey is designed to collect a range of social data related to how residents in the study area live with the risk of wildfire. Some questions are repeated in every project using the WiRē Approach. Other questions intended to gain specific information of local interest are modified through iterative processes between WiRē and our practitioner partners. In this case, WiRē and SFFD met virtually to step through the household survey, and then subsequently iterated drafts were made until we settled on a final version.

The household survey was mailed to the owners of all the properties for which the WiRē RA was conducted.³ Household survey data were collected using a modified Dillman approach⁴ that includes three mailings after the initial letter announcing project activities and the data collection efforts (refer to table 1 for survey 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 1 month after the initial survey packet. The final mailing was a second complete survey packet with an updated cover letter mailed to nonrespondents approximately 1 month after the reminder postcard. The household survey administration process resulted in 419 completed surveys for a 45.6% response rate. Results from the household survey can be found in Appendix E.

Table 1—Timing of the household survey administered to residents in the study area by the City of Santa Fe Fire Department and the Wildfire Research (WiRē) to collect information related to wildfire risk.

Mailing	Date of Mailing
Initial letter	12/01/2020
First survey package	06/25/2021
Postcard reminder	07/15/2021
Second survey package	11/10/2021

³ 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 rapid assessments conducted.

⁴ For details, see: Dillman, Don A. 2000. *Internet and mail surveys: The tailored design method*, 2000. New York: John Wiley. 480 p.

Paired Rapid Assessment and Household Survey Data

The data from the 965 WiRē RAs and 419 household surveys were compiled into a dataset containing three categories of information:

1. Properties for which we have both WiRē RAs and household surveys (411 records),
2. Properties for which we have only a WiRē RA (554 records), and
3. Properties for which we have only a household survey (8 records).

The paired rapid assessment and household survey data were analyzed, producing the results presented below.⁵

⁵ Any differences between the numbers reported here and the Comparison of Wildfire Research (WiRē) Rapid Assessment and Household Survey (Appendix D) should be minor and the result of rounding.

A COMPARISON OF RISK ASSESSMENT: RESULTS OF THE WiRē RAPID ASSESSMENT AND HOUSEHOLD SURVEY

In this section, we present the risk assessment results from the WiRē RA and the household survey. First, we present overall wildfire risk from all rapid assessments in the study area, and then we focus on the properties for which we have both rapid assessment and household survey data (“paired data,” refer to fig. 3) to compare the professional risk ratings to the self-assessed risk ratings.

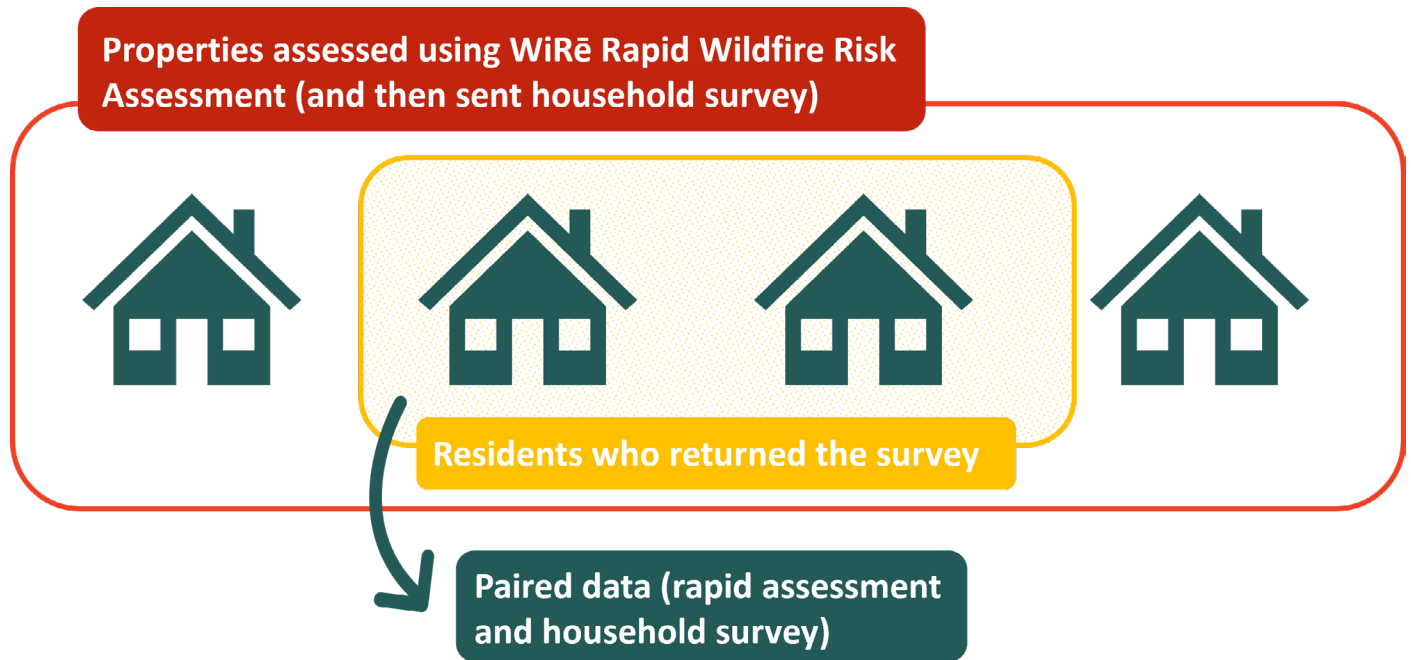


Figure 3—Representation of the rapid assessment and household survey data collected in the Santa Fe, New Mexico, study area in 2020–2021, which combine to produce the paired data.

Community Risk: Results of the WiRē Rapid Assessment

A total of 965 parcels were assessed by SFFD using the WiRē RA. These parcels were assessed as low risk (28%), moderate risk (24%), high risk (45%), very high risk (2%) or extreme risk (1%). For more details, refer to Appendix C, table 1.1.

Rapid Assessment Attributes: Observed in WiRē Rapid Assessment vs. Self-Assessed by Household Survey Respondents

The results presented below are based on data for which we have a rapid assessment paired with a household survey (N = 411) (Appendix D). In other words, the data used in this section only represent properties for which a household survey was completed and there is an associated WiRē RA. The WiRē RA and household survey data were compared by looking at the overall wildfire risk rating and the results for each risk attribute. The household survey asks residents in the study area to evaluate their property using the same attributes as the

WiRē RA, which allows for this comparison. 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 were asked to evaluate their property’s risk for each of 13 risk attributes evaluated in the WiRē RA. After doing this, they were asked to provide an overall assessment of their property’s overall wildfire risk taking into account these 13 risk attributes. The survey question provided five response options: low, moderate, high, very high, or extreme risk. The survey’s overall risk rating scale matches the rapid assessment overall risk rating scale; however, unlike the survey overall ratings, the rapid assessment overall ratings were calculated as the sum of each individual risk attribute score.

There is no clear trend of over- or underestimation of risk when comparing overall risk ratings reported by survey respondents to the observed WiRē RA data. Pairing these data demonstrates that survey respondents reported an overall risk rating lower than their parcel’s associated WiRē RA overall risk rating for 33% of the parcels, higher for 40% of the parcels, and the same for the remaining 27%. Fewer survey respondents (9%) rated their parcel as low risk than was observed in the WiRē RA data (30%). The majority (53%) of survey respondents rated their parcel as moderate risk, more than double the number of parcels with moderate risk in the WiRē RA data (23%). Almost one-third of survey respondents rated their property as high risk (29%), whereas WiRē RA data placed the greatest number of parcels in this category (45%). Both data sources rated few parcels as having very high or extreme risk, with slightly more survey respondents rating their home as having very high (6% vs 2%) and extreme risk (3% vs 1%) compared to the WiRē RA data (refer to fig. 4).

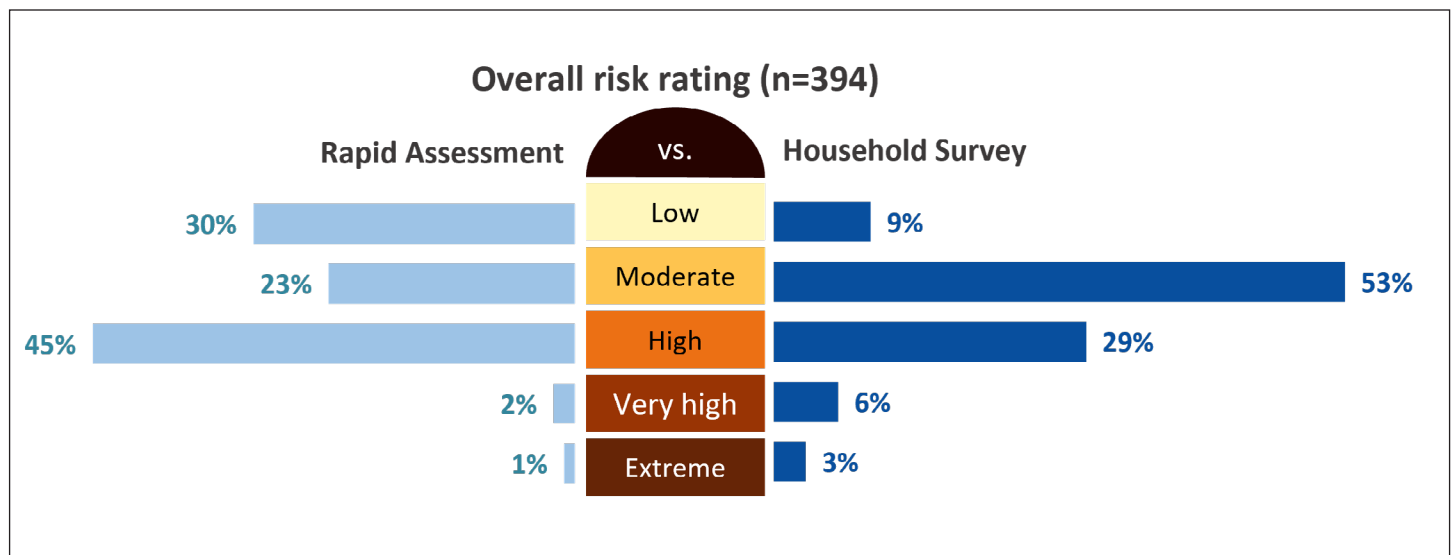


Figure 4—Distribution of overall risk rating. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRē) Rapid Assessment data in 2021. Represents 394 paired household survey and rapid assessment data.

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 building materials play a role in the ignitability of a structure.

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. Given that many homes' roofing is made of multiple materials, homeowners were asked to identify their home's most vulnerable roofing material to fire.

Both the survey respondent and WiRē RA data show that most roofs were made of noncombustible materials, at 98% and 99.7%, respectively (refer to fig. 5).

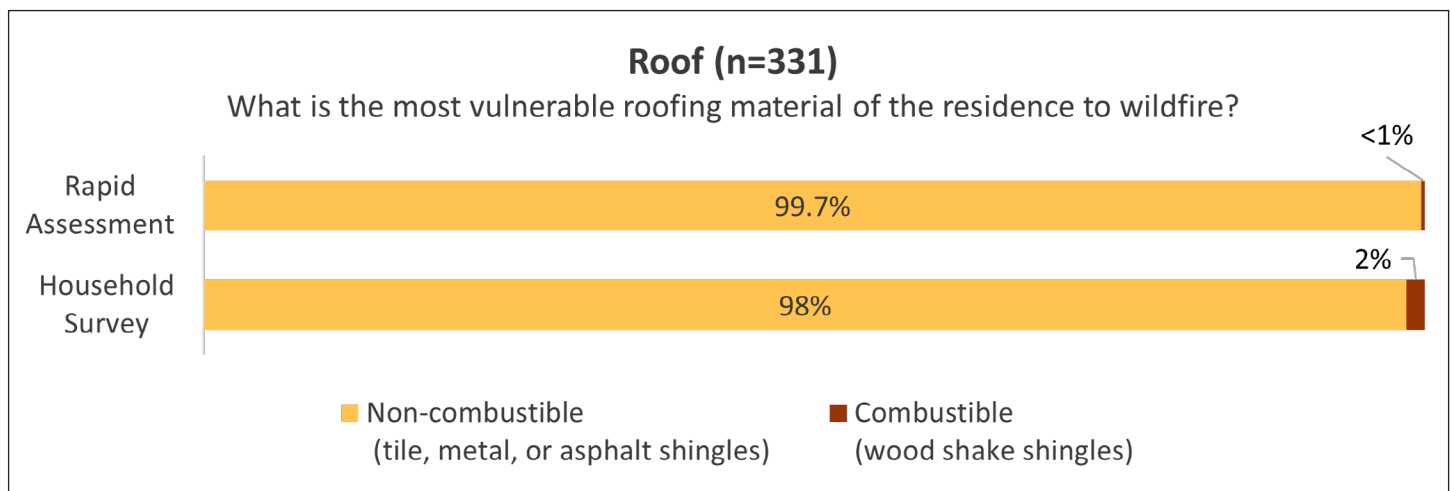


Figure 5—Combustibility of residential roof type. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRē) Rapid Assessment data. N = 396 responses to this survey question.

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 unmaintained wood siding that may have more spaces 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, heavy timbers, maintained wood); or high combustion-risk materials (vinyl, unmaintained wood, or other ember-receptive siding). Given that many homes' siding is made of multiple materials, homeowners were asked to identify their home's most vulnerable siding material to fire.

Most survey respondents (85%) reported that their home's siding was noncombustible, similar to the WiRē RA data, which categorized 99% of homes' siding as noncombustible. Some survey

respondents (13%) reported log or heavy timber siding, whereas the WiRē RA placed less than 1% of homes in that category. Very few survey respondents (2%) or WiRē RA data (1%) reported homes with wood or vinyl siding (refer to fig. 6).

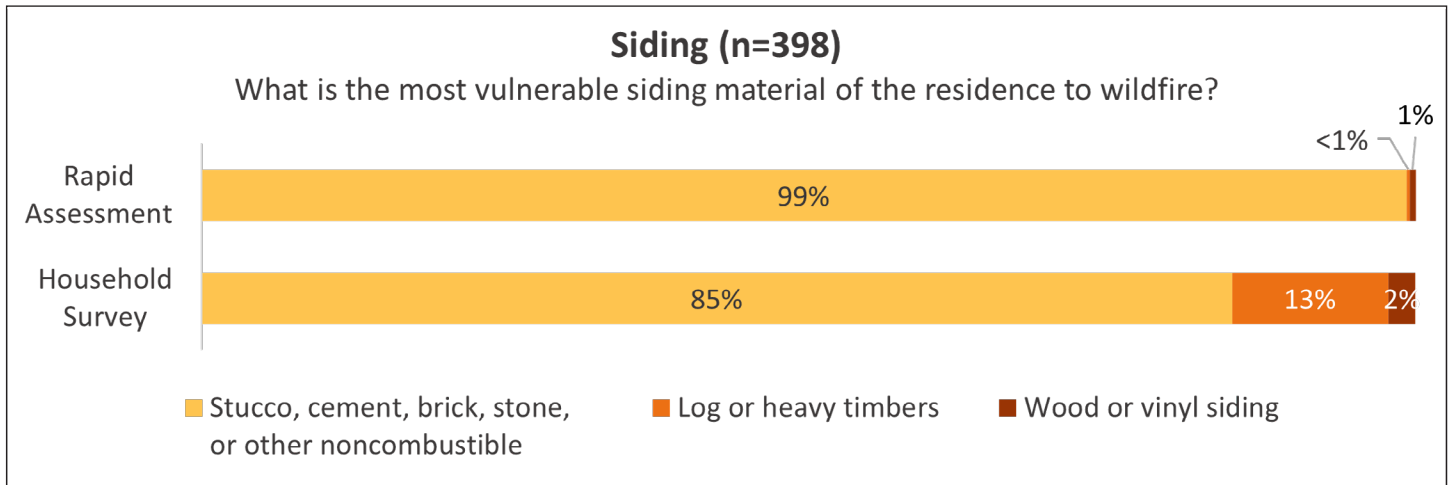


Figure 6—Residential exterior siding type, categorized by material into low, medium, and high-risk categories. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRē) Rapid Assessment data. N = 398 responses to this survey question.

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, porch/portal, and fence.

Generally, survey respondents (75%) were more likely to report a combustible attachment than the WiRē RA (59%; refer to fig. 7a), including for combustible balconies, decks, and porches/portals (refer to fig. 7b-d), but not for combustible fences (refer to fig. 7e). Combustible fences were the most common type of attachment found in the WiRē RA data, whereas survey data were most likely to report a combustible porch/portal (refer to fig. 7e and 7d, respectively).

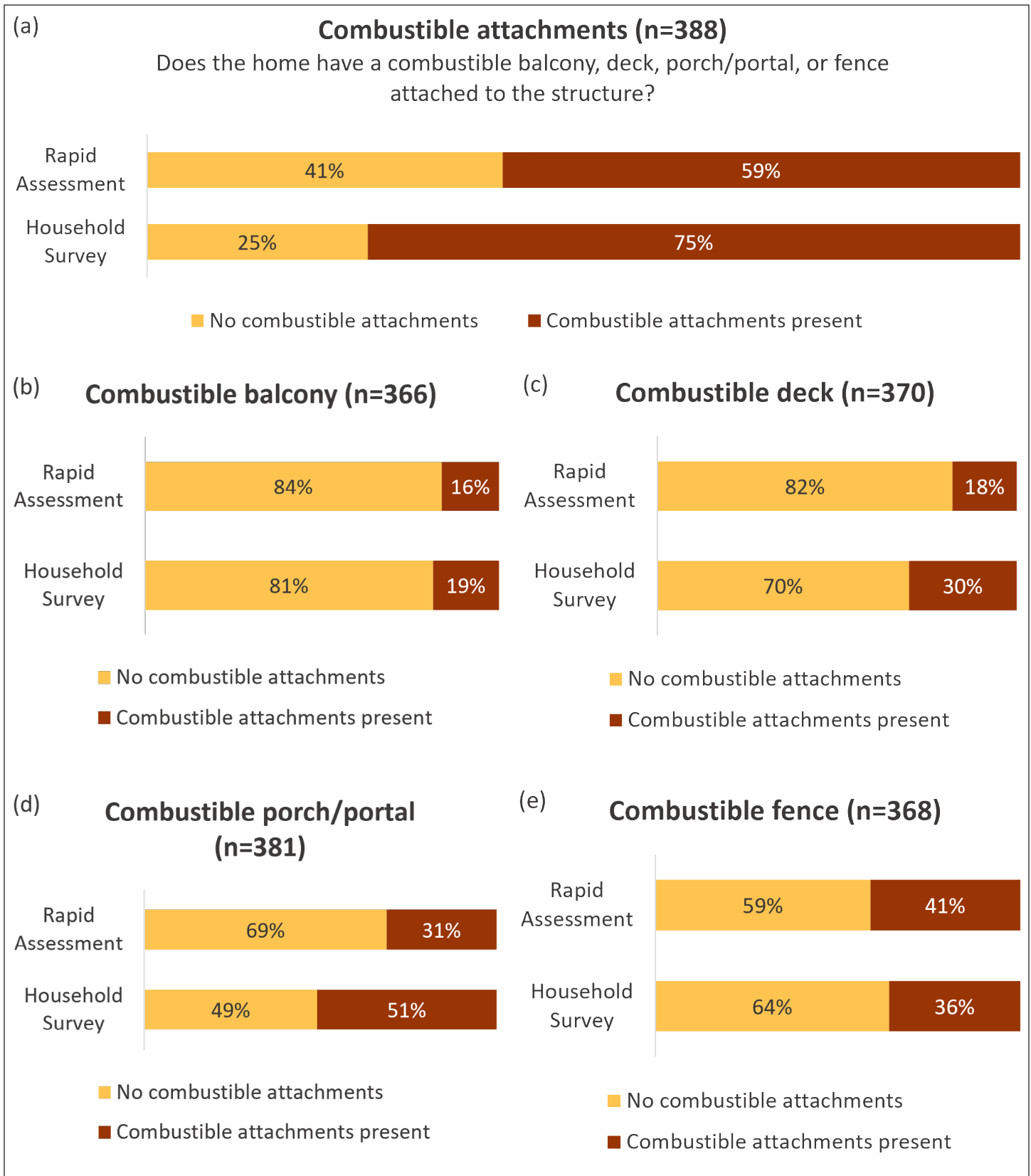


Figure 7—Presence or absence of combustible attachments: (a) in general, (b) combustible balcony, (c) combustible deck, (d) combustible porch/portal, and (e) combustible fence. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico study area, and paired Wildfire Research (WiRē) Rapid Assessment data. N = 366–388 responses to this survey question.

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 proximity are more likely to result in home-to-home ignition. In conflagration events, homes are both the recipients of fire and the drivers of fire. Parcels were assessed on the proximity of homes to nearby structures.

Survey respondents estimated the proximity of their homes to their closest neighbor. Almost two-thirds (60%) reported that their home was more than 100 feet from their closest neighbor, 31% reported a distance of 30 feet to 100 feet, 6% reported a distance of 10 feet to 29 feet, and the remaining survey respondents (2%) reported less than 10 feet between their home and their neighbor’s home. Data from the WiRē RA show fewer homes (44%) more than 100 feet from their neighbors, more homes (48%) 30 feet to 100 feet of distance, and a fairly similar number compared to the survey respondents in the categories of 10 feet to 29 feet (6%) and less than 10 feet (2%; refer to fig. 8).

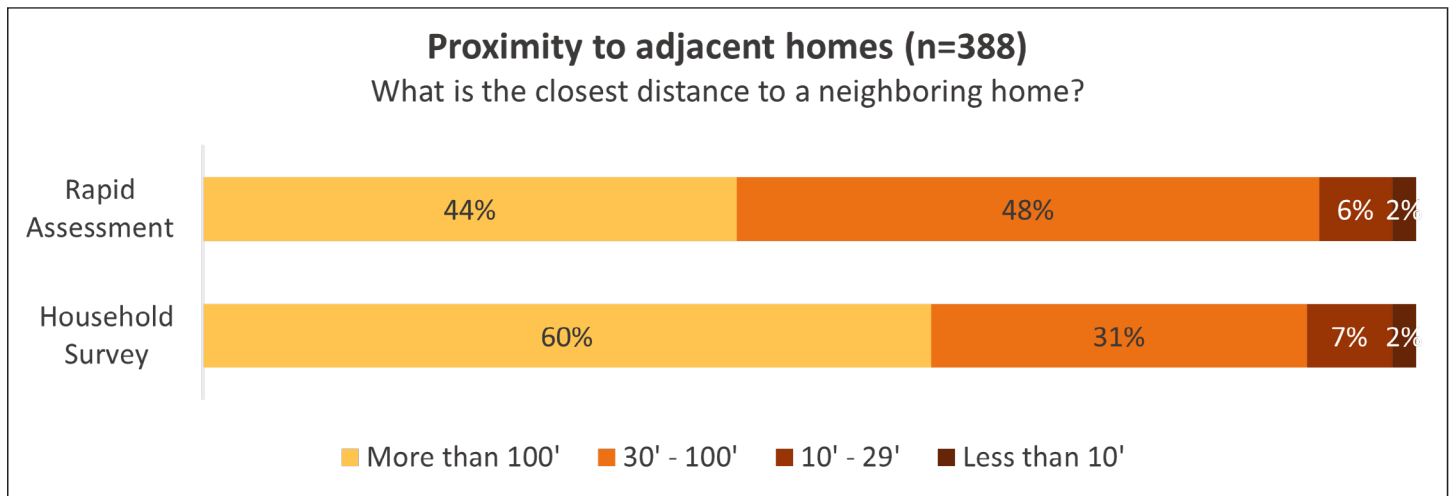


Figure 8—Proximity to adjacent homes, categorized by closest distance to neighboring home. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRē) Rapid Assessment data. N = 388 responses to this survey question.

Defensible space

Home ignition is affected by the presence of or direct contact with vegetation and other combustible materials that 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: defensible space

The presence of fuels within 100 feet of the home increases risk of wildfire damage to the home. Particularly flammable or abundant vegetation near the home may ignite and spread fire to the home. Defensible space was assessed by the proximity of the home to vegetation categorized as overgrown, dense, or unmaintained.

The defensible space attribute showed one of the largest differences between survey respondent and WiRē RA data. The parcels of survey respondents fell into four categories of distance between the home and the nearest area of dense or overgrown vegetation. Thirty-five percent of survey respondents reported more than 100 feet of defensible space, 37% reported 30 feet to 100 feet, 24% reported five feet to 29 feet, and 5% reported less than 5 feet of defensible space. In contrast, the WiRē RA data reported 1% of parcels as having more than 100 feet of defensible space, and just 8% as having 30 feet to 100 feet of defensible space. Most parcels (71%) were categorized during the WiRē RA as having 5 feet to 29 feet of defensible space, with the remaining 20% rated as having less than 5 feet of defensible space (refer to fig. 9).

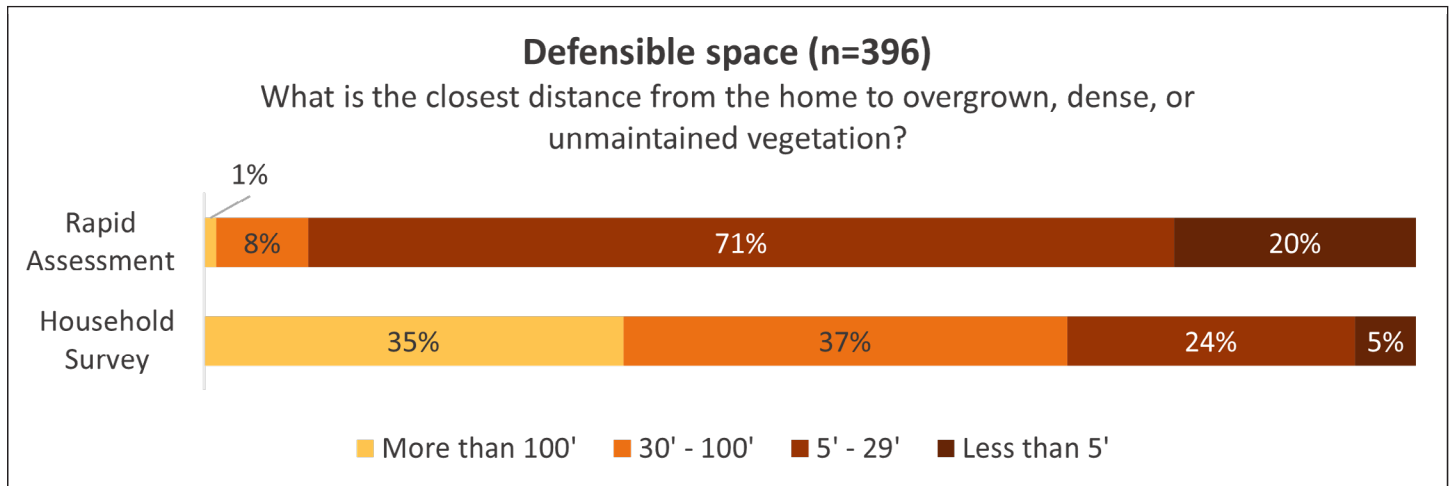


Figure 9—Defensible space, categorized by distance between the home and dense vegetation. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRē) Rapid Assessment data. N = 396 responses to this survey question.

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. Such items were reported on by survey respondents and observed during the WiRē RA.

This attribute also indicated differences in the perceptions of survey respondents and wildfire professionals carrying out the WiRē RA. Only 9% of survey respondents reported less than 5 feet between their home and combustible items other than vegetation. In contrast, WiRē RA data indicated nearly half (51%) of homes were less than 5 feet from nonvegetative combustibles (refer to fig. 10).

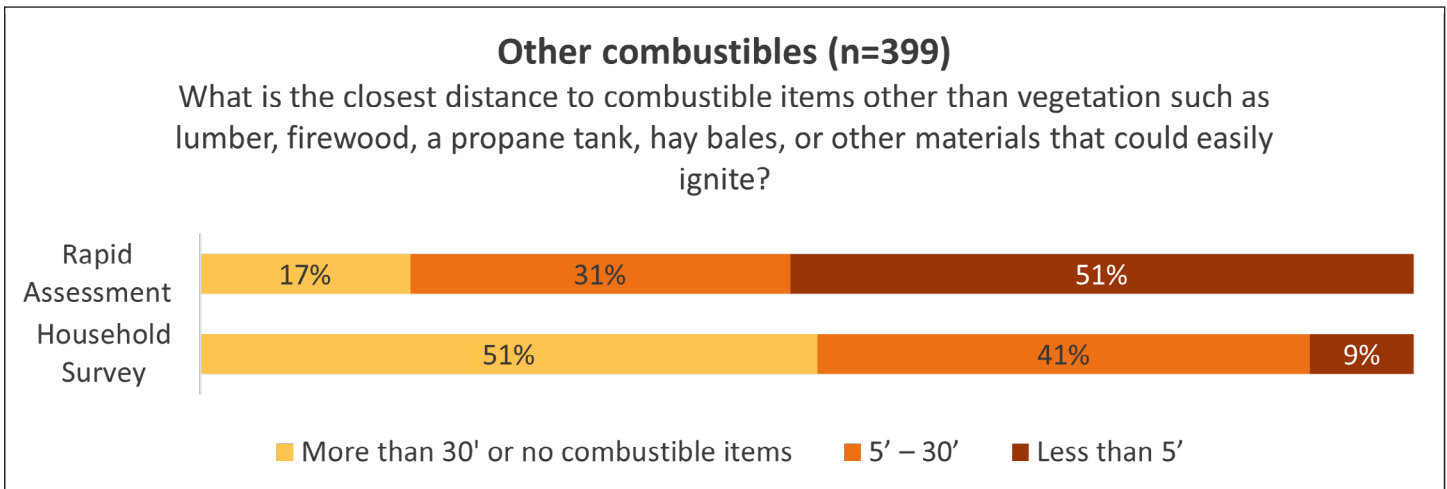


Figure 10—Other combustible materials, categorized by closest distance from home to combustible items other than vegetation. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRē) Rapid Assessment data. N = 399 responses to this survey question.

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 distance of the home to steep or dangerous topography at distances of less than 50 feet, 50 feet to 150 feet, and more than 150 feet.

Many survey respondents reported their homes were farther away from dangerous topography than the WiRē RA data reported. Over half (53%) of survey respondents reported that their homes were more than 150 feet from dangerous topography, and another 31% reported their homes were situated at a distance 50 feet to 150 feet away from dangerous topography. The WiRē RA data show that less than one-third (28%) of homes were located more than 150 feet from dangerous topography, 45% of homes were situated 50 to 150 feet from dangerous topography, and 27% were situated less than 50 feet from dangerous topography (refer to fig. 11).

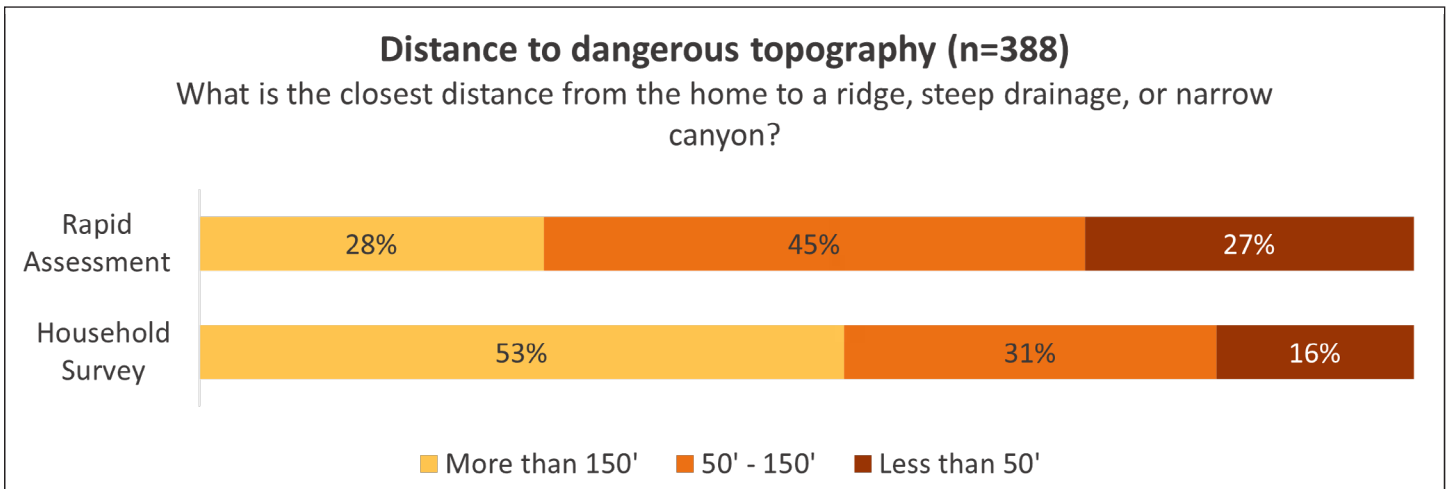


Figure 11—Closest distance from the home to dangerous topography (e.g., a ridge, steep drainage, or narrow canyon). Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRē) Rapid Assessment data. N = 388 responses to this survey question.

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.

A little more than half (55%) of survey respondents reported the slope of their properties as moderate. In contrast, the WiRē RA data categorized fewer parcels as having a moderate slope (37%) and more as having a gentle slope (57%; refer to fig. 12).

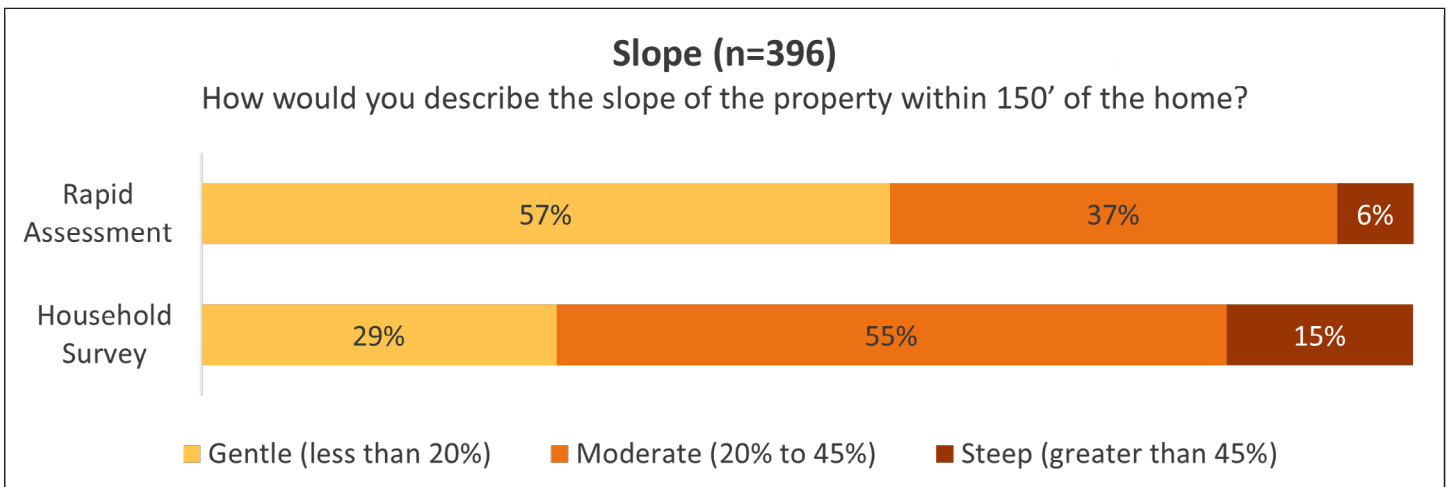


Figure 12—Overall slope of property. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRē) Rapid Assessment data. N = 396 responses to this survey question.

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. Three categories of vegetation are used: light (grasses), medium (light brush and/or isolated trees), and dense (dense brush and/or dense trees).

Survey respondents (61%) and the WiRē RA data (74%) placed most parcels in the medium vegetation category. Slightly more survey respondents placed their parcel in the dense vegetation category than did the WiRē RA data (refer to fig. 13).

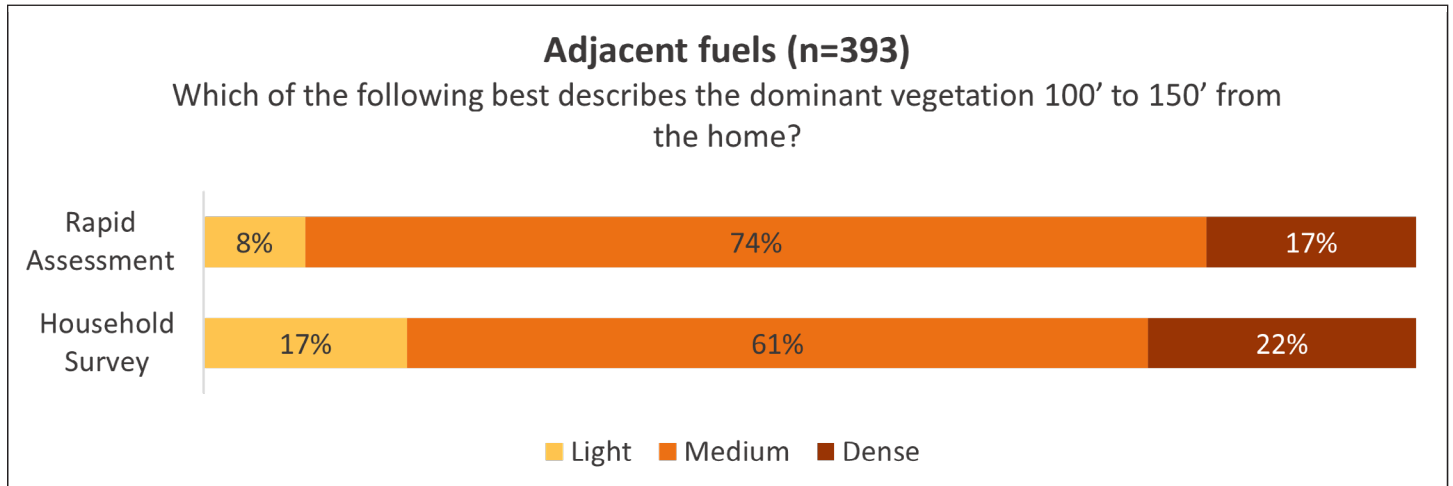


Figure 13—Adjacent fuels, categorized by the density of dominant vegetation 100 to 150 feet from the home. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRē) Rapid Assessment data. N = 393 responses to this survey question.

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 is posted and visible from both directions.

Half (50%) of survey respondents reported that their address fully met the standard and 45% said it was visible from the road but did not meet all the standards. In contrast, the WiRē RA data reported most (82%) address signs as fully meeting the standard (refer to fig. 14).

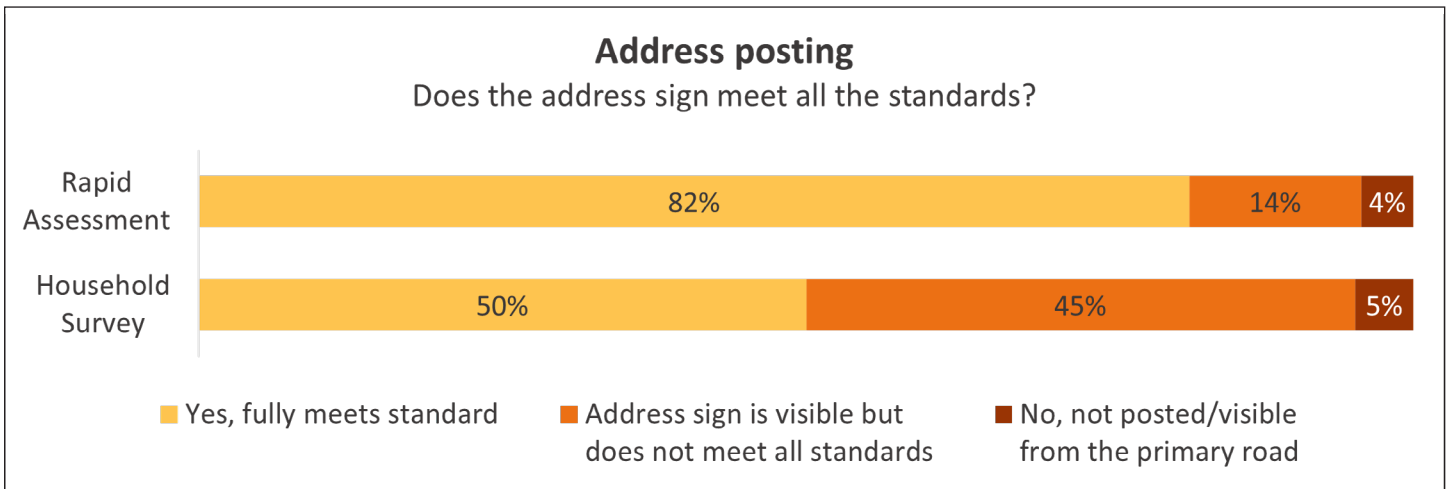


Figure 14—Characteristics of property address. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRē) Rapid Assessment data. N = 396 responses to this survey question.

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.

Survey respondents and the WiRē RA had similar estimates for the number of roads in or out of the community. While 33% of survey respondents reported at least two roads leading in and out of their communities, 42% of parcels were identified by the WiRē RA to have two or more roads out of the community (refer to fig. 15).

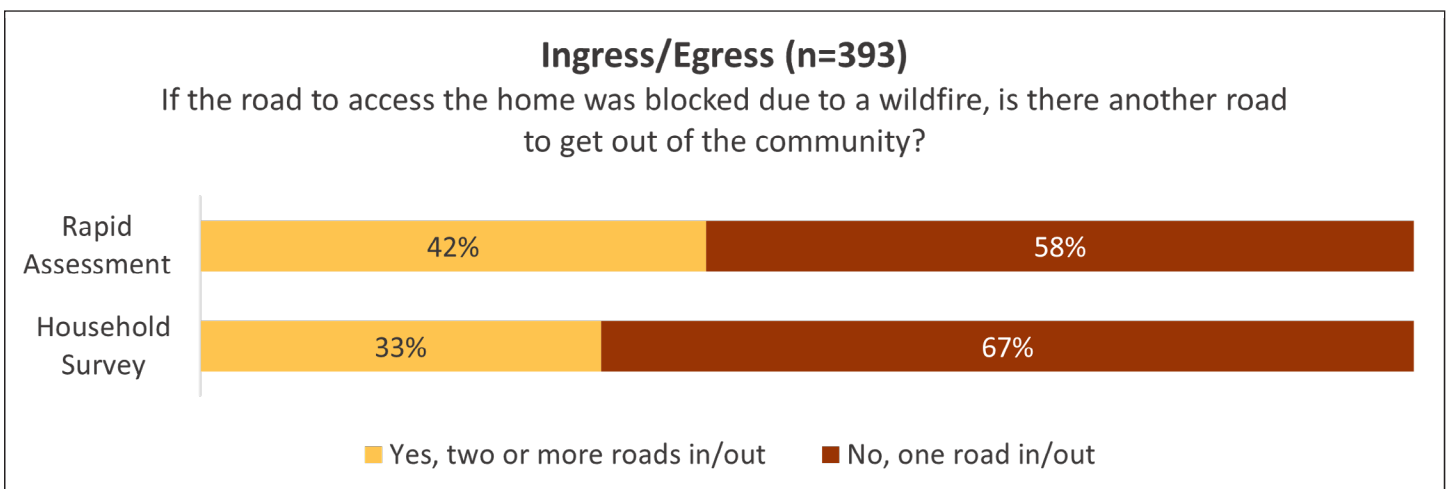


Figure 15—Number of evacuation routes in or out of community. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRē) Rapid Assessment data. N = 393 responses to this survey question.

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, length, and presence or lack of a turnaround, as well as narrow gates or low hanging tree branches. Driveway clearance is assessed based on width and is categorized as wide enough for two vehicles to pass each other (more than 26 feet wide), two cars wide (20 to 26 feet), or one car wide (less than 20 feet).

Survey respondents were slightly less likely to rate their driveway’s clearance as fully meeting standards (68%) than the WiRē RA, which categorized 80% of parcels as meeting all clearance standards. Survey respondents (27%) were more likely to report their driveway’s clearance as meeting one but not both standard, as compared to the WiRē RA (17%) ratings (refer to fig. 16).

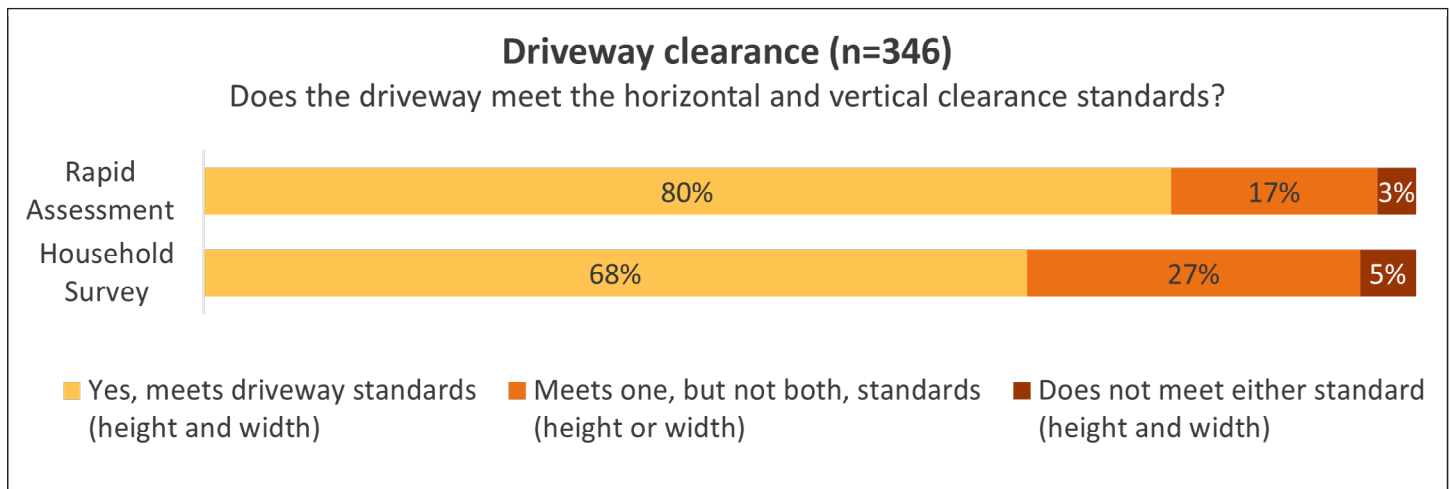


Figure 16—Width of residence driveway at its narrowest point. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRē) Rapid Assessment data. N = 346 responses to this survey question.

Risk attribute: driveway length

Similar to driveway clearance, the length of a driveway also affects the ability of fire engines to turn around and safely respond to a 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.

Differences between survey respondent and WiRē RA ratings for driveway length and turnaround are minimal. Fifty-nine percent of survey respondents reported that their driveway was less than 150 feet long, whereas the WiRē RA data found more parcels (72%) that met this criterion. A similar number of survey respondents (21%) and the WiRē RA (19%) reported driveways without adequate turnarounds (refer to fig. 17).

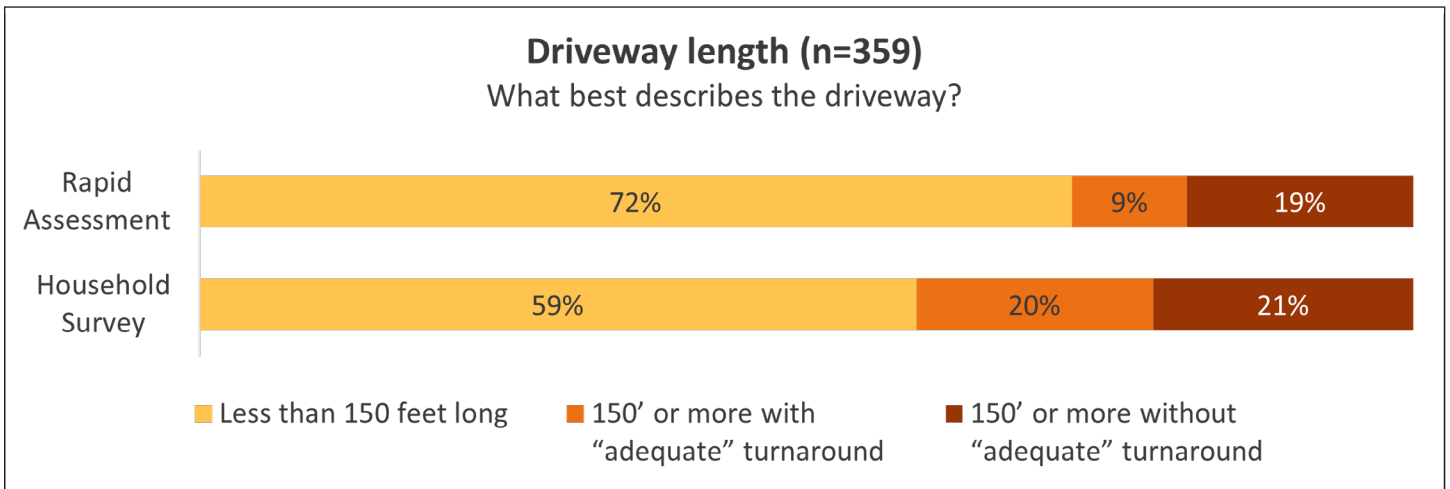


Figure 17—Driveway length and presence of turnaround. Comparison of household survey data as reported by survey respondents in the City of Santa Fe, New Mexico, study area, and paired Wildfire Research (WiRe) Rapid Assessment data. N = 359 responses to this survey question.

SOCIAL DIMENSIONS OF CITY OF SANTA FE: 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 responses).

About three-quarters (77%) of survey respondents occupy their homes in Santa Fe year-round, while 22% occupy their residence fewer than 12 months out of the year. The average year of construction of the homes in the study area was 1988, and the average year that survey respondents had moved into their homes was 2005. At the time of purchasing their home in Santa Fe, about one-third of survey respondents reported being very aware of the wildfire risk (36%), almost half reported being somewhat aware (45%), and 15% reported being unaware of the wildfire risk when they bought or began renting their home. Three percent reported not remembering how aware they were (refer to fig. 18).

Survey respondents were more likely to identify as male (57%) and the average age of survey respondents was 69 years old. Ninety percent of survey respondents held a bachelor’s degree or higher. Sixty-two percent of survey respondents were retired, 22% worked full-time, and 14% worked part-time. Three-quarters (75%) of households reported yearly incomes \$100,000 or greater.

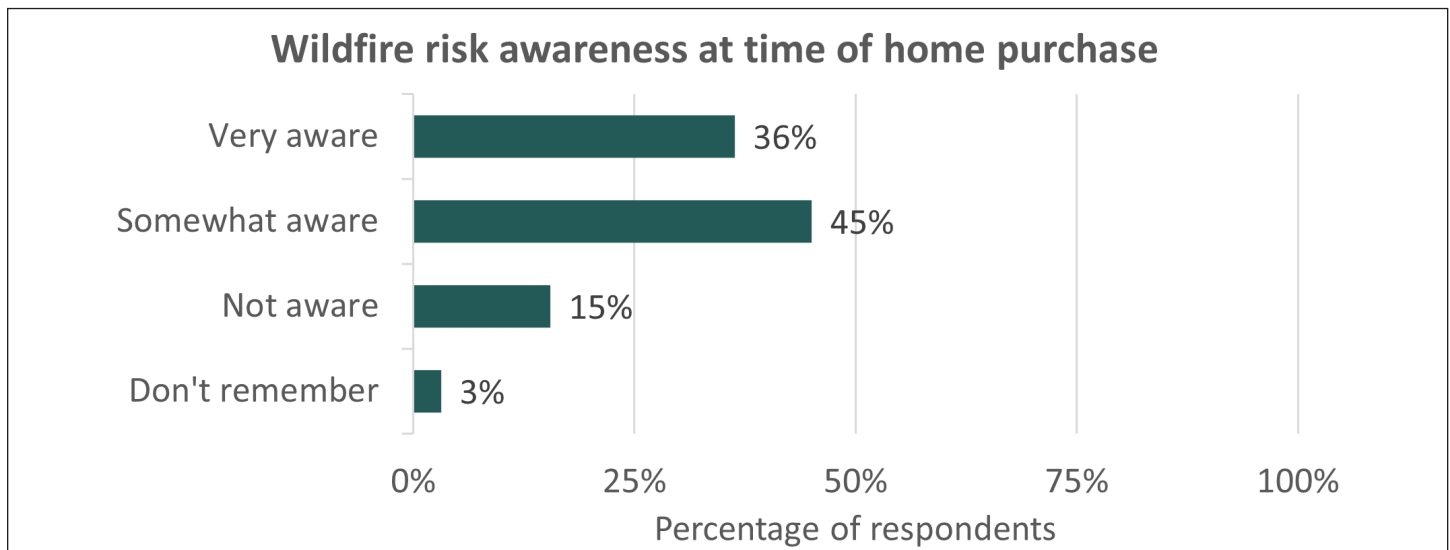


Figure 18—Respondents’ awareness of wildfire risk, when they bought or began renting their home, as reported by survey respondents residing in the study area in the City of Santa Fe, New Mexico. N = 413 responses to this survey question.

Origins of Wildfire Perceptions and Knowledge

Wildfire experience

Most respondents to this survey did not have direct experience with wildfire or resulting effects, including fire or smoke damage and needing to evacuate (refer to fig. 19).

Despite few survey respondents with direct experience of wildfire on their properties, 30% reported that a wildfire had come within 10 miles from their properties (refer to fig. 20).

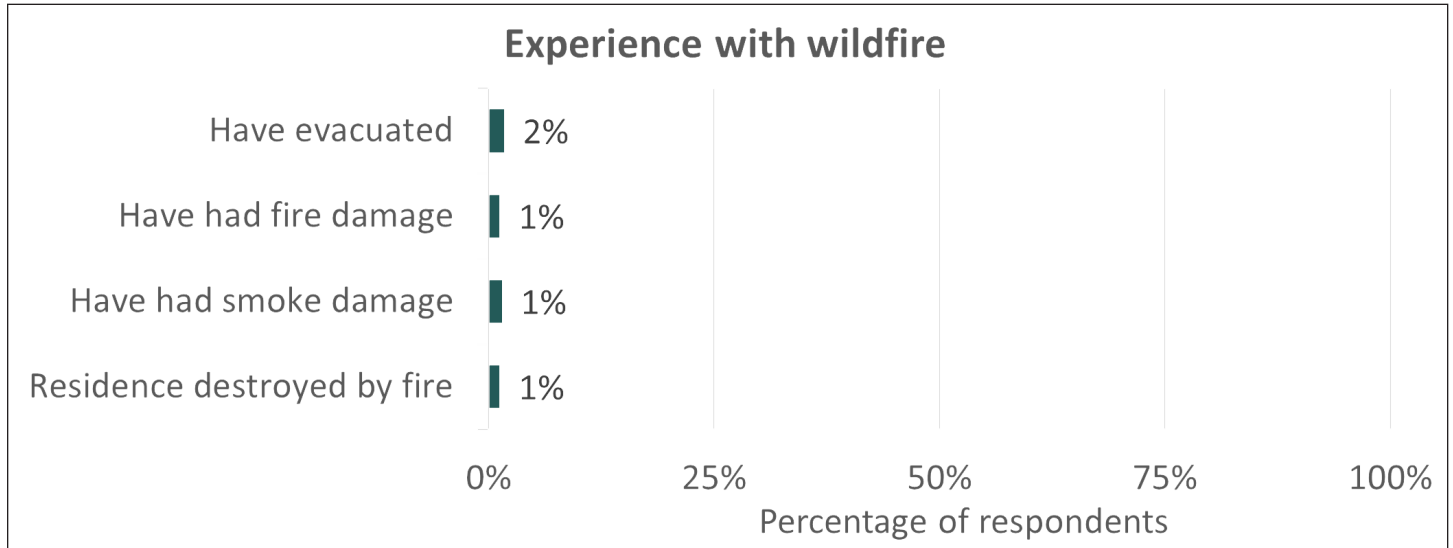


Figure 19—Respondent experience with various impacts of wildfire, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 413–416 responses to these survey questions.

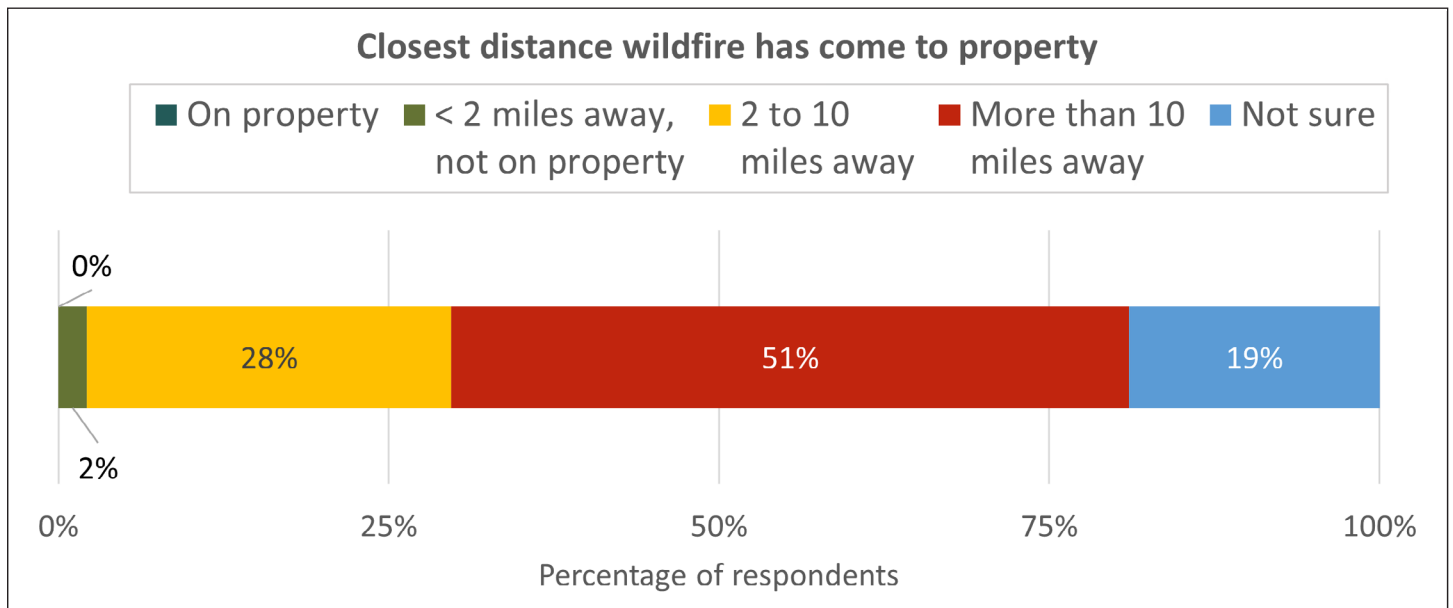


Figure 20—Respondent estimates of how close a wildfire has come to their property, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 417 responses to this survey question.

Perceptions of risk

Survey respondents were asked to consider the likelihood of the occurrence of a wildfire on their property and potential outcomes in that event. Sixty-nine percent agreed or strongly agreed with the statement, “My property is at risk of wildfire” (refer to fig. 21). However, only 2% agreed or strongly agreed with the statement, “I plan to move out of the area in the next 12 months because of wildfires.”

Despite awareness that their property is at risk of wildfire, only 11% of survey respondents reported they expected at least a 50% chance of a wildfire on their property in the next year. However, in the event of a wildfire on their property, more than half (54%) of survey respondents expected to lose their home in the next year (refer to fig. 22).

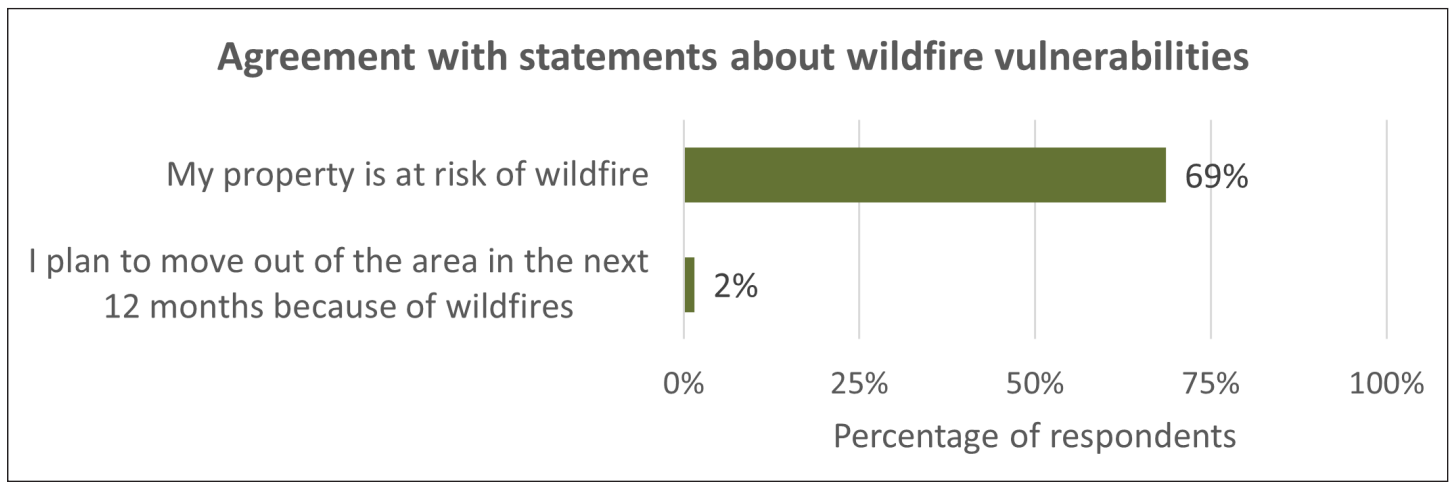


Figure 21—Agreement (“agree” or “strongly agree”) with statements about whether wildfire threatens the respondent’s property, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 396 and 398 responses to the two survey statements listed, respectively.

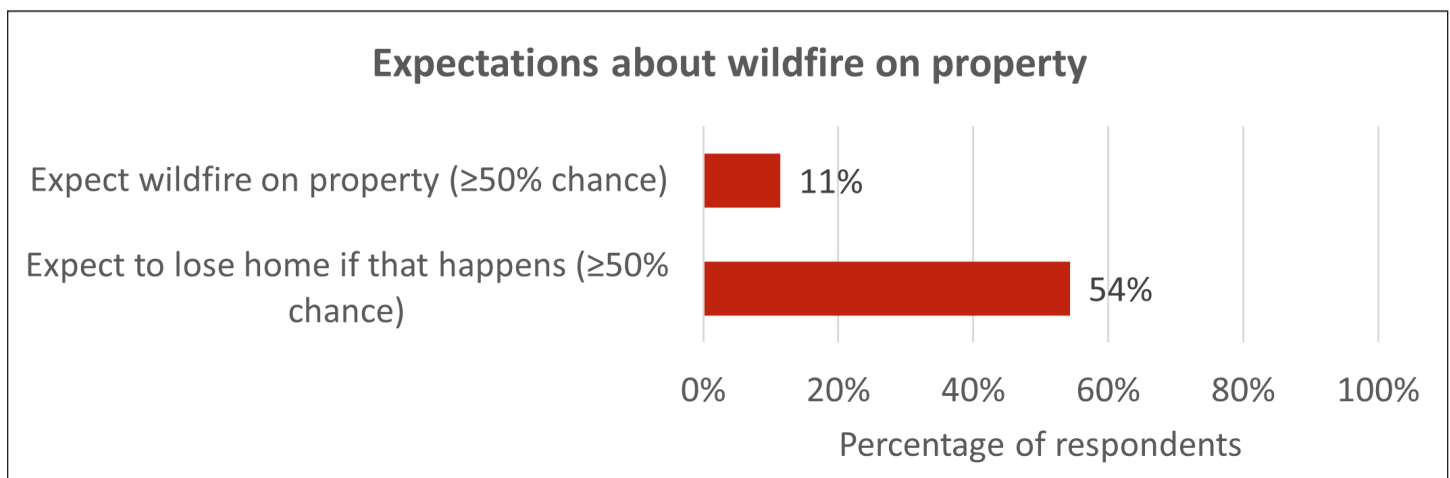


Figure 22—Estimate of the chances (> 50% chance) of a wildfire on property in the next year, and chances (> 50% chance) of losing home in that case, as reported by survey respondents residing in the study area in the City of Santa Fe, New Mexico. N = 394 and 392 responses to the two survey statements listed, respectively.

In the occurrence of a wildfire on their property, 28% of survey respondents thought it was very or extremely likely that embers would ignite their home. Similarly, 27% of survey

respondents thought ignition of their home by direct flame was very or extremely likely. Only 15% of survey respondents thought it very or extremely likely that nearby homes would ignite their home in the event of a wildfire (refer to fig. 23).

When asked to consider who would protect their home in the event of a wildfire, 29% of survey respondents thought it was very or extremely likely that the fire department would save their home, and 11% thought it very or extremely likely that they would put the fire out themselves (refer to fig. 24).

Sixty-five percent of survey respondents reported that, in the event of a wildfire on their property, it was very or extremely likely that their trees and landscape would burn, and a similar number (63%) reported it was very or extremely likely that there would be smoke damage to their homes. Fifty-four percent thought it very or extremely likely that there would be some physical damage to their homes. Notably, more respondents thought it was very or extremely likely their neighbors' homes would be damaged or destroyed (37%) than thought their own home would be destroyed (19%) or they would lose money due to loss of business or income (22%; refer to fig. 25).

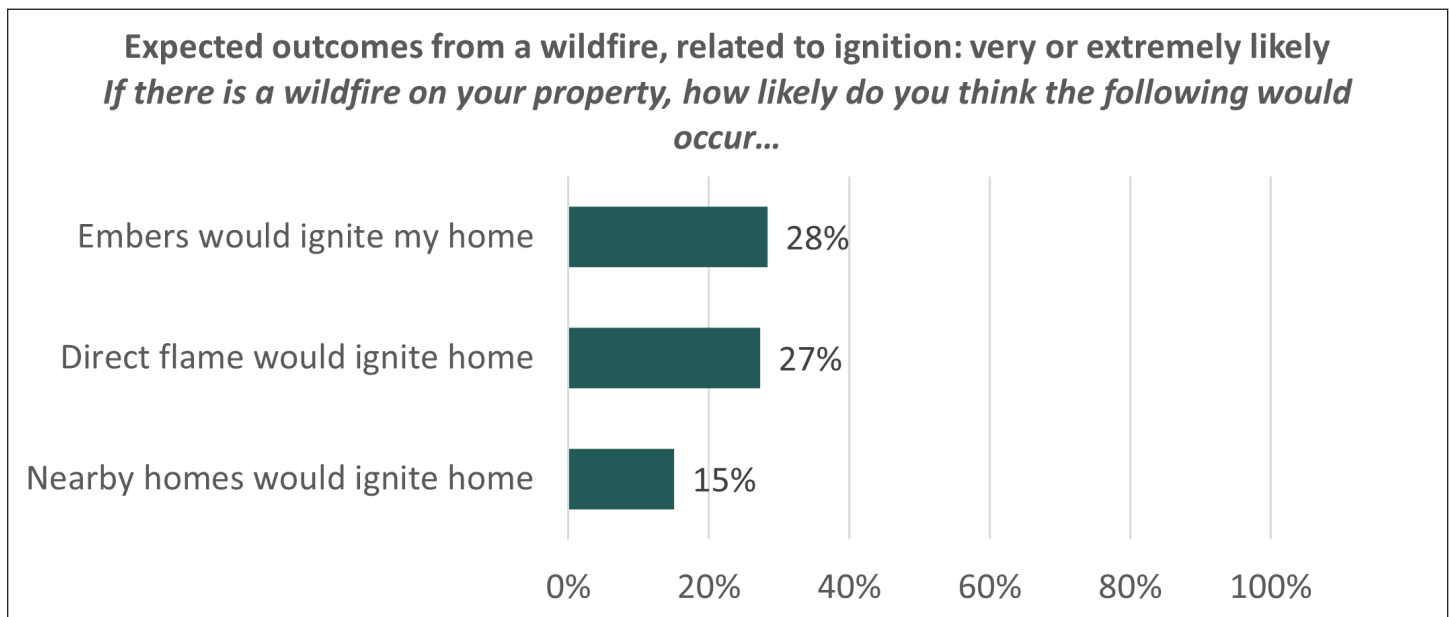


Figure 23—Percentage of survey respondents who thought the above sources of ignition were very or extremely likely, in the event of a wildfire on their property, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 387–389 responses to each survey statement listed.

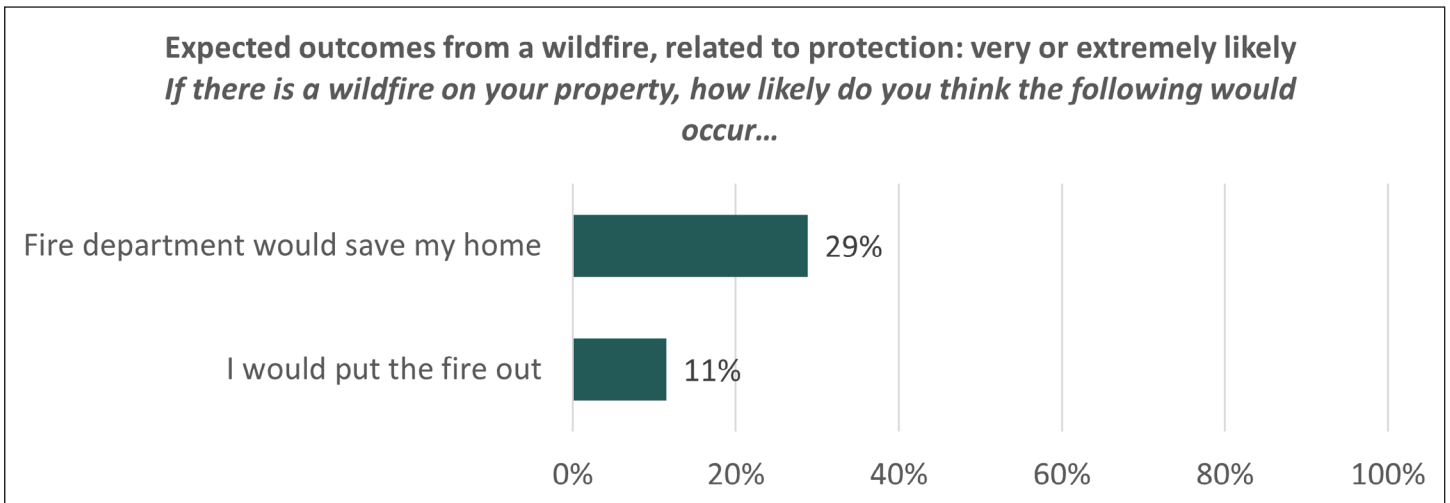


Figure 24—Percentage of survey respondents who thought the above source of protection to their home were very or extremely likely, in the event of a wildfire on their property, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 392 and 389 responses to the two survey statements listed, respectively.

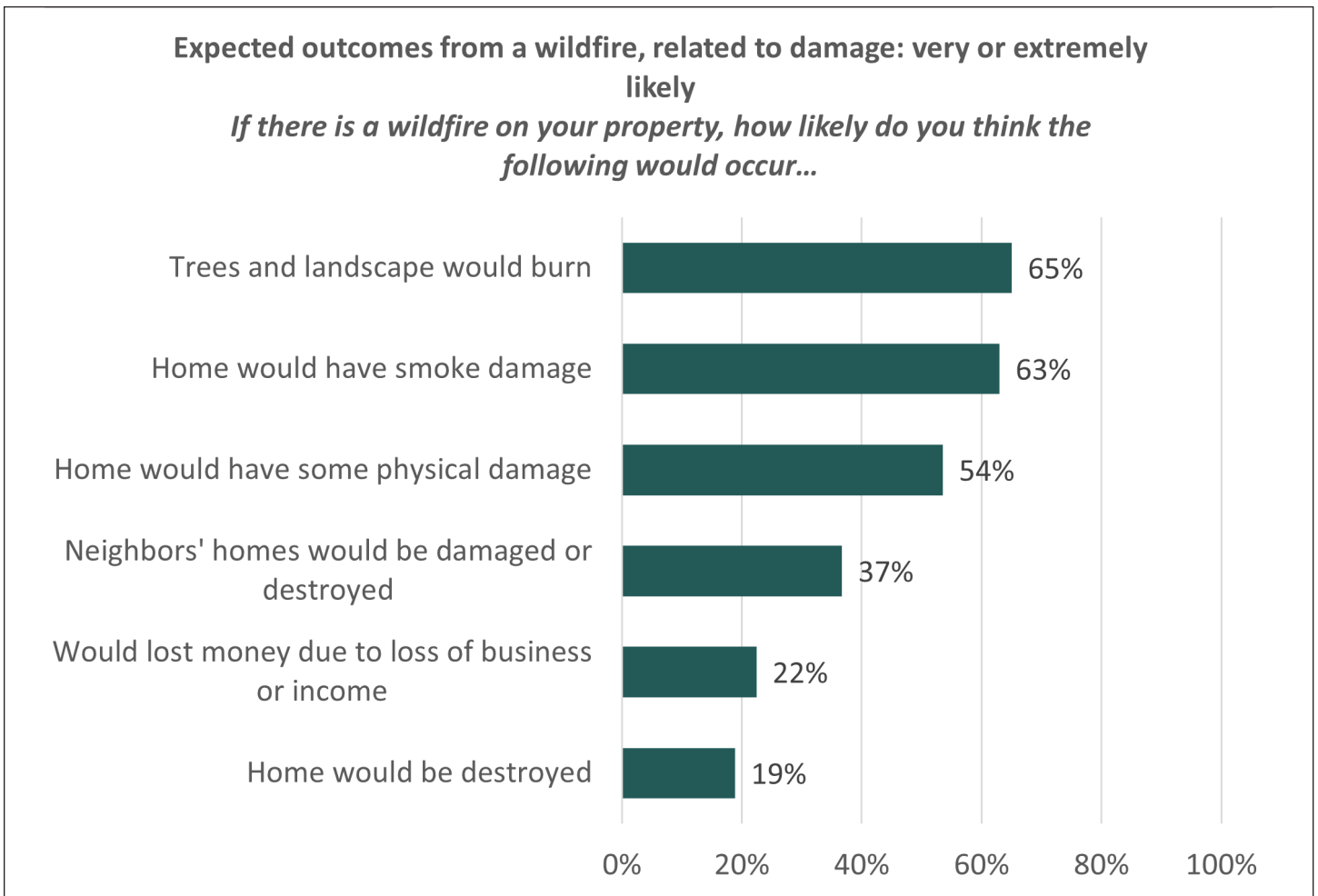


Figure 25—Percentage of survey respondents who thought the above forms of wildfire damage were very or extremely likely, in the event of a wildfire on their property, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 388–409 responses to each survey statement listed.

Over half (57%) of survey respondents reported talking to their neighbors about wildfire (refer to fig. 26). These interactions can serve to help spread information about localized risk of wildfire.

The majority of survey respondents (60%) reported that some of their neighbors have taken action to mitigate wildfire risk. Twenty-one percent reported that most of their neighbors had taken action, and 3% reported that all of their neighbors had taken action. The remaining 16% of survey respondents reported that none of their neighbors had taken action to mitigate wildfire risk (refer to fig. 27).

Survey respondents identified vegetation on their property (85%), their neighbors' properties (81%), and nearby public or undeveloped land (80%) as key contributing factors to the chance of wildfire damaging their property in the next 12 months. Half of survey respondents (51%) thought a lack of water for fire suppression could contribute somewhat or a lot to the chances of a wildfire damaging their property. A similar number (49%) thought that characteristics of their homes or other buildings would contribute to potential damage (refer to fig. 28).

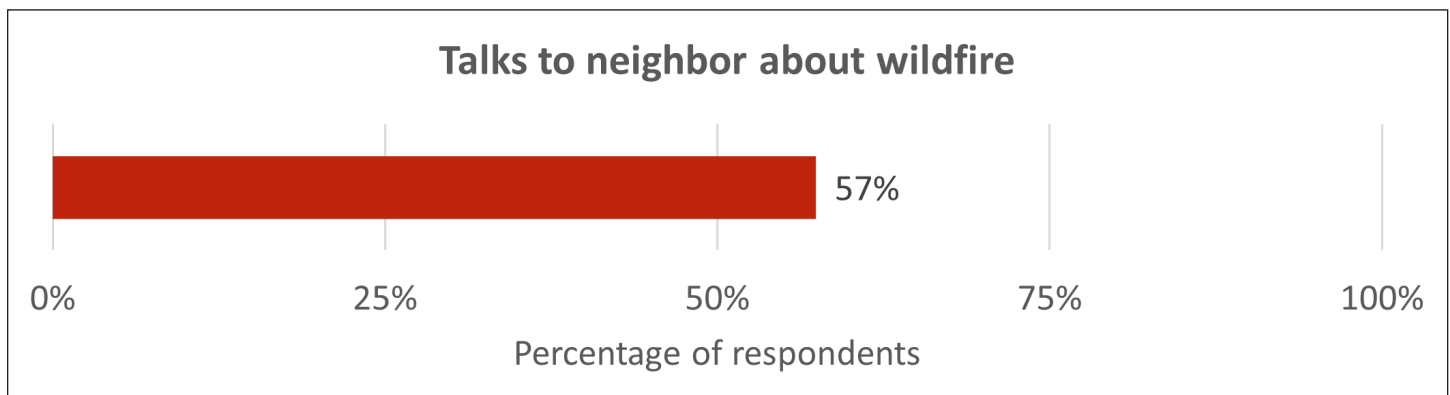


Figure 26—Percentage of survey respondents residing in the study area in the City of Santa Fe, New Mexico, who reported talking to their neighbor about wildfire. N = 404 responses to this survey question.

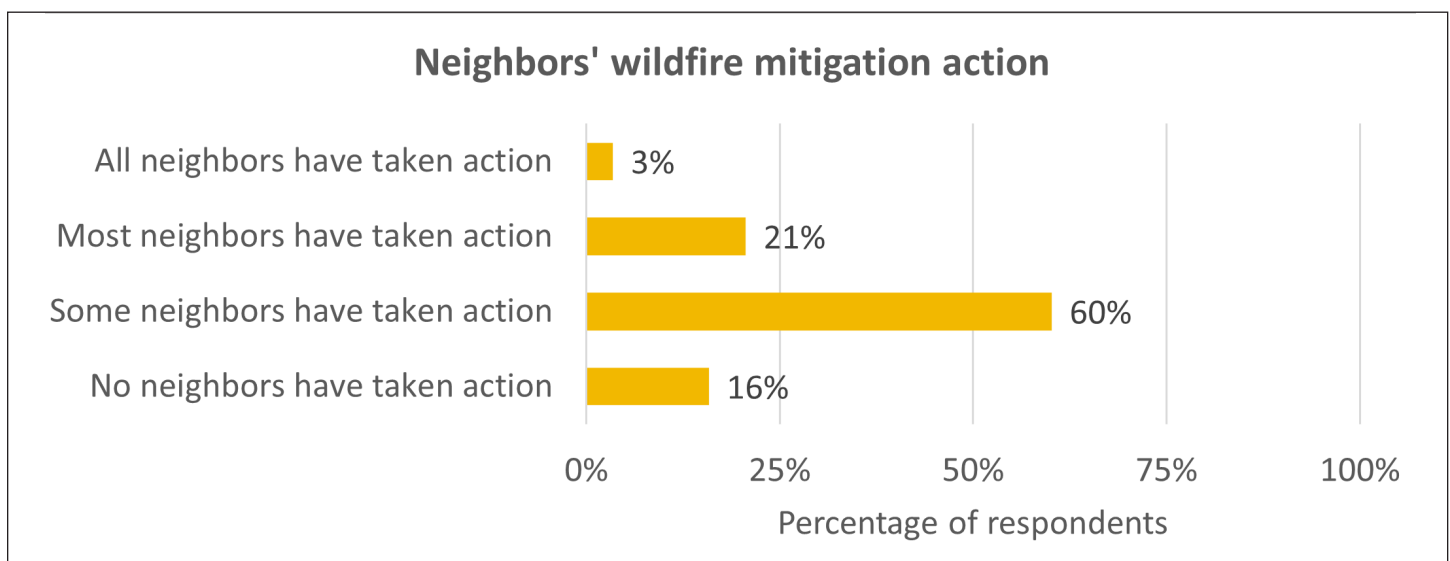


Figure 27—Respondents' estimates of how many neighbors take wildfire mitigation action, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 379 responses to these two survey questions.

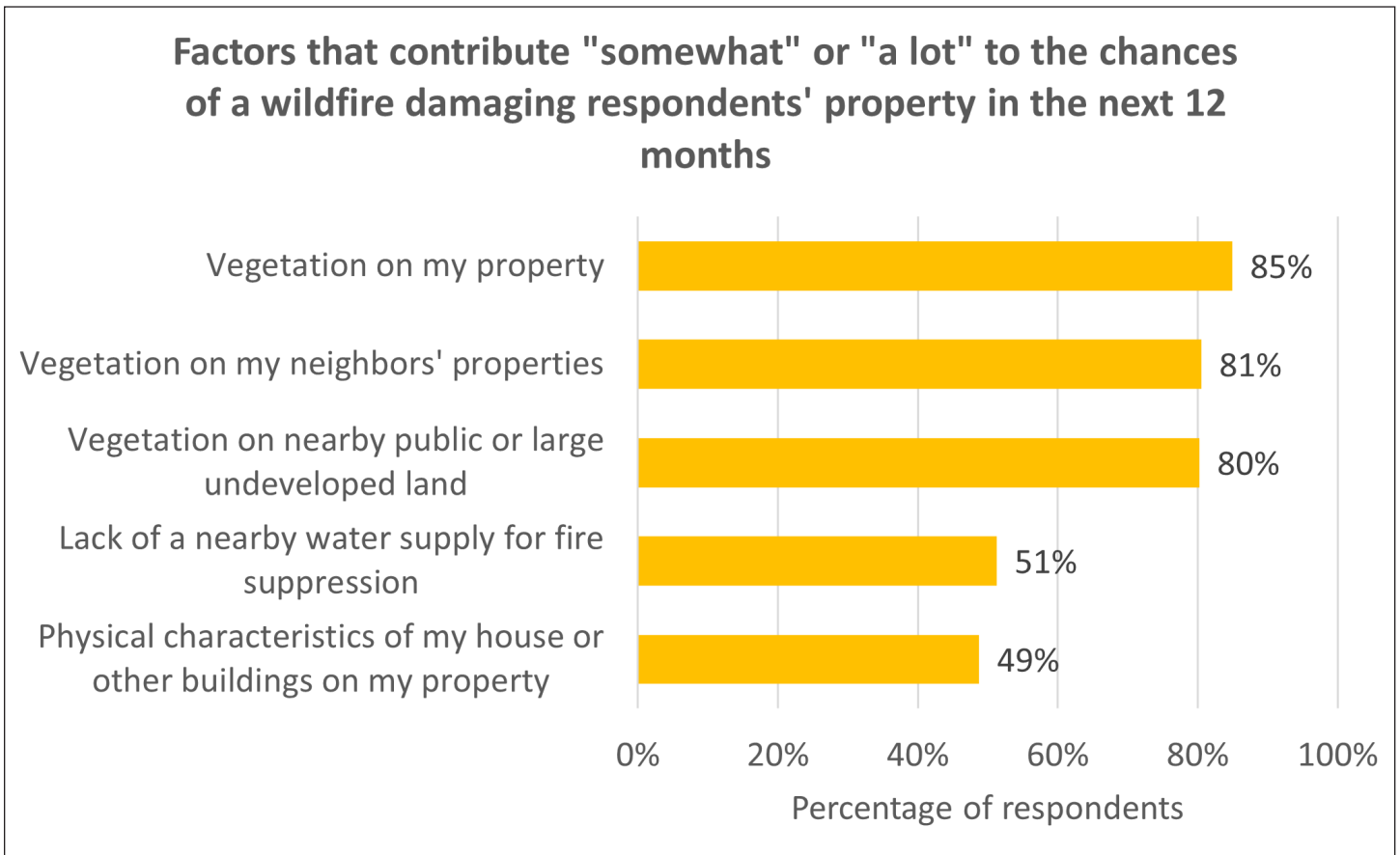


Figure 28—Percentage of survey respondents who thought the above factors contribute “a lot” to the chances of a wildfire damaging their property in the next 12 months, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 394–400 responses to each survey statement listed.

Insurance providers may play a role in shaping homeowner perceptions of risk and performance of mitigation activities. Seventy-two percent of survey respondents felt that their home was adequately insured against loss from wildfire, and 34% reported that their insurance company had provided information to reduce wildfire risk. Less than a quarter (23%) of survey respondents reported paying higher premiums due to the wildfire risk of their property. Seventeen percent of survey respondents reported being refused insurance based on wildfire risk, while 10% had been required to take some mitigation actions by their insurance providers, and 9% reported receiving a discount on premiums for performing certain mitigation actions. Six percent reported their insurance company offered private firefighting services (refer to fig. 29).

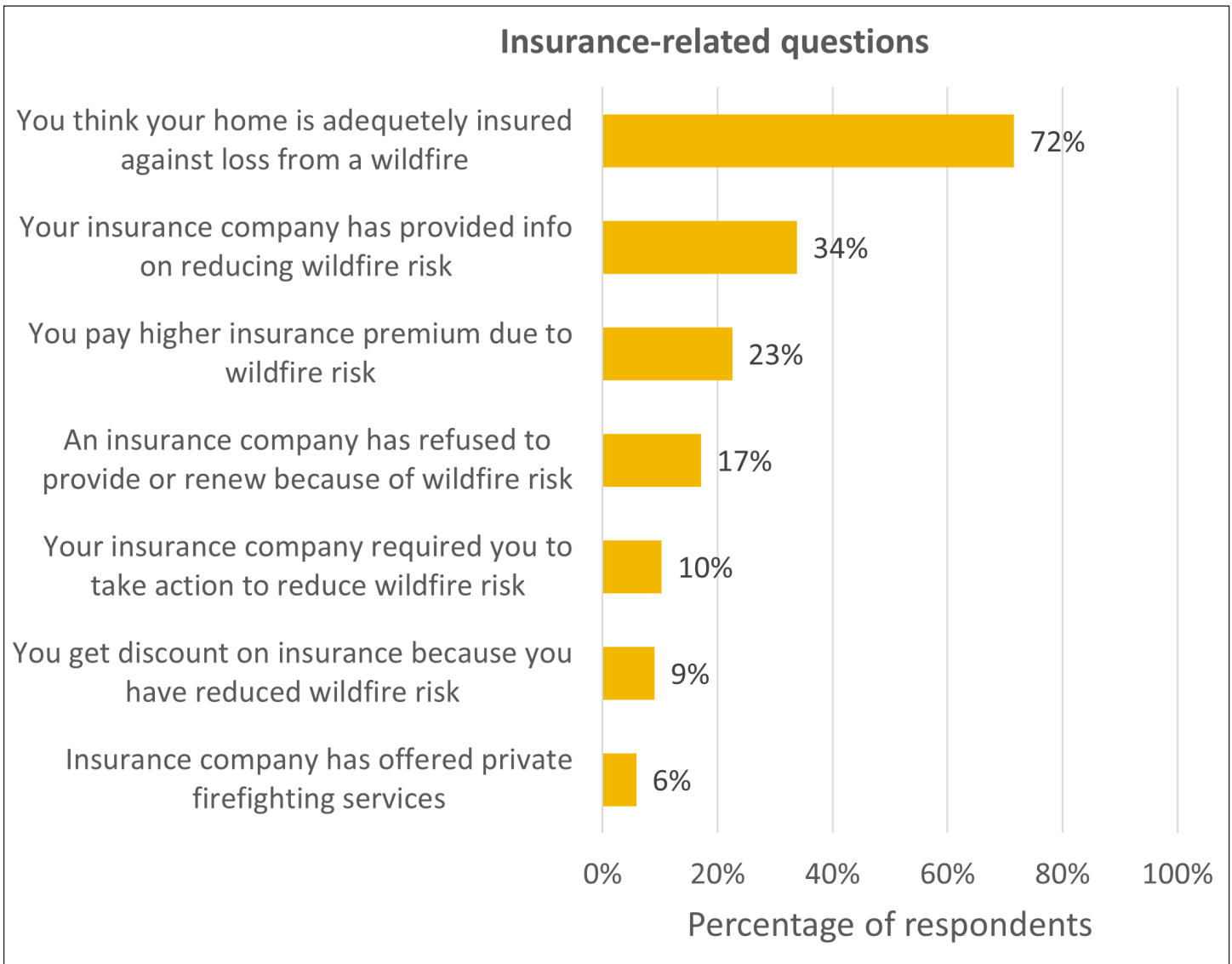


Figure 29—Respondents’ knowledge of and experience with various insurance company actions, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 408–409 responses to each statement.

Communication About Wildfire

Sources of information and reported usefulness

Survey respondents were asked to report on whether they had received information from a variety of sources and evaluate the usefulness of each of the sources they had used. In general, respondents reported receiving information from few sources. The information source survey respondents reported using most (62%) and found most useful (65%) was the City of Santa Fe Fire Department. The second most commonly used source of information reported by survey respondents were community groups (55%), which were reported as very or extremely useful by 52% of those who received information from this source. Although used by fewer survey respondents, sources such as County of Santa Fe Fire Department, Firewise USA, and Fireshed Ambassador program were reported to be very or extremely useful to those who had

received information from them (58%, 62%, and 62% found them very or extremely useful, respectively; refer to fig. 30).

Sources of wildfire risk information: Percentage of survey respondents who received information and reported usefulness of information													
Source of wildfire risk information	Received wildfire risk information	Received the information & found it very/extremely useful											
City of Santa Fe Fire Department	62%	65%	<table border="1"> <thead> <tr> <th>Legend</th> </tr> </thead> <tbody> <tr> <td>90% or more</td> </tr> <tr> <td>80% - 89%</td> </tr> <tr> <td>70% - 79%</td> </tr> <tr> <td>60% - 69%</td> </tr> <tr> <td>50% - 59%</td> </tr> <tr> <td>40% - 49%</td> </tr> <tr> <td>30% - 39%</td> </tr> <tr> <td>20% - 29%</td> </tr> <tr> <td>10% - 19%</td> </tr> </tbody> </table>	Legend	90% or more	80% - 89%	70% - 79%	60% - 69%	50% - 59%	40% - 49%	30% - 39%	20% - 29%	10% - 19%
Legend													
90% or more													
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60% - 69%													
50% - 59%													
40% - 49%													
30% - 39%													
20% - 29%													
10% - 19%													
Community group (ex. HOA)	55%	52%											
Santa Fe County Fire Department	38%	58%											
Local government	20%	30%											
USDA Forest Service	20%	43%											
Firewise USA	16%	62%											
Ready, Set, Go! Program	16%	48%											
Fireshed Ambassadors Program	13%	62%											
New Mexico State Forestry	13%	39%											
National Park Service	10%	32%											
Bureau of Land Management	9%	26%											

Figure 30—Percentage of survey respondents who received wildfire risk information, by source, as reported by survey respondents in the study area in the City of Santa Fe, New Mexico. These data were 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 source). N = 386–392 responses to source receipt questions; N = 34–240 responses to source usefulness questions. HOA = homeowners association; USDA = U.S. Department of Agriculture.

Current and preferred channels of communication

There are many different channels by which information about wildfire may be distributed. We asked participants about the forms in which they currently receive wildfire-related information, as well as how they would prefer to receive this information. In general, there is no one channel through which the majority of survey respondents reported receiving wildfire information. The two most common communication channels reported were email or e-newsletters (47%) and the newspaper (44%), while around one-third of survey respondents reported receiving information from in-person interactions (37%), TV-news (37%), mailed newsletters, community meetings (35%), and the internet (non-social media; 34%). The most often preferred communication channel was email or e-newsletter (89%), and over half of survey respondents reported a preference for mailed newsletter (63%), internet (non-social media; 59%), and in-person interactions (56%). For all nine channels of communication,

more participants reported wanting to receive information than reported currently receiving information from each channel (refer to fig. 31).

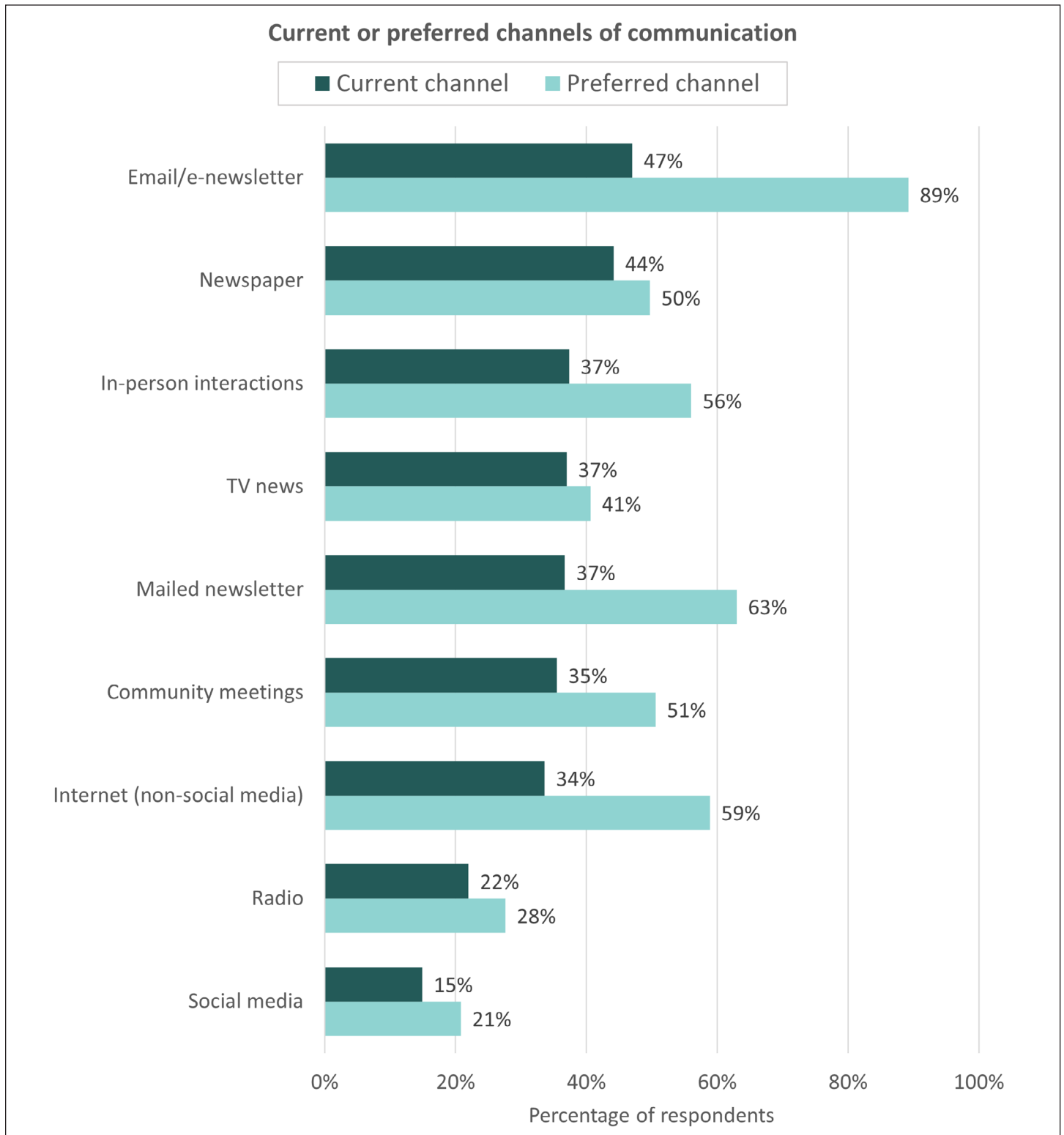


Figure 31—Comparison of current and preferred channels of communication about wildfire risk, ordered by current channels of communication, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. Survey respondents were able to select multiple options. N = 357-372 responses to current channels; N = 348-362 responses to preferred channels.

What Are Respondents Doing About Wildfire?

Evacuation planning

Evacuation planning is an important step in wildfire preparedness. Two thirds of survey respondents (66%) reported having evacuation plans for the people in their household (refer to fig. 32a). Of the survey respondents with pets, 61% had a plan for their pets (refer to fig. 32b). Of the survey respondents with livestock, only 8% had a plan for their livestock (refer to fig. 32c).

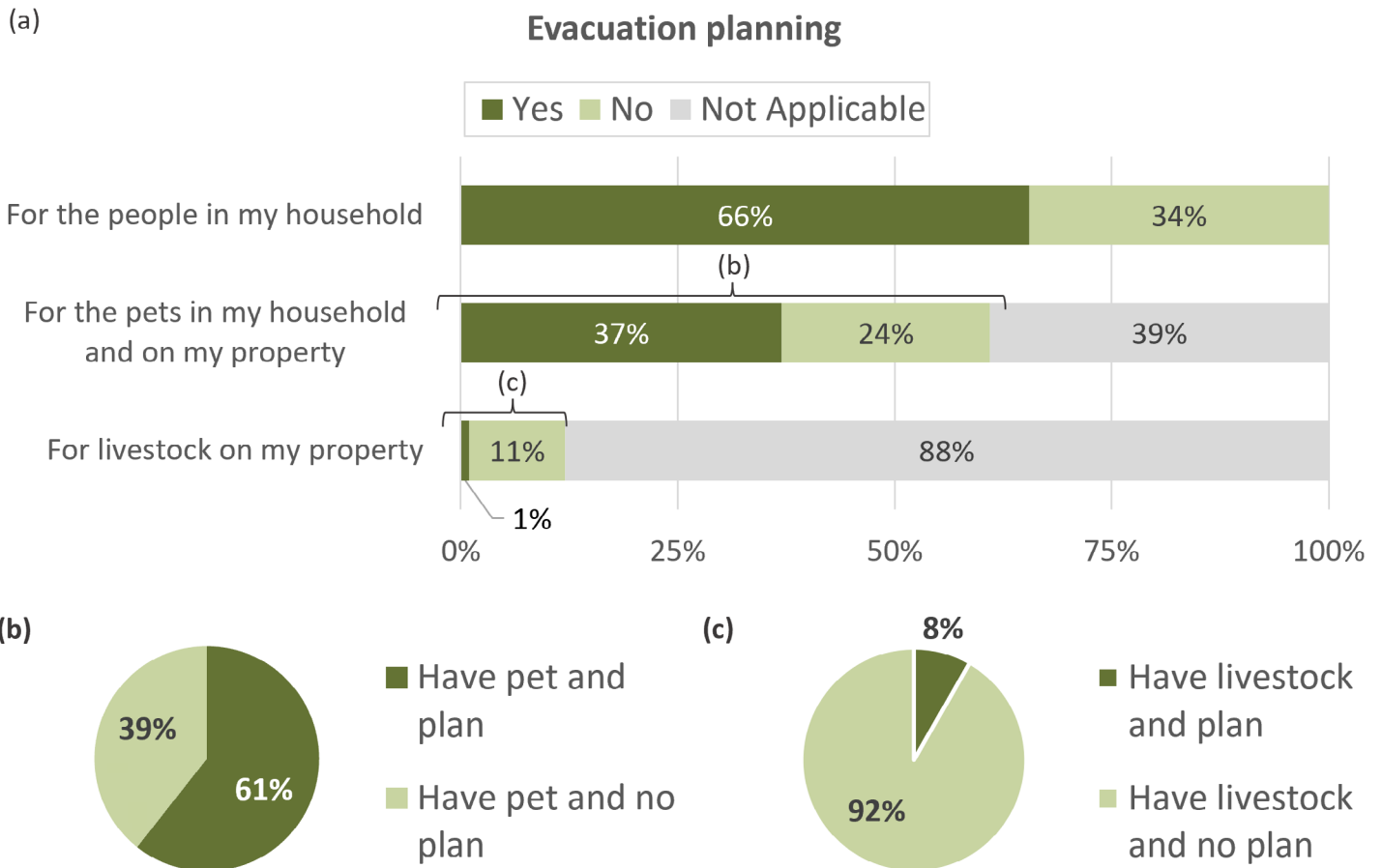


Figure 32—(a) Percentage of survey respondents who report having wildfire evacuation plans for people in the household and for pets and livestock, out of all responses to this question (n = 399–412). (b) Of respondents with pets, percentage who have a wildfire evacuation plan for their pet (n = 250). (c) Of respondents with livestock, percentage who have a wildfire evacuation plan for their livestock (n = 47). Data as reported by survey respondents residing in the study area in the City of Santa Fe, New Mexico.

Respondents were asked to think through the actions regarding evacuation they have completed, as well as to identify topics about which they would like more information. Although 66% of survey respondents reported having an evacuation plan, survey responses reveal that respondents would like more information pertaining to evacuation. Over half of survey respondents reported having identified safe evacuation routes (61%) and identifying what to take and what to leave behind (53%). Fewer than 50% of survey respondents reported completing the other six evacuation-related actions. However, many respondents reported

wanting more information about the actions. The most requested topics for additional information were identifying how they will be notified (77%), creating a checklist (73%), signing up for emergency notifications (70%), and identifying safe evacuation routes (67%; refer to fig. 33).

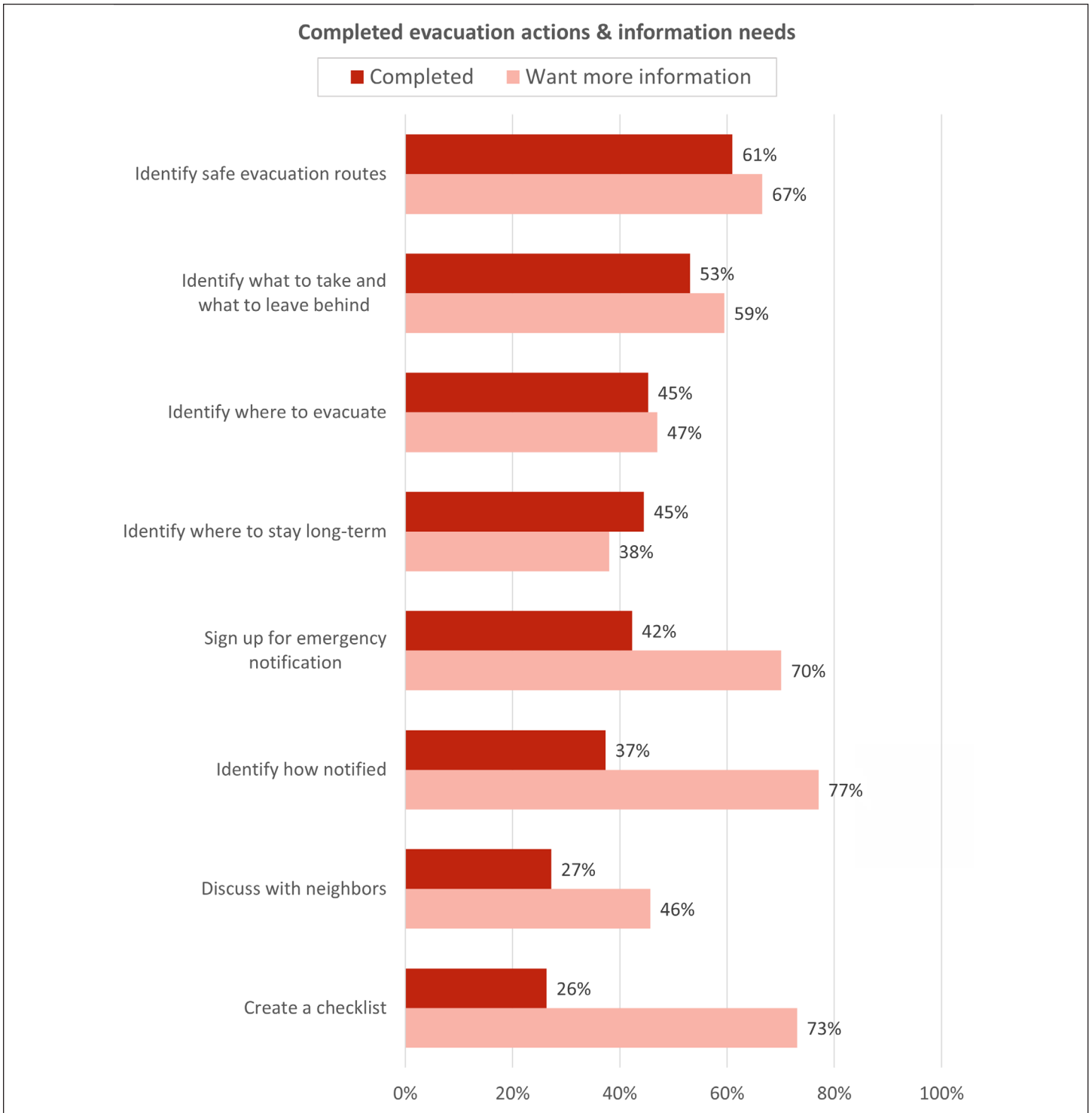


Figure 33—Evacuation preparations completed and information that would be helpful in evacuation plan development, ordered by actions completed, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 343–358 responses to completed action segment; N = 267–305 responses to wanting more information segment.

Wildfire risk mitigation

There are many ways property owners can reduce their risk of wildfire. Respondents were asked to report on mitigation actions they have performed on their properties and around their communities. The three most commonly reported activities were reducing vegetation (91%), regularly clearing roof and gutters (77%), and regularly mowing and raking around the residence (73%). Nearly half (49%) of survey respondents reported hardening their homes, and 35% had met with a wildfire professional to evaluate their home’s risk. Less common mitigation activities in this community involved participating in a community wildfire activity (26%) and reducing the amount of vegetation outside residents’ own properties, such as in the community (20%), on neighbors’ land (17%), and on public land(s) (4%; refer to fig. 34).

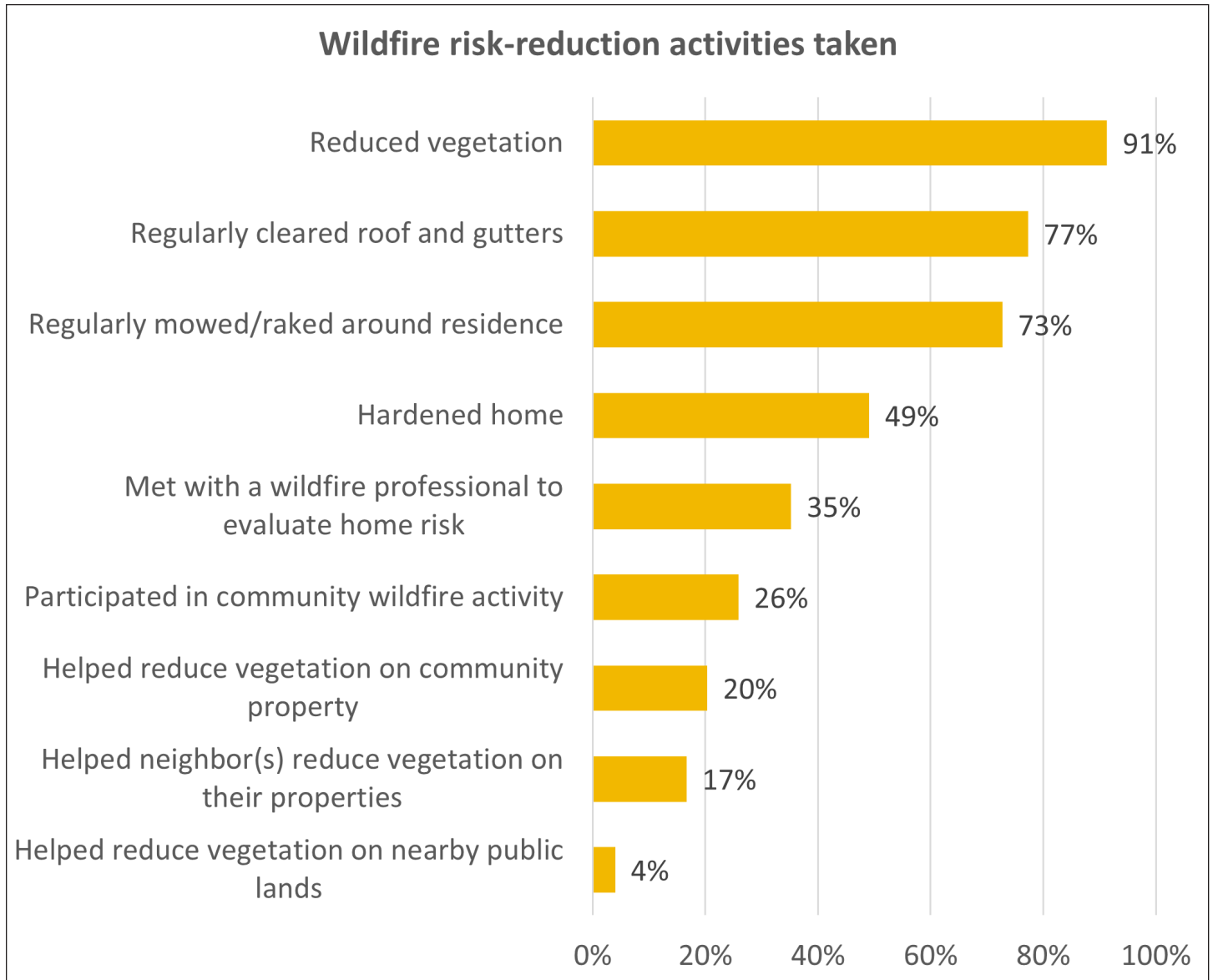


Figure 34—Percent of survey respondents who reported doing the above wildfire risk mitigation activities, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 379–404 respondents for each of the above activity statements.

Barriers and incentives

Respondents were asked about four categories of potential barriers to conducting wildfire mitigation, including personal resources, lacking specific information, personal perspectives, and community-based barriers. A majority (56% to 69% per category) of survey respondents reported no barriers, selecting the “none of these” option for each category. Across each of the four categories, the four most-reported barriers to mitigation were physical ability to do the work (31%), lack of information about how to reduce risk on the property (24%), where to dispose of vegetation or slash (24%), and lack of options for disposing of vegetation or slash (24%).

Some of the most-reported barriers were within the personal resources category. The greatest number of survey respondents reported physical ability (31%) as a barrier to doing the work. Similar numbers reported time to do the work (19%) and financial cost (18%) as a barrier to mitigation. Over half (56%) of survey respondents reported that none of these three factors were barriers to mitigation (refer to fig. 35).

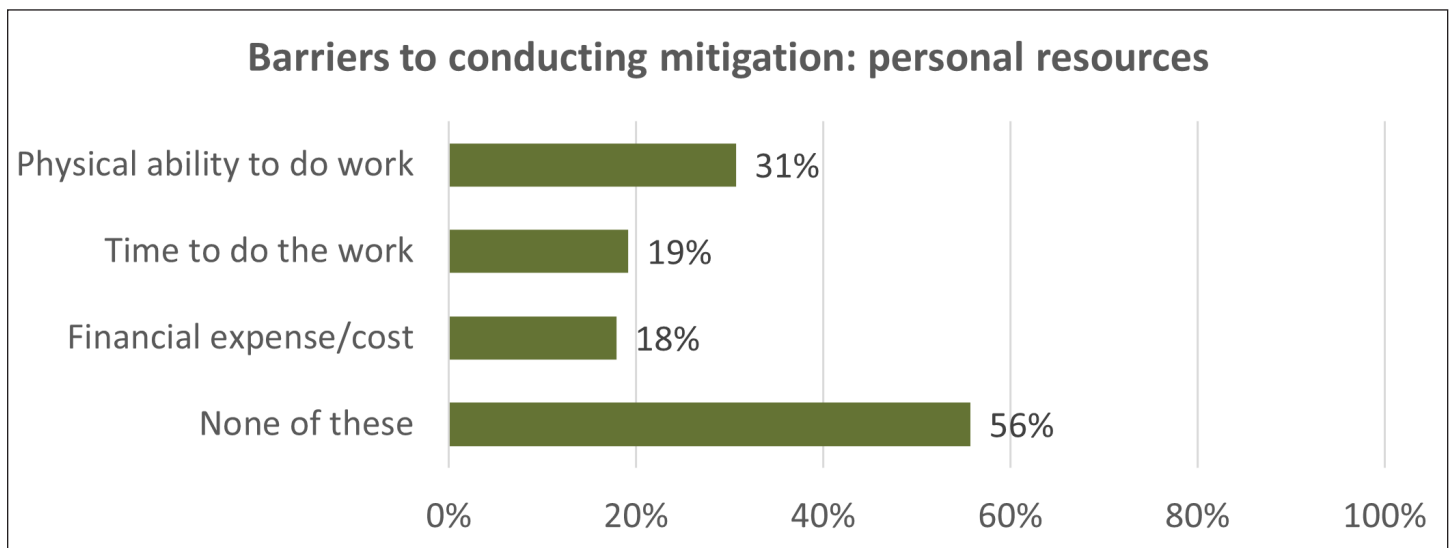


Figure 35—Personal resource barriers to conducting wildfire mitigation activities on property, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 391 respondents for each of the above barriers.

Some survey respondents reported that a lack of information presented a barrier to wildfire mitigation. In particular, respondents reported lack of information on how to reduce risk on their property (24%) and where to dispose of slash (24%) as barriers to mitigation. These were two of the highest-reported barriers in the survey. Eighteen percent of survey respondents reported lack of information about factors contributing to a property’s risk as a barrier. Most respondents (56%) reported that none of these were barriers (refer to fig. 36).

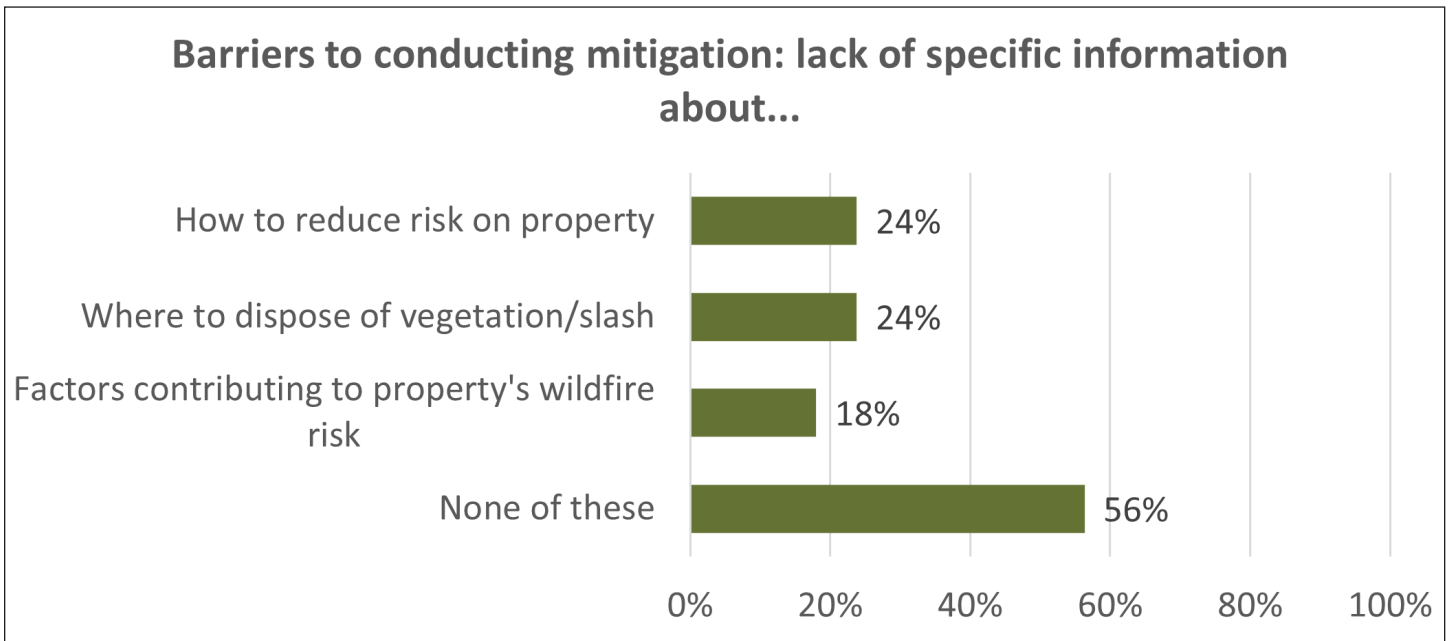


Figure 36—Information barriers to conducting wildfire mitigation activities on property, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 378 respondents for each of the above barriers.

Fewer respondents reported barriers to mitigation rooted in personal perspectives, as compared to personal resource, information, or community barriers. Sixteen percent of survey respondents reported not wanting to change the look of their property as a barrier to mitigation, 14% reported that taking action would not reduce risk, and 6% of survey respondents reported that mitigation was a low priority. Most respondents (68%) reported that none of these were barriers (refer to fig. 37).

The most common community barrier to mitigation selected by respondents among those presented was a lack of options for disposing of slash (24%). Fewer respondents selected the community barriers of restrictions about changing the look of a property (9%) or social pressure from neighbors (1%). Most respondents (69%) reported that none of these were barriers (refer to fig. 38).

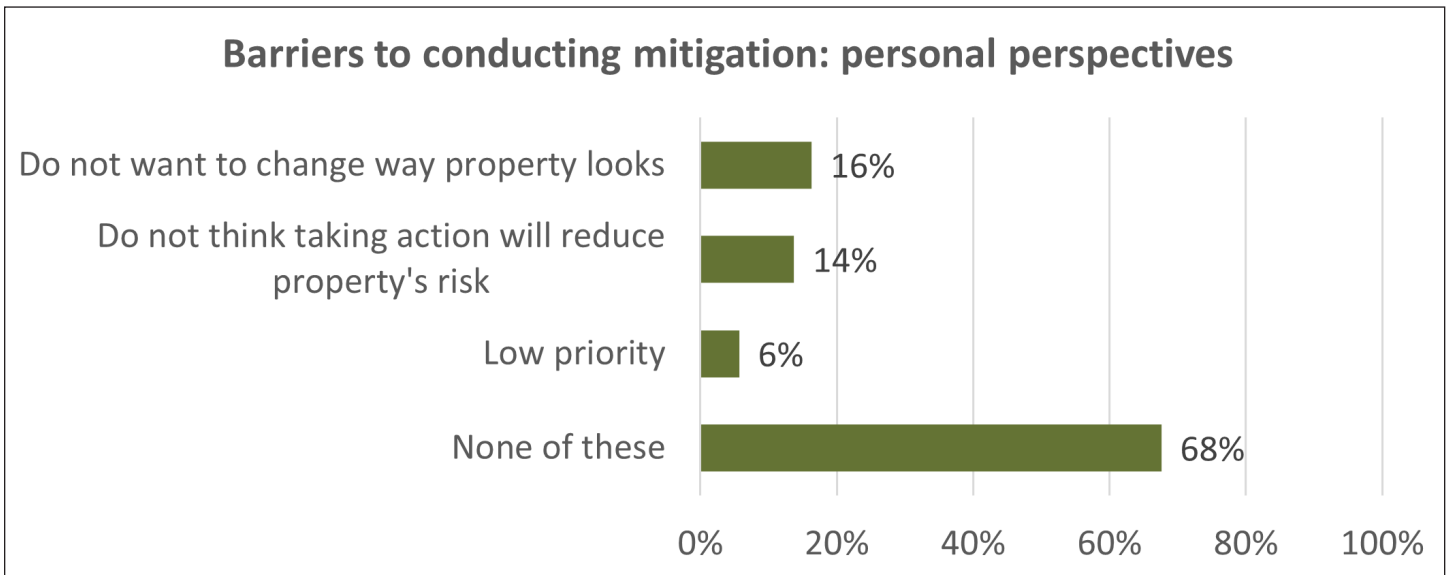


Figure 37—Personal perspectives or values that might affect wildfire mitigation activities on property, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 386 respondents for each of the above barriers.

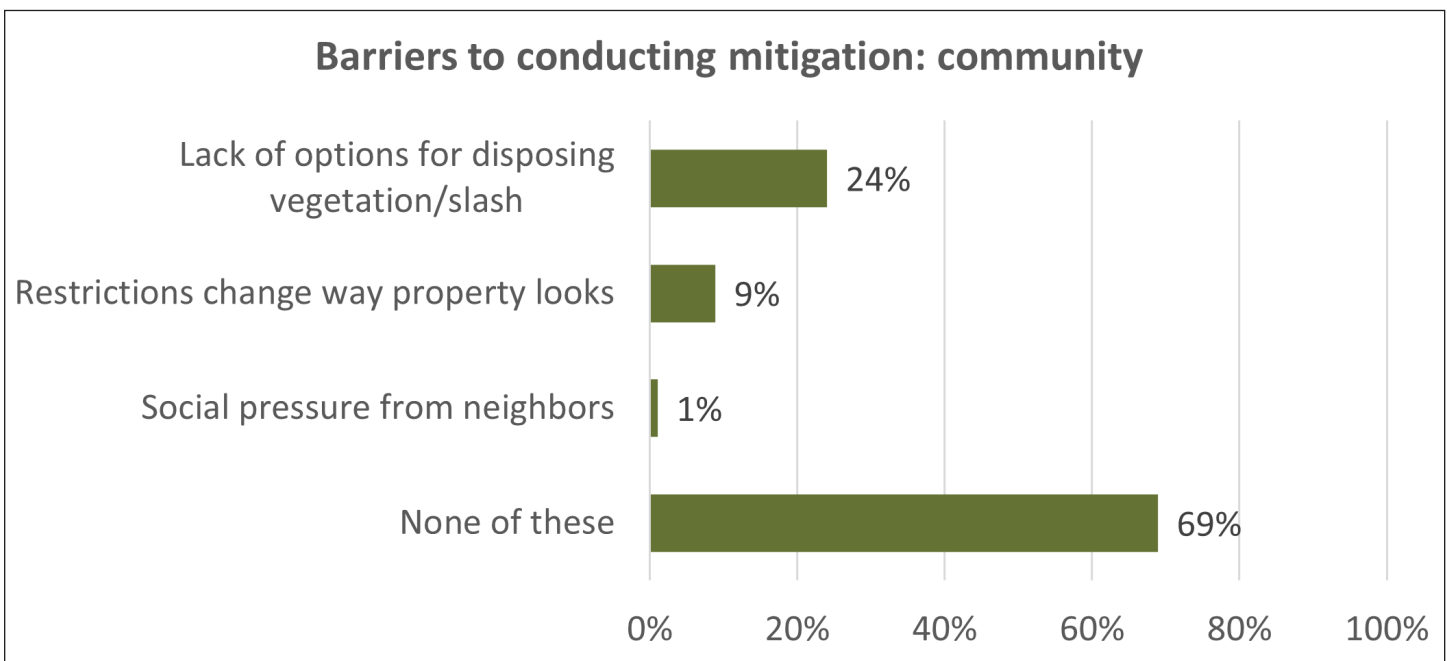


Figure 38—Community-related barriers to conducting wildfire mitigation activities on property, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 383 respondents for each of the above barriers.

We also asked respondents to consider potential incentives that would help them complete mitigation actions. These were presented in three categories: resources, information, and social incentives. Across these categories, the three most popular forms of support were a one-on-one visit to the property by a wildfire expert (56%), a property-specific risk report (55%), and help doing the work (48%).

In the resource incentives category, help doing the work was the most popular (48%), followed by contractor recommendations (38%), and cost-share or financial assistance (29%). Nearly one-third of survey respondents (31%) reported that none of these incentives would encourage them to complete mitigation (refer to fig. 39).

Information incentives were the most popular in the survey. In particular, over half of survey respondents reported that a one-on-one visit with an expert on their property (56%) and a report describing their property’s risk factors (55%) would help them to mitigate. About a quarter (26%) of survey respondents wanted videos showing how to reduce wildfire risk on their properties. Twenty-three percent of survey respondents reported that none of these incentives would help them complete mitigation (refer to fig. 40).

Support in the social category was less popular among participants. Forty percent reported none of the incentives in this category would help them with their mitigation activities. However, 38% reported feedback on work they had done to reduce their property’s risk would be helpful, and 37% thought a neighborhood group that organizes wildfire risk reduction activities would be helpful. Finally, 11% reported receiving recognition would be motivating to perform mitigation (refer to fig. 41).

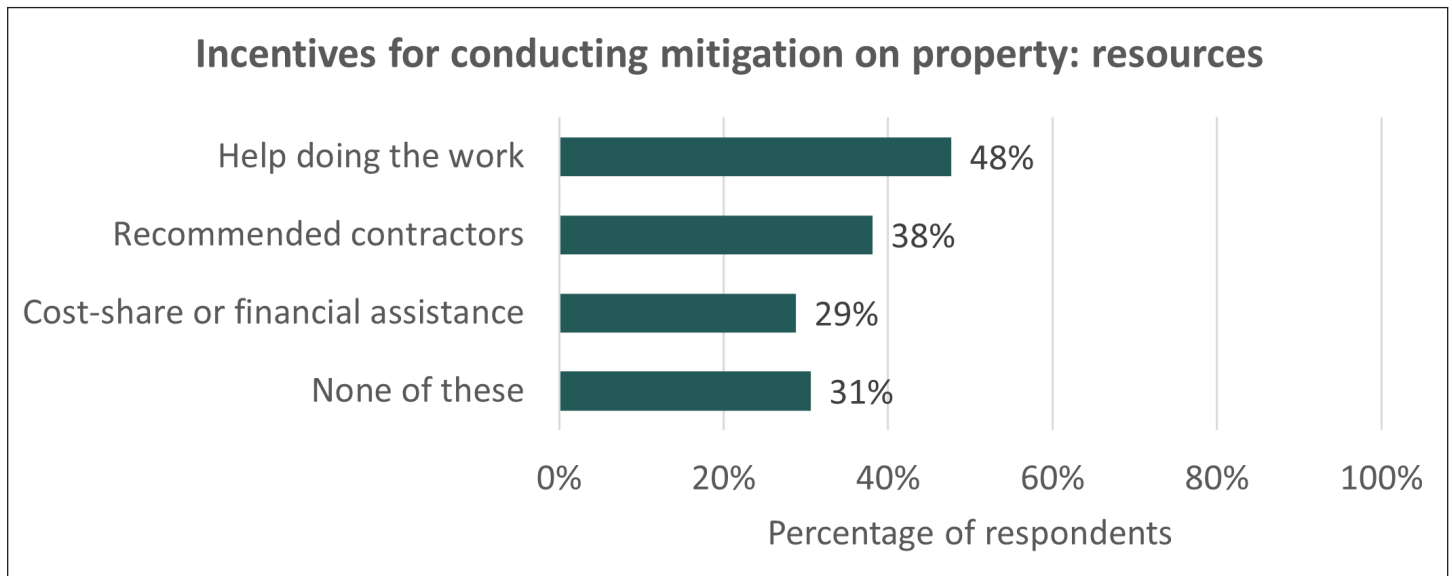


Figure 39—Resource-related incentives for conducting wildfire mitigation activities on property, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 386 respondents for each of the above incentives.

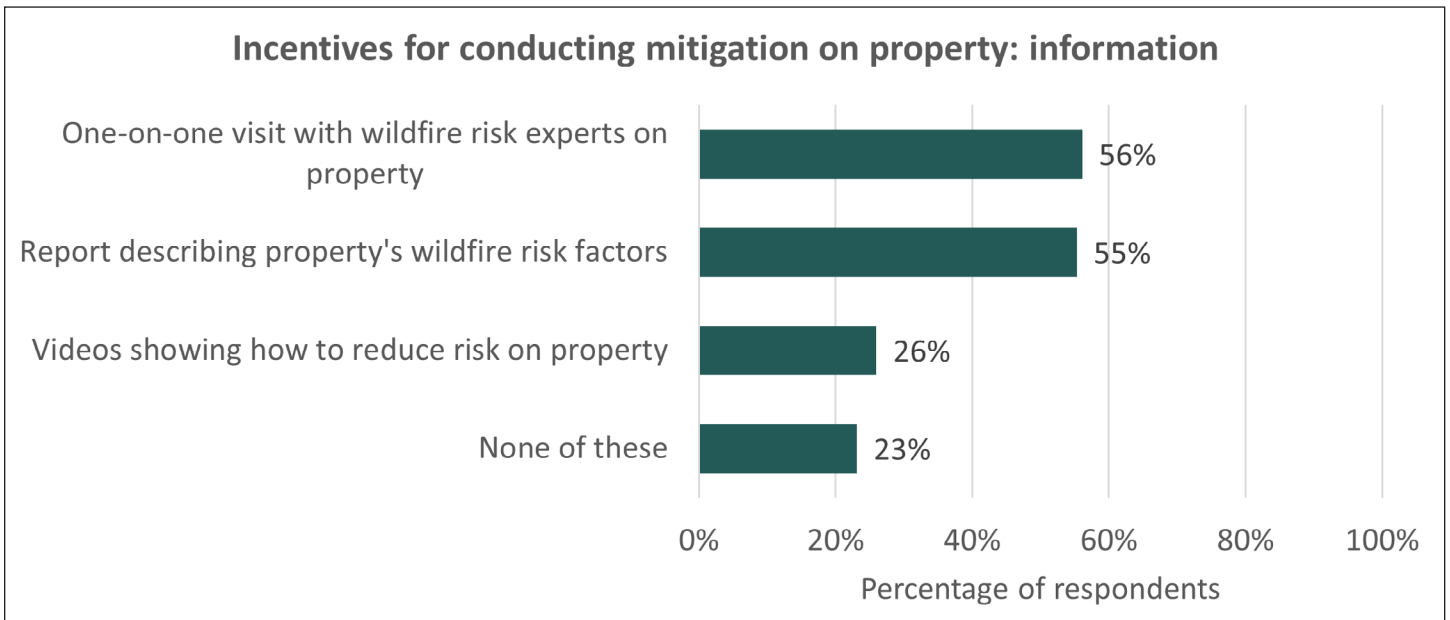


Figure 40—Information-related incentives for conducting wildfire mitigation activities on property, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 385 respondents for each of the above incentives.

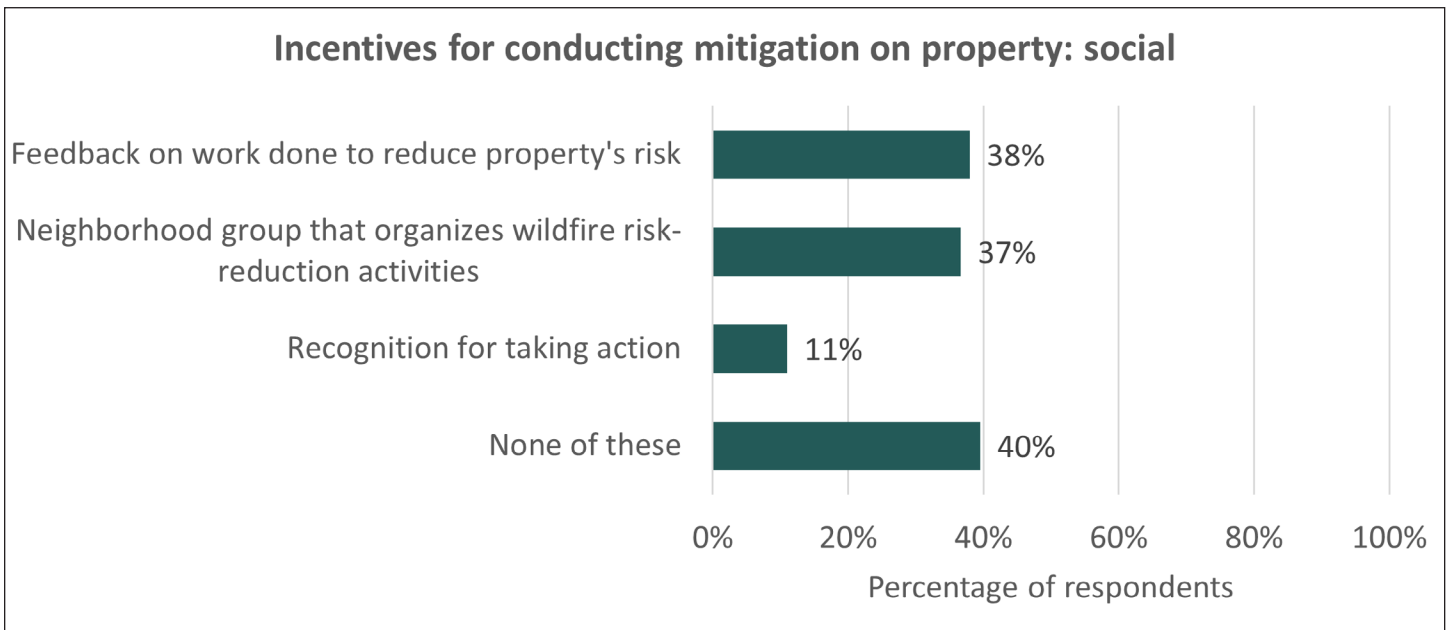


Figure 41—Other incentives for conducting wildfire mitigation activities on property, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 382 respondents for each of the above incentives.

Do Respondents Support Community Mitigation and Preparedness Efforts?

Support for risk management practices

Most survey respondents rated fuels treatments as very or extremely acceptable. The highest acceptability was for the removal of vegetation along roadways for safer evacuation (81%), removing trees and vegetation on public lands (81%), and managing naturally ignited fire on nearby public lands (78%). Less accepted, but still very or extremely acceptable to over half of survey respondents, were conducting prescribed burns on public lands (67%) and burning piles of vegetation on nearby public lands (65%) (refer to fig. 42).

Survey respondents also indicated broad support for proposed wildfire regulations and practices. Most survey respondents found adoption of codes or regulations in fire-prone areas very or extremely acceptable, including building codes that require fire-resistant materials (86%), growth policies or land use regulations that limit new development (81%), and development standards that require vegetation management (75%; refer to fig. 43).

Survey respondents indicated support for wildfire-related services. Eighty-nine percent of survey respondents reported support (i.e., “very” or “extremely” acceptable) for a Fireshed Ambassador program that coordinates, trains, and provides resources to volunteers who inform and encourage their neighbors to prepare for wildfire. Similarly, 81% of survey respondents supported increasing existing City capacity for wildfire risk reduction and water protection (refer to fig. 44).

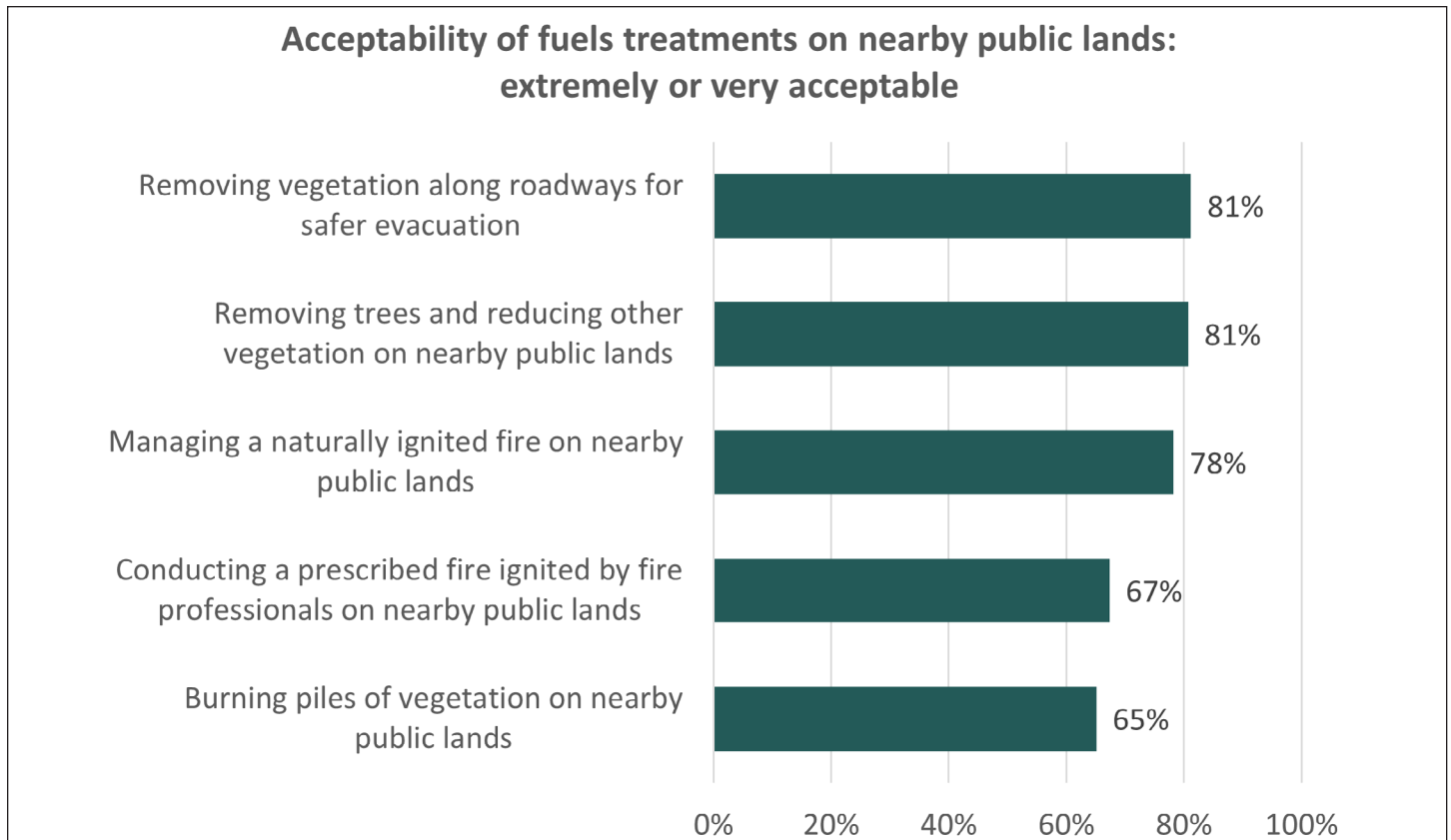


Figure 42—Percentage of survey respondents who found each of the above wildfire fuels management approaches very or extremely acceptable, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 402–405 respondents for each of the above statements.

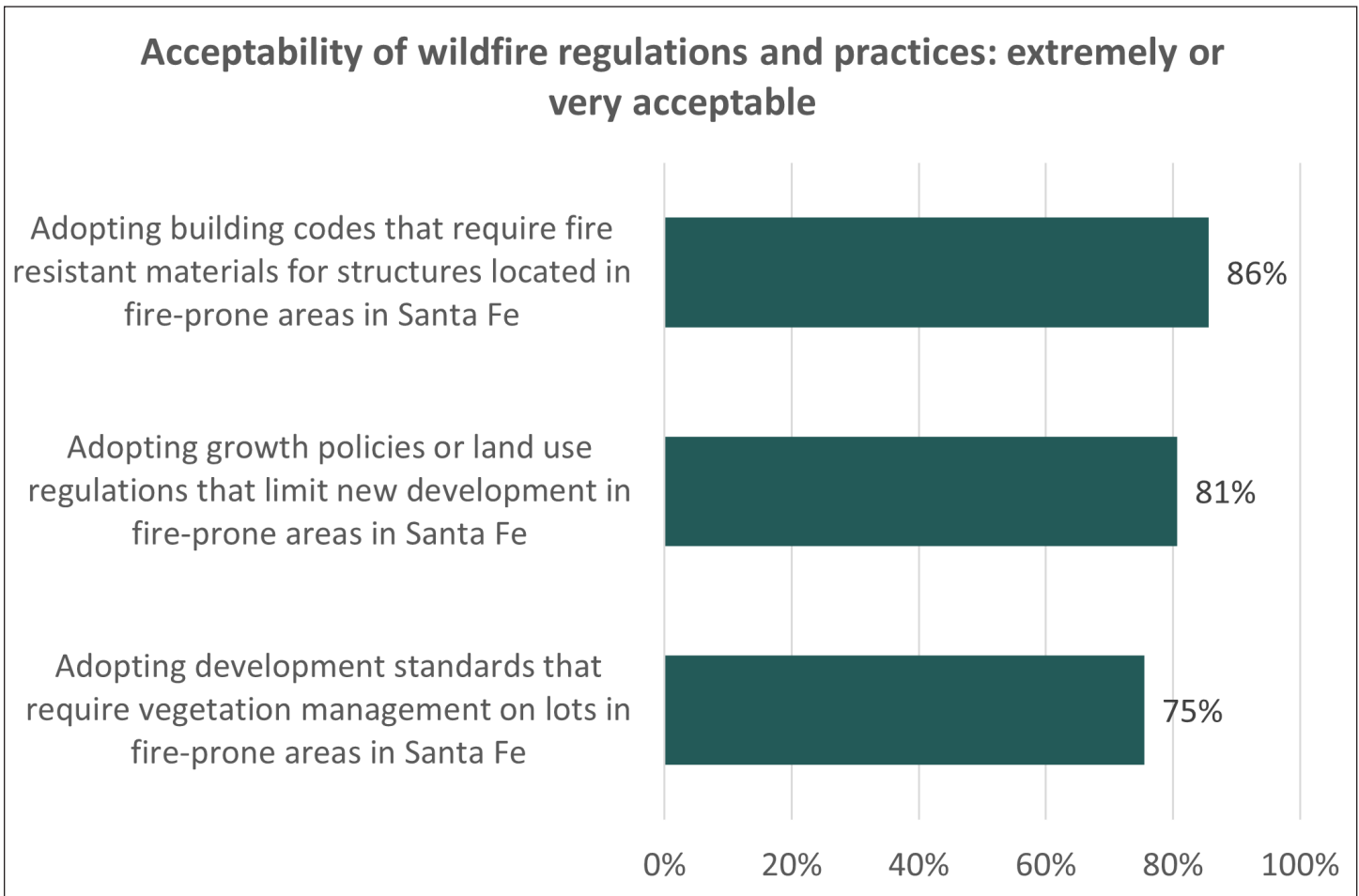


Figure 43—Percentage of survey respondents who found each of the above wildfire-related policies very or extremely acceptable, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 401–403 respondents for each of the above statements.

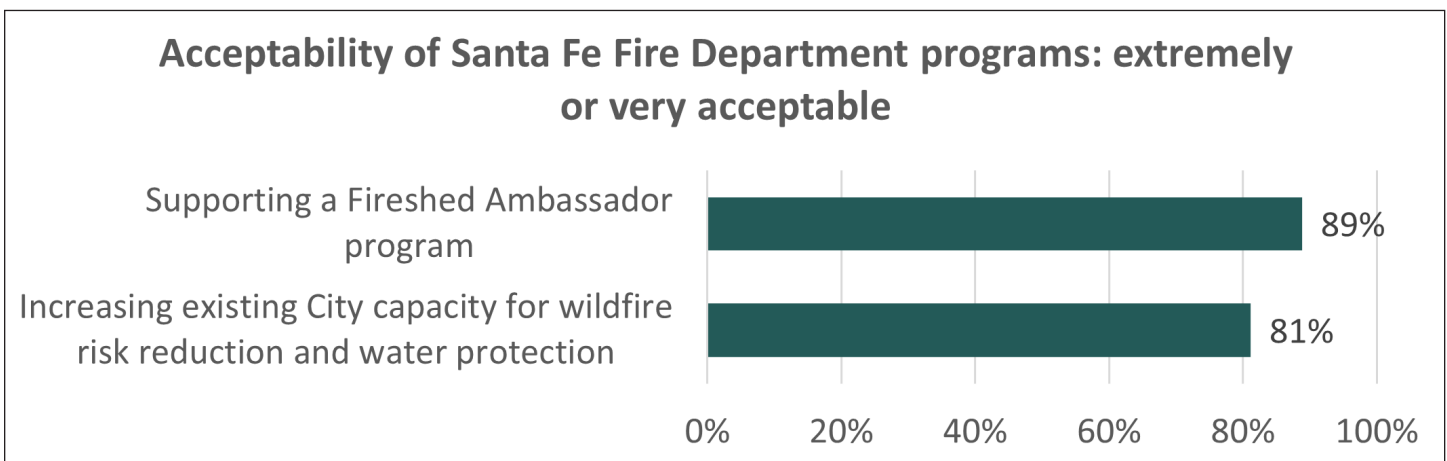


Figure 44—Percentage of survey respondents who found each of the above wildfire-related policies very or extremely acceptable, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 401–406 respondents for each of the above statements.

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 threatening human life (97%) and threatening homes (92%) should be put out. In addition, most agreed or strongly agreed that wildfires are a natural part of a healthy forest ecosystem (88%). Two-thirds (66%) of survey respondents agreed or strongly agreed that saving homes should be prioritized over saving forests during wildfire events (refer to fig. 45).

Despite preferences to suppress wildfire, survey respondents were less confident in the technology and resources available to do so. About one-third (35%) agreed or strongly agreed that most wildfires can be controlled with proper technology. A small percentage (9%) agreed or strongly agreed that local firefighters have sufficient resources to protect homes from wildfire, and few (6%) agreed or strongly agreed that local firefighters have sufficient resources to keep wildfires from spreading (refer to fig. 46).

Another dimension of wildfire risk is the threat posed to local water supply. Most respondents (62%) agreed or strongly agreed that wildfires threaten their community water supply (refer to fig. 47).

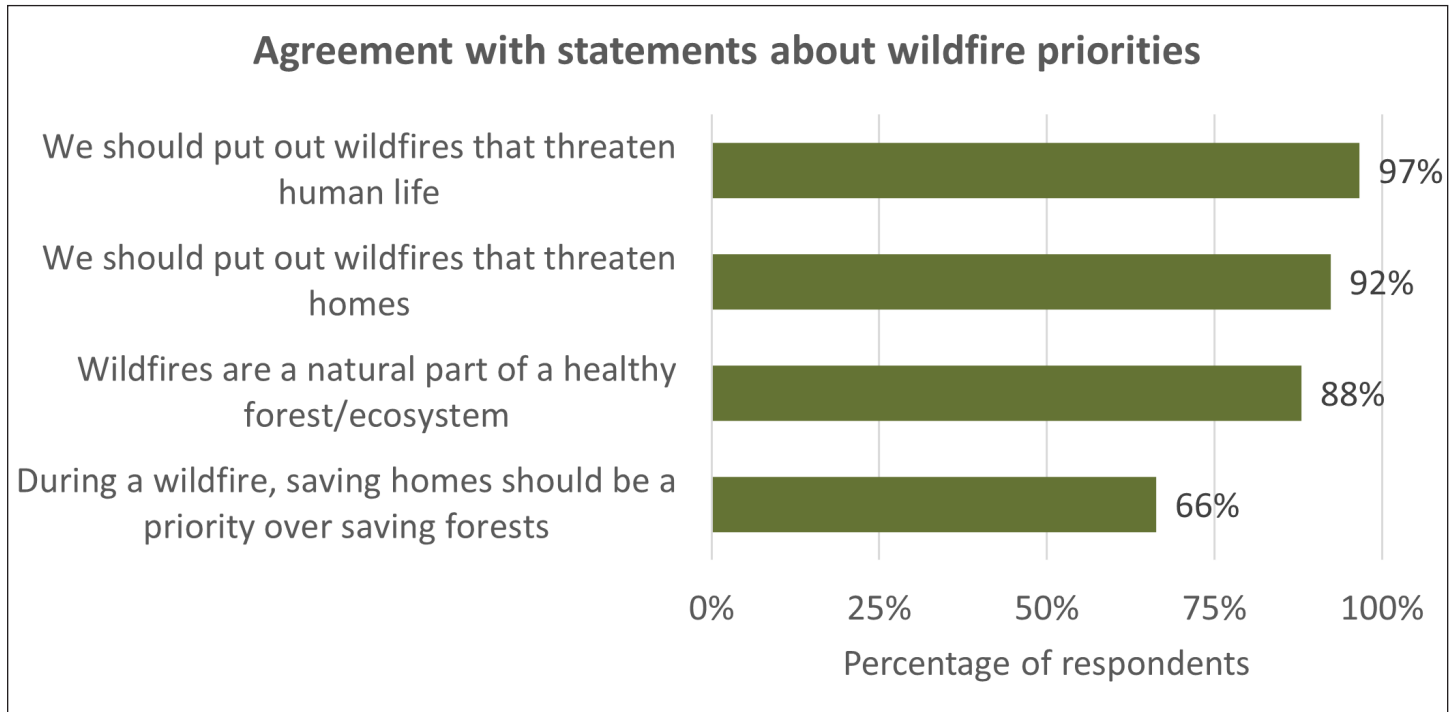


Figure 45—Agreement (“agree” or “strongly agree”) with statements about priorities between human and natural resources during a wildfire, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 392–397 responses to each survey statement listed.

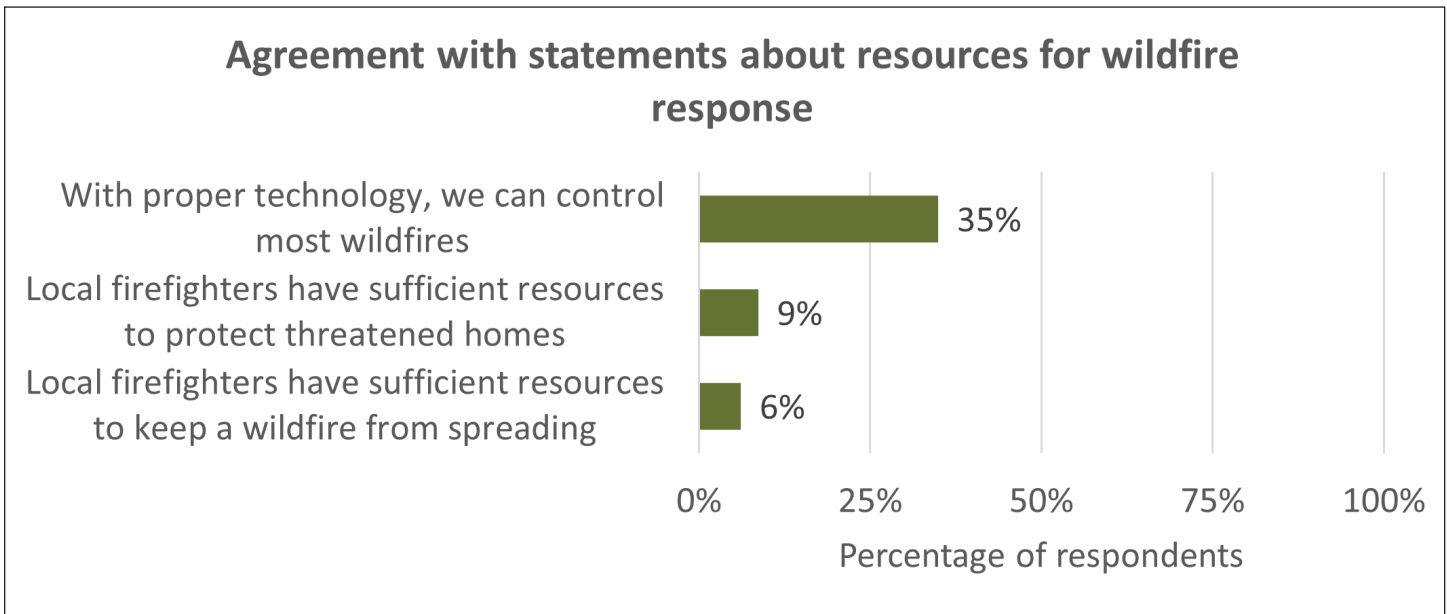


Figure 46—Agreement (“agree” or “strongly agree”) with statements about available technology and resources to prevent wildfire impacts, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 392–394 responses to each survey statement listed.

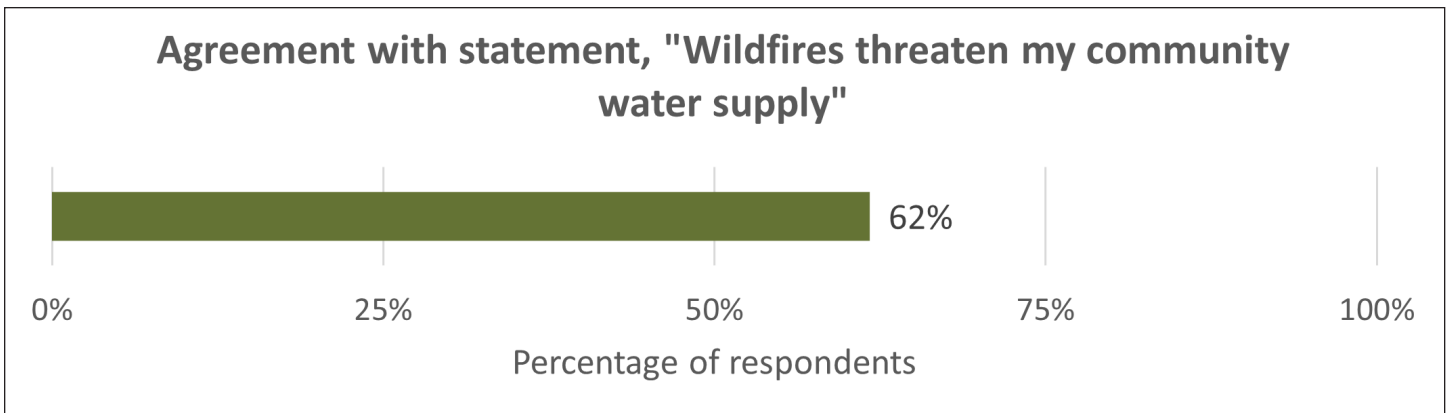


Figure 47—Agreement (“agree” or “strongly agree”) with statement about wildfire threat to water supply, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 396 responses to the survey statement listed.

Lastly, survey responses indicate that participants feel responsibility for taking action to reduce their risk and believe in the efficacy of their actions in lowering their risk. Nearly half (45%) agreed or strongly agreed that development in fire-prone areas increases the risk to their property, but less than a quarter of survey respondents agreed or strongly agreed that their actions to mitigate wildfire risk on their properties were rendered ineffective by heavy vegetation on neighboring properties (22%). Only 3% agreed or strongly agreed with the statement that homeowner’s actions are ineffective against wildfire. Further, few survey respondents agreed or strongly agreed that firefighters should risk their lives protecting homes (3%) or that managing wildfire risk is the government’s responsibility, not their own (6%; refer to fig. 48).

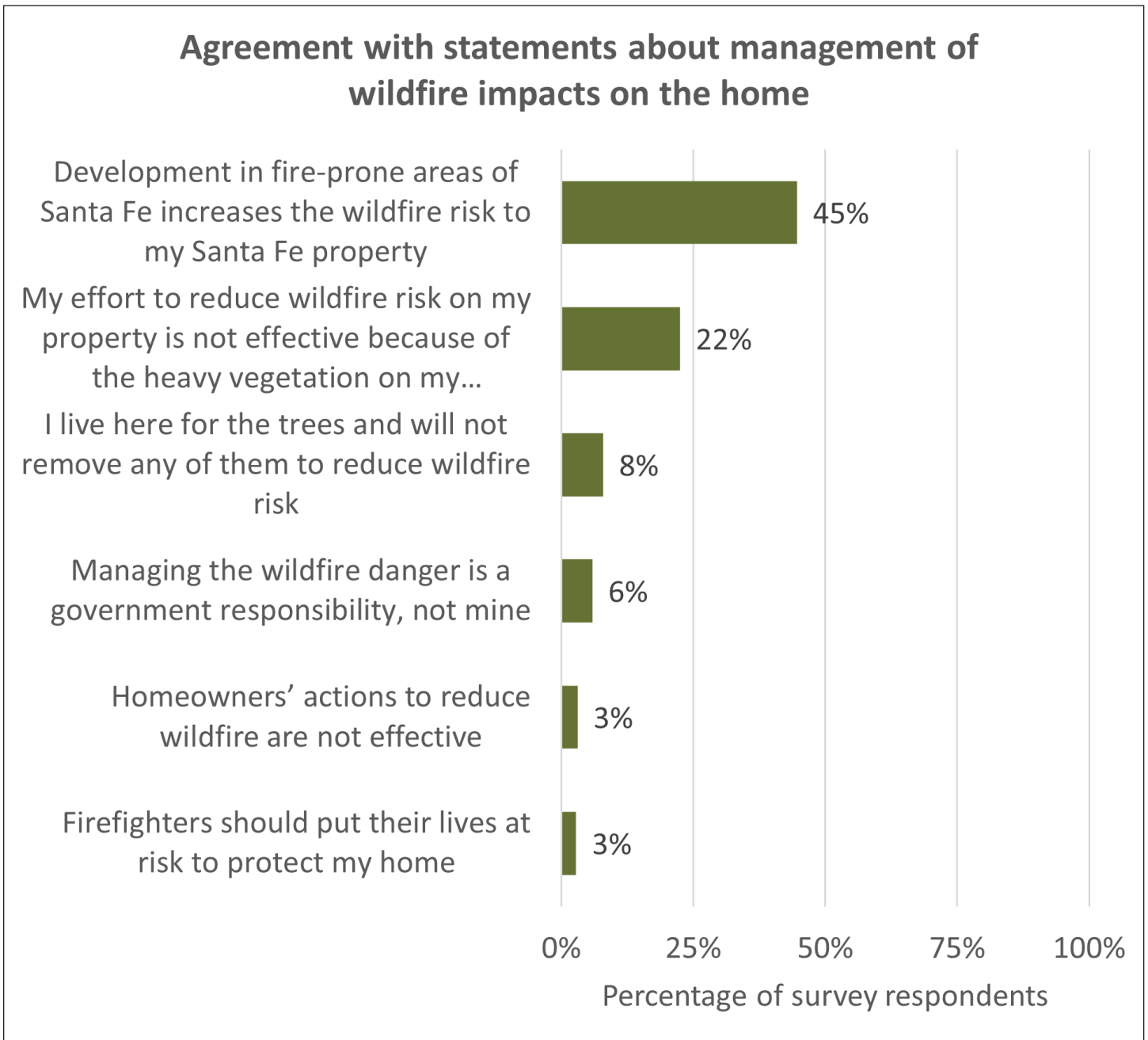


Figure 48—Agreement (“agree” or “strongly agree”) with statements about personal and community management of wildfire impacts on the respondent’s home, as reported by respondents residing in the study area in the City of Santa Fe, New Mexico. N = 394–399 responses to each survey statement listed. FPD = fire protection district.

CONCLUSION

This report compares two sets of data describing parcel-level wildfire risk in the study area within the City of Santa Fe, New Mexico: a WiRē risk assessment for residential parcels within the study area and a household survey describing respondents' own estimates of their wildfire risk. The report also explores survey data related to the social dimensions of wildfire in the Santa Fe study area, including respondents' experience with wildfire, perceptions of wildfire risk and responsibility for wildfire risk mitigation, support for public land management strategies for wildfire risk mitigation, current mitigation and evacuation preparedness activities, barriers and incentives to mitigation, and communication preferences.

Survey results indicated socially feasible fuel management strategies for adjacent public lands. In particular, survey respondents indicated broad support for all proposed fuel management strategies, as well as regulatory measures affecting building codes, development standards, and growth policies (figs. 42 and 43). Almost all respondents indicated support for a Fireshed Ambassador program and increasing existing City capacity for wildfire risk reduction and water protection (fig. 44). These results indicate a path forward for community-level wildfire mitigation efforts.

At the parcel level, survey respondents differed in their evaluation of wildfire risk as compared to the WiRē RA data. Most respondents rated their overall wildfire risk as moderate, whereas wildfire professionals conducting the WiRē RA placed more parcels in the low- and high-risk categories (fig. 4). The two largest disparities between the WiRē RA and survey data were in the estimation of distance to combustible vegetation within 100 feet of the home (fig. 9) and distance from the home to other combustibles (fig. 10), both of which were more likely to be rated at lower risk levels in the survey than in the WiRē RA. Awareness of this difference in risk evaluation, and the specific risk attributes informing those differences, can focus outreach efforts, including conversations with residents and educational messaging.

Despite differences in wildfire risk estimation, survey results indicated that respondents are aware of the risk posed by vegetation on their property (fig. 29), willing and confident in their ability to reduce risk on their property (fig. 48), and have few barriers to action (figs. 35–38). These results indicated an opportunity for increased outreach to align homeowner and professional perspectives on the components of wildfire risk and to improve the effectiveness of homeowner action. Survey respondents also reported that they would appreciate more information about evacuation preparedness, which is an essential component of wildfire preparedness (fig. 33).

Results indicated several ways to improve wildfire risk mitigation and preparedness within the Santa Fe study area. First, to address the gap between the WiRē RA and respondent self-assessment of parcel-level wildfire risk, wildfire professionals could provide more specific information about how to mitigate and where to dispose of vegetation or slash (fig. 36). Second, using existing and trusted information pathways, wildfire professionals could expand opportunity for on-site visits and reports describing property risk factors, which respondents reported as top incentives for mitigation (fig. 40). Third, to aid respondents whose physical ability limits their mitigation, wildfire professionals could provide a recommended list of contractors and increased slash disposal opportunities (figs. 35, 38, and 39). Survey responses indicated that SFFD was both the most widely received and most useful source of wildfire risk information to survey respondents (fig. 31).

Given the connection between SFFD and survey respondents, SFFD and WiRē collaborated on an outreach postcard that directed all homeowners in the SFFD jurisdiction to visit a website ([City of Santa Fe Wildfire Risk Assessments](#)) that WiRē created to share key findings from the WiRē study area, including sharing resources to address information gaps identified by survey respondents about regarding wildfire risk mitigation and encouraging further mitigation action (refer to Appendix F). Information selected for the website was based on survey responses and discussions with SFFD. The postcard was mailed to owners in March 2023.

Appendix A: Correspondence Materials and Household Survey

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Initial Letter to Study Area Homeowners



City of Santa Fe Fire Department

P.O. Box 909, 200 Murales Road – Santa Fe, New Mexico 87504
(505)955-3110 – FAX (505) 955-3115

Dear Santa Fe Resident,

The City of Santa Fe Fire Department shares your concerns related to the rapid changes and uncertainty associated with the COVID-19 pandemic. We are also committed to continuing our efforts to prepare Santa Fe for the eventuality of wildfire, and now is the time to engage with homeowners and do mitigation work. Fire is an important part of the natural landscape in Santa Fe; however, we have recently seen the devastating effects of wildfires in our community and those nearby, including the recent Medio Fire. Our goal is to be proactive in confronting wildfire risk before another disaster occurs. Therefore, the City of Santa Fe Fire Department is working to help homeowners understand and reduce their risk from wildfire.

Wildfire Risk Assessment

This Winter, the City of Santa Fe Fire Department will conduct parcel-level wildfire risk assessments from the sidewalk or street 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. If you are interested in a more in-depth, on-site, no cost wildfire risk assessment of your home and property, email or call Carlos Saiz, Forestry Technician, at crsaiz@santafenm.gov or (505) 946-8037.

Living with Wildfire in the City of Santa Fe in 2021 Survey

To create the most effective programs possible, we need to understand what residents know about wildfire, their experiences with wildfire, as well as the characteristics of their properties. Early next year, we will send you a survey in the mail to help us answer these questions. 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. During this time when so many things are out of our control, this is one area where you can make an impact.

If you have any questions about the parcel-level risk assessments or the survey, please email or call Porfirio Chavarria, Wildland Urban Interface Specialist, at pnychavarria@santafenm.gov or (505) 929-3688.

Thank you for participating.

Sincerely,

Paul Babcock

Paul Babcock (Dec 21, 2020 15:27 MST)

Porfirio Chavarria

Porfirio Chavarria (Dec 21, 2020 13:45 MST)

Paul Babcock
Fire Chief
City of Santa Fe Fire Department

Porfirio Chavarria
Wildland Urban Interface Specialist
City of Santa Fe Fire Department

First Cover Letter



City of Santa Fe Fire Department

P.O. Box 909, 200 Murales Road – Santa Fe, New Mexico 87504
(505)955-3110 – FAX (505) 955-3115

Dear Santa Fe Resident,

Members of our community have felt the devastating effects of wildfire. To confront disaster ahead of time, Santa Fe Fire Department is developing programs to help homeowners be better prepared. To create the most effective programs possible, Santa Fe Fire Department wants to understand what you know about wildfire, your experiences with wildfire, and the characteristics of your property.

The Santa Fe Fire Department is asking that you, and others in selected neighborhoods that are at high risk of wildfire, complete the enclosed "Living with Wildfire in Santa Fe in 2021" survey. The information you provide will help emergency responders better prepare for future fires as well as improve our outreach and education efforts. 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.

After completing the survey, please fold it and put it in the postage paid return envelope. When you return the survey, your name will be deleted from the mailing list and never connected to your answers in any way.

If you have any questions about this survey, please email or call Porfirio Chavarria, Wildland Urban Interface Specialist, Santa Fe Fire Department at pnchavarria@santafenm.gov or (505) 660-3732.

Thank you for participating.

Sincerely,

Paul Babcock

Paul Babcock
Fire Chief
City of Santa Fe Fire Department

Porfirio Chavarria

Porfirio Chavarria
Wildland Urban Interface Specialist
City of Santa Fe Fire Department



City of Santa Fe Fire Department

P.O. Box 909, 200 Murales Road – Santa Fe, New Mexico 87504 (505)
955-3110 – FAX (505) 955-3115

Dear Santa Fe Resident,

We recently requested your participation in an important survey about wildfire in our community. Many residents have completed and returned the survey to us. However, we would like to hear from you so we can consider your opinions. If you have already returned the survey, thank you for your participation. If you have not yet responded, please complete and return the enclosed survey.

The Santa Fe Fire Department needs 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. The “Living with Wildfire in Santa Fe in 2021” survey is intended to take roughly 20 minutes. We understand that your time is valuable and appreciate your contribution to building resilient communities.

After completing the survey, please fold it and put it in the postage paid return envelope. When you return the survey, your name will be deleted from the mailing list and never connected to your answers in any way.

If you have any questions about this survey, please email or call Porfirio Chavarria, Wildland Urban Interface Specialist, Santa Fe Fire Department at pnychavarria@santafenm.gov or (505) 660-3732.

Thank you for participating.

Sincerely,

Paul Babcock

Paul Babcock
Fire Chief
City of Santa Fe Fire Department

Porfirio Chavarria

Porfirio Chavarria
Wildland Urban Interface Specialist
City of Santa Fe Fire Department

«Ownid_label»

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Living with Wildfire in Santa Fe in 2021



Photo credit: City of Santa Fe website, 2018



City of Santa Fe Fire Department
PO Box 909, 200 Murales Road
Santa Fe, NM 87505

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

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

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

- Own
- Rent

1.2. In what months do you typically spend time at your Santa Fe home?
(Fill in all that apply)

- | | | | | | | | | | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| All 12
months | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | No
months |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

1.3. In what year did you move to your Santa Fe home? *(Fill in the blank)*

_____ Year moved to my Santa Fe home

1.4. In what year was your Santa Fe home originally built? *(Fill in the blank)*

_____ Year my Santa Fe home was built

1.5. How aware of wildfire risk were you when you bought or decided to rent your Santa Fe 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 Santa Fe home.

2.1. What is the closest distance (as a crow flies) a wildfire has come to your Santa Fe 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 Santa Fe home? *(Fill in one circle per row)*

	No	Yes
I have evacuated from my Santa Fe home due to a wildfire or threat of a wildfire	<input type="radio"/>	<input type="radio"/>
My Santa Fe home has had smoke damage	<input type="radio"/>	<input type="radio"/>
My Santa Fe home has had wildfire damage	<input type="radio"/>	<input type="radio"/>
My Santa Fe home was destroyed by a wildfire	<input type="radio"/>	<input type="radio"/>

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

	No	Yes	Not applicable
For the people in my household	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the pets in my household and on my property	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For livestock on my property	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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)

	Completed action?		Want more information about action?	
	No	Yes	No	Yes
Identify how I will be notified about an evacuation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sign up for a wildfire evacuation notification system (Alert Santa Fe - https://www.santafenm.gov/alertsantafe)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify safe evacuation routes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify a location that my household will evacuate to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify what to take and what to leave behind during an evacuation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discuss evacuation with my neighbors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create a checklist for steps to take before evacuating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify a place to stay during a long-term evacuation (i.e., more than a few days)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2.5. Please tell us about your experiences with your **homeowners insurance** for your Santa Fe home. *(Fill in one circle per row)*

	No	Yes	Don't know
Has your current or a previous insurance company ever provided information on reducing the risk of wildfire?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did an insurance company ever refuse to provide or renew your insurance because of the risk of wildfire?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you pay a higher premium for your insurance due to wildfire risk?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you receive a discount on your insurance premium because you have reduced wildfire risk on your property?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you think your home is adequately insured against loss from a wildfire?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has your current insurance company ever required you to take action to reduce wildfire risk in order to continue coverage?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has your current insurance company offered private firefighting services?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

3.1. Does your Santa Fe home have any of the following roofing materials?

(Fill in all that apply)

- Tile, metal, asphalt shingles, or flat composition
- Wood (shake shingles)

3.2. Does your Santa Fe 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 Santa Fe home have a combustible balcony, deck, porch/portal, or fence attached to the structure? *(Fill in one circle per row)*

Combustible...	No	Yes
Balcony	<input type="radio"/>	<input type="radio"/>
Deck	<input type="radio"/>	<input type="radio"/>
Porch/portal	<input type="radio"/>	<input type="radio"/>
Fence	<input type="radio"/>	<input type="radio"/>

3.4. What is the closest distance from your Santa Fe home to combustible items other than vegetation such as lumber, firewood, a propane tank, hay bales, or other materials that could easily ignite? *(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 Santa Fe 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 vegetation on your Santa Fe property between 100 and 150 feet from your home? That area might be outside your property boundary and include properties immediately surrounding you. (*Fill in one circle*)

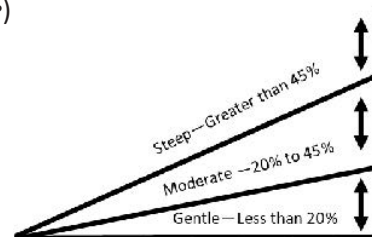
- Grass and sparse (isolated) piñon–juniper (light brush with piñon–juniper)
- Moderate density piñon–juniper stand/woodland; mountain mahogany and chamisa may be present
- Heavy piñon–juniper, possibly with ponderosa pine

3.7. What is the **closest** distance from your Santa Fe home to a neighboring home? (*Fill in one circle*)

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

3.8. The “slope” or “grade” 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 Santa Fe 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 Santa Fe 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 (ex. tree limbs) lower than 13.5 feet	<input type="radio"/>	<input type="radio"/>
is narrower than 14 feet wide	<input type="radio"/>	<input type="radio"/>
is longer than 150 feet	<input type="radio"/>	<input type="radio"/>
has room for a fire truck to turn around	<input type="radio"/>	<input type="radio"/>

3.11. Is the address number of your Santa Fe home posted at the end of your driveway and visible from the road? *(Fill in one circle)*

- Yes, it's posted and visible from both directions
- Yes, it's posted and visible from only one direction
- No, it's not visible from the road

3.12. If the street you use to access your Santa Fe home was blocked during a wildfire, is there another street 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 Santa Fe 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
Reduced vegetation on my Santa Fe property (ex. cleared/pruned weeds, brush, and trees)	<input type="radio"/>	<input type="radio"/>
Regularly cleared my roof and gutters of leaves and pine needles	<input type="radio"/>	<input type="radio"/>
Regularly mowed and raked around my Santa Fe home	<input type="radio"/>	<input type="radio"/>
Made my Santa Fe home more fire resistant (ex. replaced roofing, siding, added hardscaping)	<input type="radio"/>	<input type="radio"/>
Helped neighbor(s) reduce vegetation on their properties	<input type="radio"/>	<input type="radio"/>
Helped reduce vegetation on community property (ex. HOA, subdivision)	<input type="radio"/>	<input type="radio"/>
Helped reduce vegetation on nearby public lands (ex. county, state, federal lands)	<input type="radio"/>	<input type="radio"/>
Participated in a community wildfire activity (ex. meeting, chipper day, etc.)	<input type="radio"/>	<input type="radio"/>
Met with a wildfire professional at your home to evaluate and discuss your property's wildfire risk	<input type="radio"/>	<input type="radio"/>

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

	A lot	Somewhat	Not at all
Vegetation on my property	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical characteristics of my house or other buildings (ex. roofing or siding) on my property	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vegetation on my neighbors' properties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vegetation on nearby public or large undeveloped land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of nearby water supply (ex. hydrant or cistern) for fire suppression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4.4. How many of your immediate neighbors do you think have taken action to reduce wildfire risk on their properties (ex. removing dense vegetation or switching to noncombustible siding) *(Fill in one circle)*

- All my neighbors have taken action
- Most of my neighbors have taken action
- Some of my neighbors have taken action
- None of my neighbors have taken action

4.5. How acceptable are the following approaches to **reducing wildfire risk** in Santa Fe to you? *(Fill in one circle per row)*

	Extremely acceptable	Very acceptable	Moderately acceptable	Slightly acceptable	Not at all acceptable
Removing trees and reducing other vegetation (thinning/fuel breaks) on nearby public lands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Burning piles of vegetation (slash piles) on nearby public lands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducting a prescribed fire ignited by fire managers on nearby public lands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Managing a naturally ignited fire (lightning) on nearby public lands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adopting growth policies or land use regulations that limit new development in fire-prone areas in Santa Fe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adopting building codes that require fire resistant materials for structures located in fire-prone areas in Santa Fe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adopting development standards that require vegetation management (ex. removing or thinning trees and mowing grass) on lots located in fire-prone areas in Santa Fe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supporting a Fireshed Ambassador program that coordinates, trains, and provides resources to volunteers who inform and encourage their neighbors to prepare for wildfire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increasing existing City capacity for wildfire risk reduction and water protection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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 proper technology, we can control most wildfires.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We should put out wildfires that threaten human life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We should put out wildfires that threaten homes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
During a wildfire, saving homes should be a priority over saving forests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildfires are a natural part of a healthy forest/ecosystem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I live here for the trees and will not remove any of them to reduce wildfire risk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Managing the wildfire danger is a government responsibility, not mine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Homeowners' actions to reduce wildfire are not effective.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My property is at risk of wildfire.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My effort to reduce wildfire risk on my property is not effective because of the heavy vegetation on my neighbors' properties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local firefighters have sufficient resources to keep a wildfire from spreading.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local firefighters have sufficient resources to protect threatened homes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Firefighters should put their lives at risk to protect my home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildfires threaten my community water supply.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I plan to move out of the area in the next 12 months because of wildfires.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Development in fire-prone areas of Santa Fe increases the wildfire risk to my Santa Fe property.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5.2. If there is a wildfire on your Santa Fe 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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The fire department would save my home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My home would have smoke damage.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My home would have some physical damage.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My home would be destroyed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would lose money due to the loss of business or income on my property.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My trees and landscape would burn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My neighbors' homes would be damaged or destroyed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Direct flame would ignite my home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Embers would ignite my home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nearby homes would ignite my home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5.3. What do you think is the chance that a wildfire will be on your Santa Fe 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%
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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 Santa Fe home? *(Fill in one circle)*

For sure										No chance
100%	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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
City of Santa Fe Fire Department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Santa Fe County Fire Department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community group (ex. homeowners association)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fireshed Ambassadors Program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local arborist/contractor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local government	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Firewise USA®	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ready, Set, Go! Program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
New Mexico State Forestry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
USDA Forest Service (Santa Fe National Forest)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
National Park Service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bureau of Land Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Media (newspaper, TV, radio, internet)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6.2. How do you currently receive information about wildfire risk reduction, and how would you prefer to receive information? Please answer **both** questions for each row.
 (Fill in two circles per row, one for each question)

	I receive information about how to reduce wildfire risk on my property by...		I prefer to receive information about how to reduce wildfire risk by...	
	No	Yes	No	Yes
Email/e-newsletter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mailed newsletter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-person interactions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media (Facebook, Twitter, Nextdoor)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet (non-social media)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TV news	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Newspaper	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Radio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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 Santa Fe property.

7.1. Do any of the following **prevent you** from taking action to reduce the wildfire risk on your Santa Fe property (ex. cutting trees, changing roof/siding)?
 (Fill in all that apply for each row)

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

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

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

Section 8: In this section, we ask about personal and household characteristics. Your name will never 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
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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 \$15,000
- \$15,000 - \$24,999
- \$25,000 – \$34,999
- \$35,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- \$100,000 - \$149,999
- \$150,000 - \$199,999
- \$200,000 or more

Thank you for your help. Please use the space below to write any additional comments. If you would like to schedule an onsite visit with a wildfire professional to learn how you can reduce risk on your property, contact Porfirio Chavarria, Wildland Urban Interface Specialist at pnychavarria@santafenm.gov or (505) 660- 3732.

Postcard reminder/thank you


Dear Santa Fe Resident,

We recently sent you the “Living with Wildfire in Santa Fe in 2021” survey. 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.

If you have recently returned the survey, thank you for your participation!

Sincerely,

<i>Paul Babcock</i>	<i>Porfirio Chavarria</i>
Paul Babcock Fire Chief City of Santa Fe Fire Department	Porfirio Chavarria Wildland Urban Interface Specialist City of Santa Fe Fire Department

	City of Santa Fe Fire Department Wildland Urban Interface 200 Lincoln Ave. PO Box 909, Santa Fe, New Mexico 87504-0909	Presorted Standard U.S. Postage PAID SANTA FE, N.M. PERMIT # 285
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Appendix B: Wildfire Research (WiRē) Assessor Reference Guide: Rapid Assessment Form, Rapid Assessment Instructions, 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 Rapid Assessment Form	71
WiRē Rapid Assessment Instructions: Santa Fe	73
Data Collection Tool Instructions.	86

WiRē Rapid Assessment Form: Santa Fe

Attribute	Attribute description	Response categories	Attribute weight	Category score	
Access	Address Posting	Yes, fully meets standard	1%	0	
		Address sign is visible, but does not meet all standards		5	
		No, not posted/visible from the primary road		10	
	Ingress/Egress	If the road to access the home was blocked due to a wildfire, is there another road to get out of the community?	Yes, two or more roads in/out	1%	0
			No, one road in/out		10
			Unknown - not observed		10
	Driveway Clearance	Does the driveway meet the horizontal and vertical clearance standards as identified in the Assessor Reference Guide?	Yes, meets all driveway standards. Meets both height (at least 13.5') and width clearance (at least 14')	1%	0
			Meets one, but not both , standards (height or width)		5
			Does not meet either standard (height and width)		10
			Unknown - not observed		10
	Driveway Length	What best describes the driveway?	Less than 150' long	1%	0
			150' or more with "adequate" turnaround		5
			150' or more without "adequate" turnaround		10
Unknown - not observed			10		
Background Conditions	Distance to Dangerous Topography	More than 150'	5%	0	
		50' - 150'		25	
		Less than 50'		50	
		Unknown - not observed		50	
	Slope	The "slope" or "grade" 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 feet of the home?	Gentle - Less than 20%	2%	0
			Moderate - Between 20% and 45%		10
			Steep - Greater than 45%		20
			Unknown - not observed		20
	Adjacent Fuels	Which of the following best describes the dominant vegetation 100' - 150' from the home. This may be outside the property boundary.	Light - <i>grass and sparce (isolated) piñon-juniper (light brush with piñon-juniper)</i>	4%	10
			Medium - <i>moderate density piñon-juniper stand/woodland; mountain mahogany and chamisa may be present</i>		20
			Dense - <i>Heavy piñon-juniper, possibly with ponderosa pine</i>		40
			Unknown - not observed		40

WiRē Rapid Assessment Form: Santa Fe continued.

Attribute	Attribute description	Response categories	Attribute weight	Category score	
Defensible Space	Defensible Space	What is the closest distance from the home to overgrown, dense, or unmaintained vegetation?	More than 100'	10%	0
		30' - 100'	50		
		5' - 29'	75		
		Less than 5'	100		
		Unknown - not observed	100		
	Other Combustibles	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	8%	0
			5' - 30'		40
			Less than 5'		80
Unknown - not observed			80		
Home Ignition Potential	Roofing Materials	What is the most vulnerable roofing material?	Tile, metal, asphalt shingles, or flat composition	30%	0
		Wood (shake shingles)	300		
		Unknown - not observed	300		
	Building Exterior	What is the most vulnerable exterior siding material?	Stucco, cement, brick, stone, or other noncombustible siding	7%	0
			Log or heavy timbers		35
			Wood or vinyl siding		70
			Unknown - not observed		70
	Combustible Attachments	Does the home have a combustible balcony, deck, porch/portal, or fence attached to the structure? (<i>Broken out by attachment type. If any attachment type = yes, then combustible attachments = yes</i>)	No	10%	0
			Yes		100
			Unknown - not observed		100
		Attachment type: Balcony	No		0
			Yes		100
			Unknown - not observed		100
		Attachment type: Deck	No		0
			Yes		100
			Unknown - not observed		100
		Attachment type: Porch/Portal	No		0
			Yes		100
			Unknown - not observed		100
		Attachment type: Fence	No		0
Yes	100				
Unknown - not observed	100				
Proximity to Adjacent Homes	What is the closest distance to a neighboring home?	More than 100'	20%	0	
		30' - 100'		50	
		10' - 29'		100	
		Less than 10'		200	
		Unknown - not observed		200	
Total checks			100%	1000	

WiRe Rapid Assessment Instructions: Santa Fe

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
Assessor Name	Assessor name	Porfirio Chavarria	Select Assessor from dropdown menu.	NA
		Josh Chavarria		
		Brandon Aguilar		
		Zach Klose		
		Carlos Saiz		
		Other		
Gate	Is there a gate to get onto the property?	No gate or non-locking gate	<p>Locked gates restrict emergency responders to safely defend a structure in the event of a wildfire. According to NFPA any gate on a required road or driveway shall be located a minimum of 30 feet from the intersection of the road or driveway. The gate opening shall swing inward and shall provide a clear opening of no less than two feet wider than the gated road or driveway. Emergency responders shall have ready access to locking mechanisms on any gate that restricts access. If no locked gate is on the primary driveway to the structure then the answer is no. If a locked gate is present then the answer is yes.</p> <p>If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose "Unknown - not observed."</p>	NA
		Yes gate locked restricting access		
		Unknown - not observed		
Structure Type	Primary use of structure. Is it used as a home or living area (Residential) is it used as a business (Commercial) is it used to manufacture goods or a type of industrial site (Industrial)?	Residential	The default is residential. Please select and change based on what you see in the field.	NA
		Commercial		
		Industrial		
		Mixed use		
		No structure/vacant lot		
		Other		
Number of Outbuildings	What is the number of outbuildings (i.e. nonresidential structures) on this property?	Enter number of outbuildings.	Enter the number of outbuildings you can see.	NA

WiRē Rapid Assessment Instructions: Santa Fe continued.

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
<p>Address Posting</p>	<p>Does the address sign meet all of the standards as identified in the Assessor Reference Guide?</p>	<p>Yes fully meets standard.</p>	<p>Use this category if the address sign fully meets or exceeds the local standard: Buildings shall have a permanently posted address which shall be placed at each driveway entrance and be visible from both directions of travel along the road. The address shall be visible and legible from the road which the address is located. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall be a minimum 4 inches high with a minimum 0.5 inch stroke width. Where multiple addresses are required at a single driveway they shall be mounted on a single post and additional signs shall be posted at locations where driveways divide.</p>	<p>A clearly visible address sign that remains visible in the dark (e.g. night smoky) is critical for safe and effective emergency response - particularly EMS. In many locations a local jurisdiction (e.g. county city FPD) may have a standard for address signs. Typical standards for wildfire considerations include: The sign and post are non-combustible the lettering is at least 4 inches tall the sign incorporates a retroreflective contrasting color scheme and the sign has been posted in a highly visible location at the juncture of the public road and the driveway. In some instances multiple homes are accessed from a common driveway. In these instances it may be necessary to post multiple address signs where the common driveway junctures with the public road and then additional individual address signs where each individual driveway breaks off. For the purposes of this rapid assessment “posted” is meant to imply that the address sign is visible at the juncture of the public road and the driveway. This assessment is not considering sign material or any other potential local standards.</p>
		<p>Address sign is visible but does not meet all standards</p>	<p>Use this category if the address sign is visible from the road but does not meet all standards. If there is a local address sign standard use this category if the address sign is visible from the road but does not meet all of the local standards.</p>	
		<p>No not posted/visible from the primary road</p>	<p>Use this category if the address sign either (A) does not appear to exist or (B) is not visible. Use this category regardless of the whether or not the address sign meets the WiRe or local standard or not.</p>	

WiRē Rapid Assessment Instructions: Santa Fe continued.

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
<p>Ingress/ Egress</p>	<p>If the road to access the home was blocked due to a wildfire is there another road to get out of the community?</p>	<p>Yes two or more roads in/out</p>	<p>Safe and effective ingress and egress is a critical component to community planning as well as safe and effective emergency response and evacuation. Numerous types of emergency ingress/egress situations can exist such that there may be certain locations that will have more than one road out from the immediate house but then over some distance these multiple ingress/egress routes funnel back in to a single ingress/egress route. It will be up to the discretion of the assessor (should be determined prior to beginning RA what the determining factors are) to determine if a property has more than one VIABLE route for getting in and out of the property and to a reasonably far away location that will more likely than not be considered a safe location during a future wildfire incident.</p>	<p>Does the family have a plan for evacuation including a meeting location A and location B in case cell phone communications are lost? Is the resident aware of the main routes for evacuating the home and have they driven them?</p>
		<p>No one road in/out</p>		
		<p>Unknown - not observed</p>	<p>If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose "Unknown - not observed."</p>	

WiRē Rapid Assessment Instructions: Santa Fe continued.

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
<p>Driveway Clearance</p>	<p>Does the driveway meet the horizontal and vertical clearance standards as identified in the Assessor Reference Guide?</p>	<p>Yes meets all driveway standards. Meets both height (at least 13.5') and width clearance (at least 14')</p>	<p>The rationale behind this question is primarily related to emergency access and in particular access for wildland fire engines structure fire apparatus and other emergency responders to access the property. Horizontal Standard: Under ideal circumstances each WUI driveway would provide enough horizontal width so that two vehicles could easily pass one another along the driveway. By width we are talking about horizontal obstruction-free clearance that would permit vehicle access. We are not talking solely about road base. In other words if a driveway road base is 10 feet wide and is bordered by flat ground that could easily be driven on by any of the above listed vehicles with no obstructions in either direction for at least 2 feet on each side (a total of 14 feet) then the assessor should mark the driveway as “Yes meets all driveway standards”. However if there are obstructions such as vegetation driveway gateways or anything else deemed as an obstruction that would make it difficult or impossible for two vehicles to pass each other along the driveway at any point than the assessor should rate this domain as “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. The takeaway for homeowners is that they may need to remove obstructions such as vegetation or gateways so that emergency vehicles can safely utilize their driveway during a future incident. Vertical Standard: Vertical obstructions are another consideration. Overhanging tree branches or ranch style gateways can create vertical obstructions. The vertical standard for this assessment is 13.5 feet.</p>	<p>NA</p>
		<p>Meets one, but not both standards (height or width)</p>		
		<p>Does not meet either standard (height and width)</p>		
		<p>Unknown - not observed</p>		

WiRē Rapid Assessment Instructions: Santa Fe continued.

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
Driveway Length	What best describes the driveway?	Less than 150' long	Similar to DrivewayClear length is related to the safety of emergency responders that are accessing the home. The longer the driveway the more risk exposure for responders. Length may be estimated by driving down the driveway (which will be very helpful to answer several other additional questions) satellite imagery or visual estimate. Similarly the “turnaround” aspect of the question relates to whether or not an adequate and appropriate turnaround exists along the driveway. By “adequate” - we mean that a turnaround exists that meets/exceeds the local FPD/county/ relevant jurisdictional standards for emergency vehicle turnarounds If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose “Unknown - not observed.”	If a local FPD/county/local jurisdictional standard for emergency vehicle turnarounds does not exist your jurisdiction may elect to develop a standard - whether or not there is a strict requirement for homeowners to meet the standard. One such standard from Boulder County has a nice companion flyer which provides visuals which can be helpful when trying to relay this information to the public. Boulder County Turnaround Standards Link: https://assets.bouldercounty.org/wp-content/uploads/2017/03/w04-emergency-vehiclesaccess.pdf
		150' or more with "adequate" turnaround		
		150' or more without "adequate" turnaround		
		Unknown - not observed		
Distance to Dangerous Topography	What is the closest distance from the home to a ridge steep drainage or narrow canyon?	More than 150'	Topography is one of the three main factors that influence wildland fire behavior. It is well documented and understood that 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. The goal of this domain is to assess the relative proximity of the home to any observed feature. If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose “Unknown - not observed.”	NA
		50' - 150'		
		Less than 50'		
		Unknown - not observed		

WiRē Rapid Assessment Instructions: Santa Fe continued.

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
<p>Slope</p>	<p>The “slope” or “grade” 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 feet of the home?</p>	<p>Gentle - Less than 20%</p>	<p>Calculate average slope on property within a 150 foot buffer of the home. While certain topographic features can significantly influence wildfire behavior characteristics the overall slope of the land where the home is situated has a proportionally significant influence. While the arrangement of fuels (type moisture levels vertical continuity horizontal continuity etc.) aspect and incident specific weather conditions will also become significant factors we know that as slope increases the potential for elevated fire behavior characteristics increases correspondingly. To this end the intent of this domain is to raise/increase awareness about this basic wildfire behavior fact so that those folks that have homes on steep slopes are extra diligent with regards to mitigation and preparedness. But how do we measure slope? Slope is a measurement of the vertical rise between at least two points. To maintain consistency we recommend that each assessor utilize the same methodology for estimating slope. The recommended methodology is as follows: Draw an imaginary transect that is 300 feet in length with the center of the transect being the center of the home that is being assessed. There will then be 150 feet of distance along the transect in either direction from the center of the home. Situate the transect so that it is perpendicular to the contours of the slope. Please note that the transect must be a straight line. If numerous undulations/topographic complexities exist do your best to make an estimate of the overall lay of the land within approximately 150 feet of the home. Estimate the total elevation change (in feet) along the transect by subtracting the lowest elevation at one end of the transect to the highest elevational point at the opposite end of the transect. Finally divide the elevation change number by 300 and multiply that result by 100. Example: If you estimate a change of 38 feet in elevation between to the two ends of the imaginary transect then your percent slope is equal to $(38/300) \times 100 = 12.66\%$. If you estimate 120 feet of elevation change than the percent slope is equal to $(120/300) \times 100 = 40\%$. A clinometer is a simple tool to estimate slope. This type of measurement can also be done using GIS. PLEASE NOTE THE DIFFERENCE BETWEEN PERCENT SLOPE AND DEGREES.</p>	<p>Slope can be measured in truly infinite number of ways. If your group elects to go with a different measurement methodology - that is okay so long as all of the assessors are using the same methodology. Certain GIS tools have made the measurement of slope possible from your computer. That said keep in mind that for this assessment we are putting slope in to three categories which are fairly course descriptions of slope options.</p>
		<p>Moderate - Between 20% and 45%</p>		
		<p>Steep - Greater than 45%</p>		
		<p>Unknown - not observed</p>		

WiRē Rapid Assessment Instructions: Santa Fe continued.

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
<p>Adjacent Fuels</p>	<p>Which of the following best describes the dominant vegetation 100' - 150' from the home. This may be outside the property boundary.</p>	<p>Light - grass and sparse (isolated) piñon-juniper (light brush with piñon-juniper)</p>	<p>Grass and sparse (isolated) piñon-juniper (light brush with pinion juniper)</p>	<p>Fuels are one of the three categories on the wildfire behavior triangle. This domain looks at a proxy of fuel type and fuel load/density.</p>
		<p>Medium - moderate density piñon-juniper stand/ woodland; mountain mahogany and chamisa may be present</p>	<p>Moderate density piñon-juniper stand/woodland; mountain mahogany and chamisa may be present</p>	<p>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</p>
		<p>Dense - Heavy piñon-juniper possibly with ponderosa pine</p>	<p>Heavy piñon-juniper possibly with ponderosa pine</p>	<p>(vertical and horizontal) fuel moistures fuel loads combustion characteristics etc. As such this domain is subject to a significant amount of assessor interpretation and subjectivity. That said we recommend the following methodology: Look at the area where the home is situated. Within a band starting at 100 feet from the home (limits of defensible space category) and extending out to 150 feet of the home, in all directions, estimate what is the dominant and primary fuel description. By “dominant and primary” we mean which of the fuels within this area will more likely than not play the greatest role in fire behavior should those fuels become involved in the fire.</p>
		<p>Unknown - not observed</p>	<p>If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose “Unknown - not observed.”</p>	

WiRē Rapid Assessment Instructions: Santa Fe continued.

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
<p>Defensible Space</p>	<p>What is the closest distance from the home to overgrown dense or unmaintained vegetation?</p>	<p>More than 100'</p>	<p>Primary experimental research from the International Crown Fire Modeling Experiment (1998) demonstrated that structures (stick built T-1-11 siding composite shingles) were able to survive (with light scorch) from the radiant heat of an active crown fire (Jack Pine) at a distance as little as 10 meters (32.8 feet) without direct flame contact but did ignite when the structure was exposed to direct flames. At a distance of 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 feet) / Zone 2 (30-100 feet) / Zone 3 (100 feet or more with slope factor). Additional understanding and research has lead to a fuller understanding of ignition vulnerabilities for the home (primarily related to ember ignitions). A new 5 foot zone has emerged from the work being conducted by IBHS and has begun to gain more widespread adoption. For this domain each assessor will need to determine using best professional judgement the amount of distance (in feet) between the home and any “overgrown dense or unmaintained vegetation”. To this extent it is important to consider the vegetation in question and whether or not that particular vegetation would more likely than not contribute to an active wildland fire and thusly expose the home in question to direct flames and/or 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 5 feet of the home? Within 30 feet of the home? Within 100 feet of the home?</p> <p>If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose “Unknown - not observed.”</p>	<p>Truly assessing defensible space requires a more thorough evaluation of the home and its immediate surroundings and typically necessitates an in-person walk through with the homeowner. Determining an appropriate prescription for vegetation management will depend upon a number of factors. The intent of question is to raise and/or increase awareness related to the fact that additional vegetation management is necessary to adequately reduce the potential for radiant or convective heat exposure to the home from burning vegetation during a wildland fire. The new 5 foot zone should be devoid of all combustible materials (including bark mulch or combustible vegetation).</p>
		<p>30' - 100'</p>		
		<p>5' - 29'</p>		
		<p>Less than 5'</p>		
		<p>Unknown - not observed</p>		

WiRē Rapid Assessment Instructions: Santa Fe continued.

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
<p>Other Combustibles</p>	<p>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?</p>	<p>More than 30' or no combustible items</p>	<p>Are there any other combustible materials near the home (within Zone 1) that a structure triage group would likely want to remove/clean up in the event of an approaching wildfire? Common items include lumber construction materials firewood propane tanks hay bales leaves wicker furniture decorative ornaments etc. If so how close to the home are these items?</p> <p>If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose "Unknown - not observed."</p>	<p>Other combustibles are extremely common. It is important for homeowners to be aware that these materials represent a risk particularly during the fire season and particularly related to ember ignition exposure.</p>
		<p>5' - 30'</p>		
		<p>Less than 5'</p>		
		<p>Unknown - not observed</p>		
<p>Roofing Materials</p>	<p>What is the most vulnerable roofing material?</p>	<p>Tile metal asphalt shingles or flat composition</p>	<p>Tile metal asphalt shingles and flat composition are commonly associated with a Class A roofing assembly - though not in all cases. Tar or rubberized roofs are most commonly found with adobe SW style homes with a flat roof. Certainly there are some additional types of roofing materials that are used besides the ones listed - in which case the assessor should make a determination using best available information related to the roofing material and its potential ignitability. In other instances multiple types of roofing materials are used particular in homes with complex roof lines dormers and extensions. In these cases we recommend rating the entire roof as whatever is the most vulnerable section.</p> <p>If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose "Unknown - not observed."</p>	<p>It is important to note that roofing material is only one factor in the roofing equation as it relates to wildland fire. During a more in-depth analysis it will be important to consider the entire roofing assembly with regards to the potential for future ignition during a wildland fire. Certain asphalt shingle and even metal roofs remain vulnerable to ignition due to the assembly. Important related factors to the roof are eaves and gutters. Open eaves represent a higher risk than soffited eaves. All vents/openings should at minimum incorporate 1/8" metal screening. Additionally gutters play a major role.</p>
		<p>Wood (shake shingles)</p>		
		<p>Unknown - not observed</p>		

WiRē Rapid Assessment Instructions: Santa Fe continued.

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
<p>Building Exterior</p>	<p>What is the most vulnerable exterior siding material?</p>	<p>Stucco cement brick stone or other noncombustible siding</p>	<p>This category includes brick stone block concrete synthetic stone metal stucco (3 stage or EIFS) fiber cement (e.g. Hardie Board) or other materials that are considered Class A or B.</p>	<p>This is probably the most challenging domain to assess during the Rapid Assessment. There are literally dozens of commonly used materials that exist on the market for the exterior cladding of a home. Many of these materials claim to be resistant to fire resistant to ignition or noncombustible. In addition it is very common for a home to incorporate multiple different types of exterior cladding/siding. Additionally some of the newer available products that fall in the general category of “fiber cement siding” have been designed to mimic wood - and are increasingly getting better at ‘looking the part’. These products can make it difficult to discern the difference. Additionally it is known that not all stucco applications meet fire resistant standards. All of this said the intent of this domain is to increase awareness related to the potential for home ignition via risk exposure vulnerabilities on the home and the role of the assessor is to determine if any such ignition vulnerabilities likely exist. Using all available information including visual observation photographs county assessor data it is up to the assessor to make a determination if any exterior cladding/siding represents a potential risk for ignition on the home and to utilize the response categories to denote these risk. After the roof the exterior siding represents the second largest (in terms of square feet) surface that is exposed to potential ignition risks. However mitigating the risk even to wood siding can be achieved through defensible space combined with a variety of other “ember mitigation” techniques.</p>
		<p>Log or heavy timbers</p>	<p>In order 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. Faux logs D-Link and square logs DO NOT qualify for this category and should be counted as “Wood or open sided”.</p>	
		<p>Wood or vinyl siding</p>	<p>Wood or vinyl siding only</p>	
		<p>Unknown - not observed</p>	<p>If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose “Unknown - not observed.”</p>	

WiRē Rapid Assessment Instructions: Santa Fe continued.

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
Combustible Balcony	Does the home have a combustible balcony attached to the structure?	No	Balconies are well known to be considerable home ignition vulnerabilities. If a balcony is attached the assessor will need to determine to what extent the attached balcony poses an ignition risk based upon an observation of the combustibility of such attachment.	NA
		Yes	While composite decking boards (e.g. Trex) are considered by many to be a better alternative than standard decking boards for the purposes of this risk assessment we are considering composite decking to fall in to the category of “combustible.”	
		Unknown - not observed	If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose “Unknown - not observed.”	
Combustible Deck	Does the home have a combustible deck attached to the structure?	No	Decks are well known to be considerable home ignition vulnerabilities. If no deck is attached to the structure then the answer is no. However if a deck is attached the assessor will need to determine to what extent the attached deck poses an ignition risk based upon an observation of the combustibility of such attachment. While composite decking boards (e.g. Trex) are considered by many to be a better alternative than standard decking boards for the purposes of this risk assessment we are considering composite decking to fall in to the category of “combustible.”	Attached decks are a complicated subject. There are many many types of decks construction styles and materials on the market. Recent research has indicated some novel approaches to mitigation for decks including covering the tops of joists with a metal wrap.
		Yes	While composite decking boards (e.g. Trex) are considered by many to be a better alternative than standard decking boards for the purposes of this risk assessment we are considering composite decking to fall in to the category of “combustible.”	
		Unknown - not observed	If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose “Unknown - not observed.”	

WiRē Rapid Assessment Instructions: Santa Fe continued.

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
Combustible Porch/Portal	Does the home have a combustible porch/portal attached to the structure?	No	Portals are unique to American Southwest architecture and well known to be considered home ignition vulnerabilities. A portal is a porch or covered patio with a roof supported by vigas projecting from the houses. Vigas are wooden beams used in the traditional adobe architecture of New Mexico. Vigas are exposed beam ends projecting from the outside of the wall. If no portal is attached to the structure then the answer is no. However if a portal is attached the assessor will need to determine to what extent the attached deck poses an ignition risk based upon an observation of the combustibility of such attachment. If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose "Unknown - not observed."	NA
		Yes		
		Unknown - not observed		
Combustible Fence	Does the home have a combustible fence attached to the structure?	No	Fences are well known to be considerable home ignition vulnerabilities. If no fence is attached to the structure then the answer is no. However if a fence is attached the assessor will need to determine to what extent the attached fence poses an ignition risk based upon an observation of the combustibility of such attachment. If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose "Unknown - not observed."	NA
		Yes		
		Unknown - not observed		
Proximity to Adjacent Homes	What is the closest distance to a neighboring home?	More than 100'	Home to home ignitions (i.e. conflagration) are a significant factor in the spread of fire through more densely built environments. Homes and structures are generally built with combustible materials and contain gutters porches and vulnerable locations where embers can get trapped and combust. When assessing the home determine the relative proximity of the nearest home. Is the nearest home more than 100 feet away? Is it less than 100 feet but more than 30 feet? Is the nearest home within 10 feet of the home being assessed? If you observe the attribute but are unsure of the correct response category choose the riskiest option. If you can not observe the attribute at all choose "Unknown - not observed."	NA
		30' - 100'		
		10' - 29'		
		Less than 10'		
		Unknown - not observed		

WiRe Rapid Assessment Instructions: Santa Fe continued.

Attribute	Attribute description	Response categories	Rationale & Additional Considerations	Related
Comments	NA	NA	This is a great place to add any notes that will help the back end data compilation and analysis efforts. It can be used for SFFD to record any information that might help WiRe interpret the RA data. The Comments field can also be used for identifying a second structure on the same parcel. Type away and help everyone understand what other things we might all need to know!	NA

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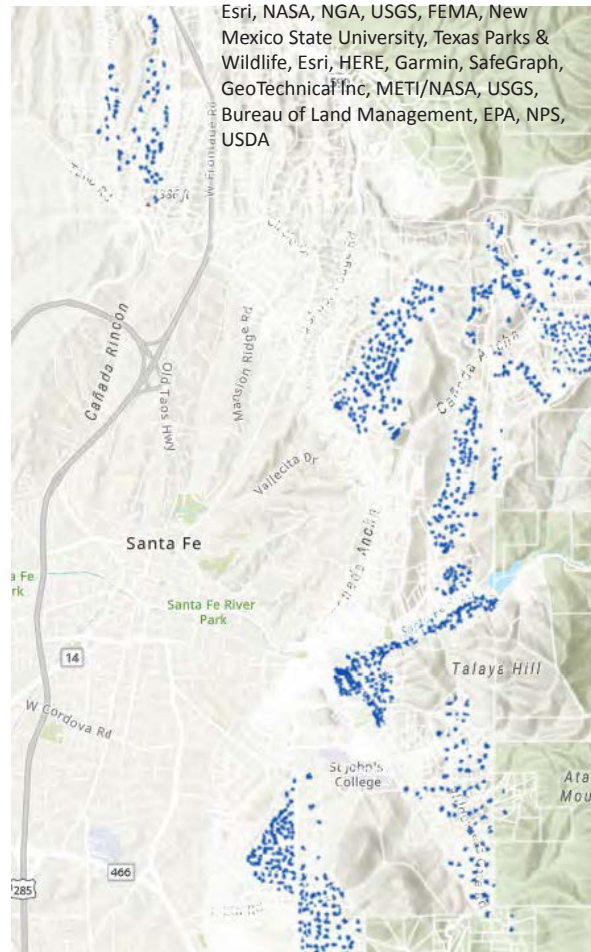
WiRē



City of Santa Fe Fire Department (SFFD) Rapid Assessment Instructions for Using Collector

Before starting the WiRē rapid wildfire risk assessments (RAs), it's important to remember the strong tie between the RA and the 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 RAs is to assess all parcels with residential structures from 9 neighborhoods in the City of Santa Fe and Santa Fe County, which comprise approximately 962 residential homes. These parcels are indicated on the map below in blue.



1. How to access the data collection app?
 - a. Download Collector onto your tablet or other device. For Android users choose 'Collector' and iPad users choose "ArcGIS Collector" as there are two apps.
 - b. Log into the app using the following credentials:
 - i. Username: [REDACTED]
 - ii. Password: [REDACTED]
 - c. There will be folder called Santa Fe WiRē RA on your display once you've logged into Collector.
 - i. Click on the folder.
 - ii. Click on the map called Santa Fe RA Form 2.
 - iii. Click on Santa Fe County Assessor with RA Form 2 – SantaFe_RA_selection

2. What to do to collect data?
 - a. Open Collector and pan to the parcel
 - b. Select a blue outlined structure, and a sidebar will pop up on the left.
 - c. Click on the link to the RA form.



- a. Click the blue Add button.
- b. Fill out the form following protocols outlined in the ARG.
- c. When done, click submit in top, right-hand corner.

d. Click on the x.



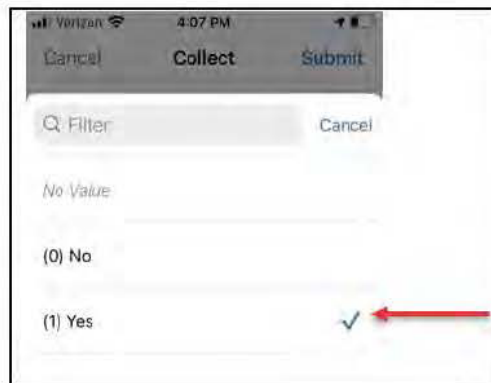
e. Click on the x again.



f. Click on the edit button.



g. Click on the drop-down and select (1) Yes for a completed survey.



- h. Click the submit button and the parcel should change to solid blue. Do NOT click the “Add Point” button!



★ Do not click this button

3. What to do when there are multiple structures on a property?
- Some parcels might have multiple structures on them. Please complete an RA for **all** residential structures on a property. To do this, assess the main residential structure first following the instructions in bullet #2 above.
 - To assess another residential structure on the same parcel, select the same parcel in Collector and follow the same procedures in bullet #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.’

Appendix C: Wildfire Research (WiRē) Rapid Assessment Summary

Begins on next page.

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WiRē



The City of Santa Fe Fire Department Rapid Assessment Summary

The City of Santa Fe Fire Department mitigation specialists conducted parcel-level rapid wildfire risk assessments in 2021. Risk assessment data collection was collected as a census of all residential properties with a structure in the study area¹. The rapid wildfire risk assessments were conducted for 965 residential properties using the standard WiRē Rapid Wildfire Risk Assessment (RA), which is comprised of a set of 13 attributes that includes access to the property, background fuels and topography, vegetation near the home, and building materials. Each attribute of the RA is evaluated relative to other private land parcels within the study area. As a result, the 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 RA, we apply a standard approach for placing the overall risk scores into five risk categories: **low** (20-240), **moderate** (241-305), **high** (306-435), **very high** (436-505), **extreme** (506-1000). This process can be iterative over time but has been validated across previous WiRē projects.

To ensure consistent, high quality data collection WiRē wildfire practitioners conducted a virtual training for those who would conduct the rapid risk assessments. A standardized reference sheet for data collectors was available for use in the field.

All parcel level assessments were conducted on the property being assessed unless access was blocked by a gated driveway or posted with no trespassing signage. While environmental and situational variables may occasionally impact the rapid assessment data collection process, City of Santa Fe Fire Department is confident that the rapid assessments collected for this project provide an accurate representation of relative wildfire risk to the parcels in the study area.

In instances when Santa Fe Fire Department mitigation specialists could not observe a risk attribute, the specialist 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.

¹ Santa Fe County Assessor data from November 2020 was used as the underlying dataset to collect data.

**This project was supported with funding from USDA Forest Service, Washington Office Fire and Aviation Management.*

**All data received and processed as of February 24, 2022*

**Document prepared March 17, 2022*

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 following tables present a summary of the City of Santa Fe Fire Department mitigation specialists’ responses to the 13 risk attributes in the RA. Additionally, the tables present the results of the overall wildfire risk rating, which is the sum of the attribute scores. The percentages might not add to 100% due to rounding. In all tables below, RA refers to rapid assessment.

1.1 Overall risk rating

Overall risk rating: RA: Based on the sum of the 13 attribute scores.		
Response categories	Score range	All RAs in study area (N=965)
Low	20-240	28%
Moderate	241-305	24%
High	306-435	45%
Very high	436-505	2%
Extreme	506-100	1%

1.2 Access

Risk attribute: Address Posting (1% of total RA score) Does the address sign meet all local standards (Posted at the driveway entrance and visible from both directions of travel along the road)		
Response categories	Score	All RAs in study area (N=965)
Yes, fully meets standard	0	78%
Address sign is visible but does not meet all standards	5	16%
No, not posted/visible from the primary road	10	7% ^a
^a Out of <i>all RAs in study area</i> , 0 were missing/unobserved.		

Risk attribute: Ingress/Egress (1% of total RA score)

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

Response categories	Score	All RAs in study area (N=965)
Yes, two or more roads in/out	0	39%
No, one road in/out	10	61% ^a

^a Out of all RAs in the study area, 0 missing/unobserved.

Risk attribute: Driveway clearance (1% of total RA score)

Does the driveway meet the horizontal and vertical clearance standards: height at least 13.5' and width at least 14'?

Response categories	Score	All RAs in study area (N=965)
Yes, fully meets all driveway standards	0	78%
Meets one, but not both, standards (height or width)	5	18%
Does not meet either standard (height and width)	10	4% ^a

^a Out of all RAs in study area, 1 was missing/unobserved (<1%) and included in the highest risk category.

Risk attribute: Driveway length (1% of total RA score)

What best describes the driveway?

Response categories	Score	All RAs in study area (N=965)
Less than 150' long	0	69%
150' or more with "adequate" turnaround	5	18%
150' or more without "adequate" turnaround	10	4% ^a

^a Out of all RAs in the study area, 1 missing/unobserved (<1%) and included in the highest risk category.

1.3 Background conditions

Risk attribute: Distance to dangerous topography (5% of total RA score)
 What is the closest distance from the home to a ridge, steep drainage, or narrow canyon?

Response categories	Score	All RAs in study area (N=965)
More than 150'	0	27%
50' - 150'	25	46%
Less than 150'	50	27% ^a

^a Out of all RAs in study area, 1 was missing/unobserved (<1%) and included in the highest risk category.

Risk attribute: Slope (2% of total RA score)
 The “slope” or “grade” 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	All RAs in study area (N=965)
Gentle - less than 20%	0	57%
Moderate - between 20% and 45%	10	36%
Steep - greater than 45%	20	7% ^a

^a Out of all RAs in study area, 1 was missing/unobserved (<1%) and included in the highest risk category.

Risk attribute: Adjacent fuels (4% of total RA 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	All RAs in study area (N=965)
Light – grass and sparse (isolated) piñon–juniper (light brush with piñon–juniper)	10	9%
Medium - moderate density piñon–juniper stand/woodland; mountain mahogany and chamisa may be present	20	73%
Dense - Heavy piñon–juniper, possibly with ponderosa pine	40	18% ^a

^a Out of all RAs in study area, 1 was missing/unobserved (<1%) and included in the highest risk category.

1.4 Defensible Space

Risk attribute: Defensible space (10% of total RA score) What is the closest distance from home to overgrown, dense, or unmaintained vegetation?		
Response categories	Score	All RAs in study area (N=965)
More than 100'	0	1%
Between 30' - 100'	50	7%
Between 5' - 29'	75	70%
Less than 5'	100	22% ^a

^a Out of *all RAs in study area*, 1 was missing/unobserved (<1%) and included in the highest risk category.

Risk attribute: Other combustibles (8% of total RA 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	All RAs in study area (N=965)
More than 30' or no combustible items	0	15%
Between 5' - 30'	40	31%
Less than 5'	80	53% ^a

^a Out of *all RAs in study area*, 22 were missing/unobserved (2%) and included in the highest risk category.

1.5 Home ignition potential

Risk attribute: Roof (30% of total RA score) What is the most vulnerable roofing material?		
Response categories	Score	All RAs in study area (N=965)
Non-combustible (tile, metal, or asphalt shingles, or flat composition)	0	99%
Combustible (wood shake shingles)	300	1% ^a

^a Out of *all RAs in study area*, 3 were missing/unobserved (<1%) and included in the highest risk category.

Risk attribute: Siding (7% of total RA score) What is the most vulnerable exterior siding material?		
Response categories	Score	All RAs in study area (N=965)
Stucco, cement, brick, stone, or other noncombustible siding	0	98%
Log or heavy timbers	35	<1%
Wood or vinyl siding	70	1% ^a

^a Out of *all RAs in study area*, 2 were missing/unobserved (<1%) and included in the highest risk category.

Risk attribute: Combustible Attachments (10% of total RA score)^a Does the home a combustibile balcony, deck, porch/portal, or fence attached to the structure?		
Response categories	Score	All RAs in study area (N=965)
No combustibile attachments	0	41%
Combustibile attachments present	100	59% ^b

^a Santa Fe Fire Department mitigation specialists answered four separate questions about the types of combustibile attachments, one each for: balcony, deck, porch/portal, and fence. Answers to those questions were used to construct the combustibile attachments risk attribute.

^b Out of *all RAs in study area*, 35 were missing/unobserved (4%) and included in the highest risk category.

Risk attribute: Proximity to adjacent homes (20% of total RA score) What is the closest distance to a neighboring home?		
Response categories	Score	All RAs in study area (N=965)
More than 100'	0	43%
30' – 100'	50	47%
10' – 29'	100	8%
Less than 10'	200	1% ^a

^a Out of *all RAs in study area*, 1 was missing/unobserved (<1%) and included in the highest risk category.

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

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The City of Santa Fe Fire Department Rapid Assessment Compared to Household Survey Responses

The City of Santa Fe Fire Department conducted parcel-level rapid wildfire risk assessments and administered a household survey in 2021. 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 411 properties for which we have a rapid assessment paired with household survey. There are an additional 554 properties with only a rapid assessment, for a total of 965 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, which are organized by categories of access, background conditions, defensible space, and home ignition potential.

**This project was funded by USDA Forest Service, Washington Office Fire and Aviation Management.*

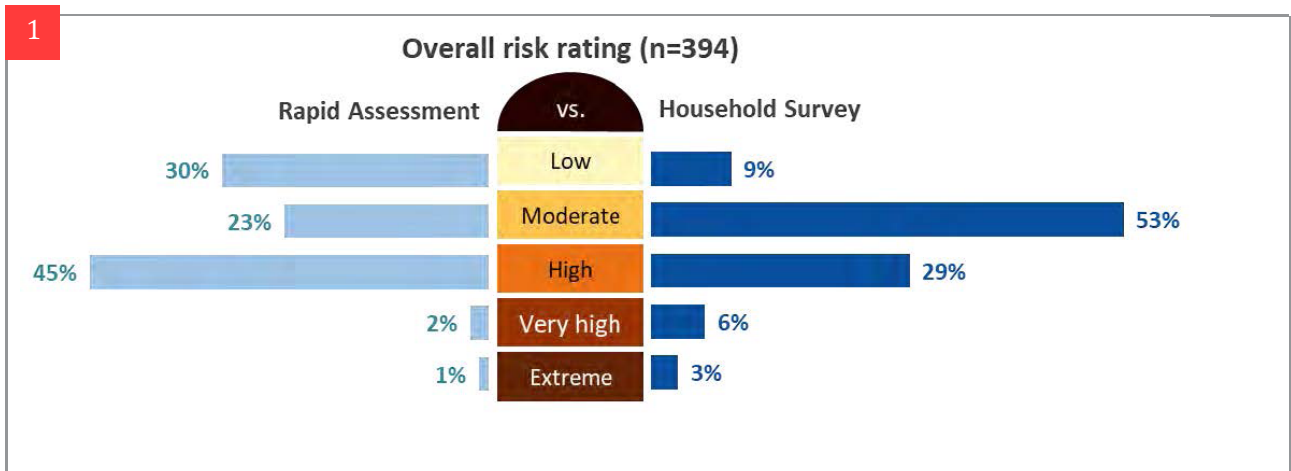
**All data received and processed as of February 24, 2022*

**Document prepared April 12, 2022*

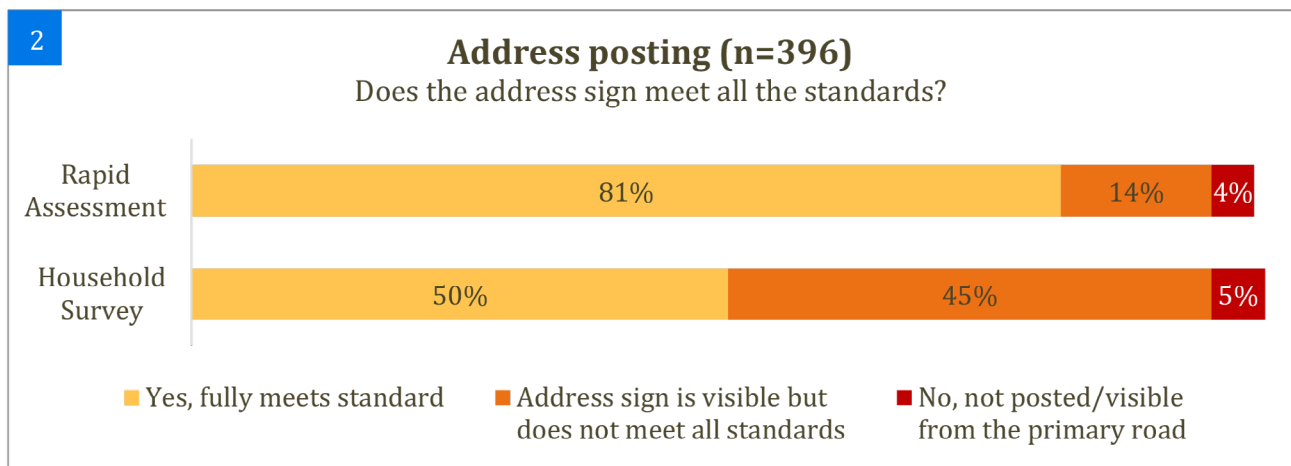
1. Comparison of paired WiRē Rapid Assessment vs. Household Survey

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's 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



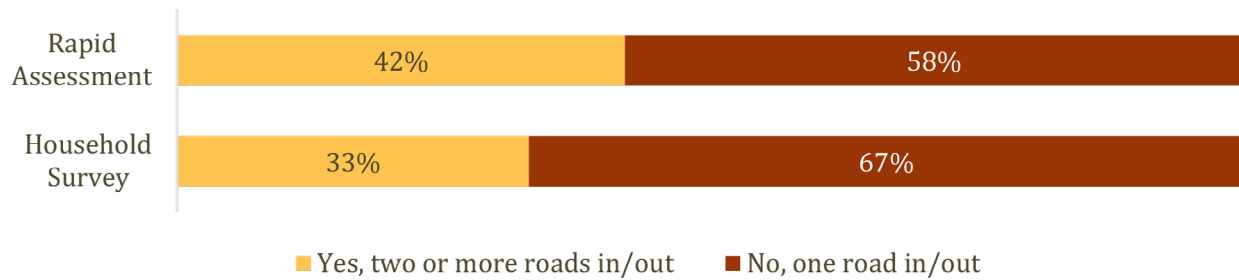
1.2 Access



3

Ingress/Egress (n=393)

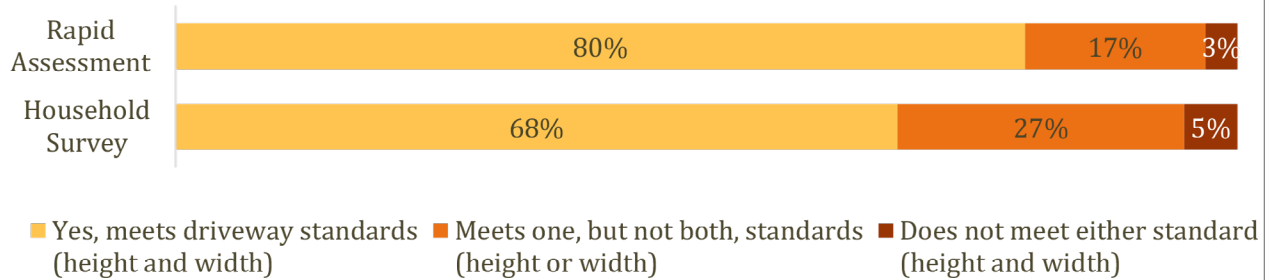
If the road to access the home was blocked due to a wildfire, is there another road to get out of the community?



4

Driveway clearance (n=346)

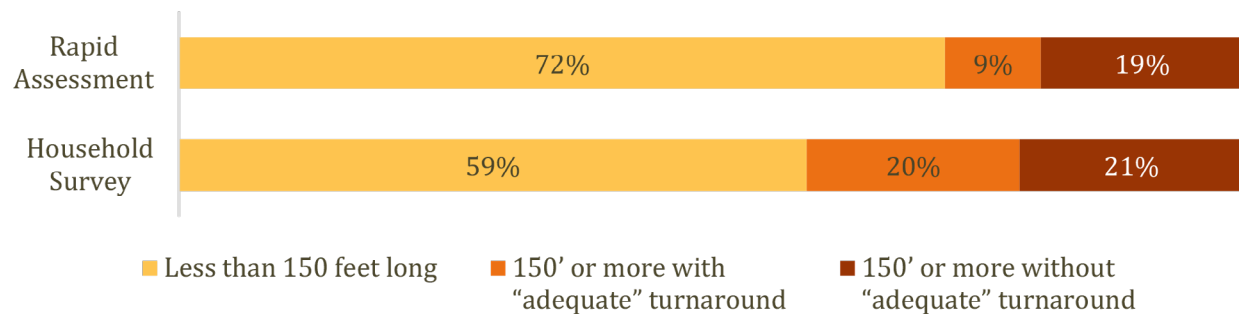
Does the driveway meet the horizontal and vertical clearance standards?



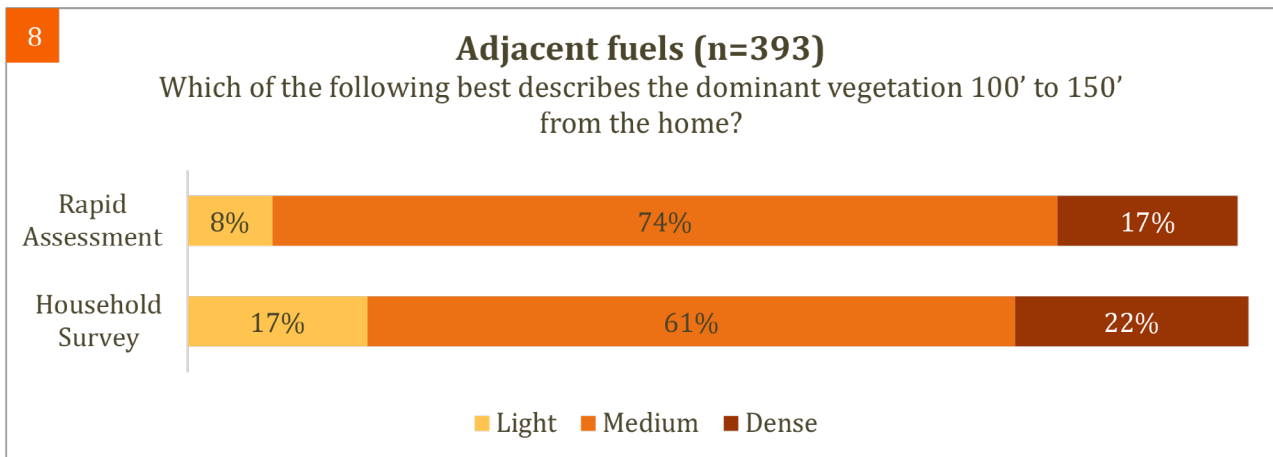
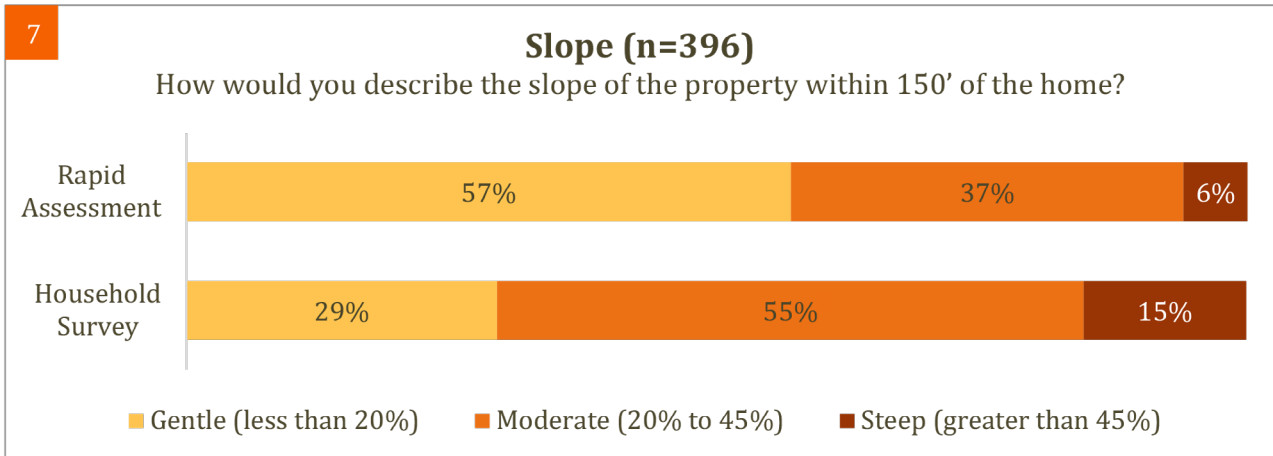
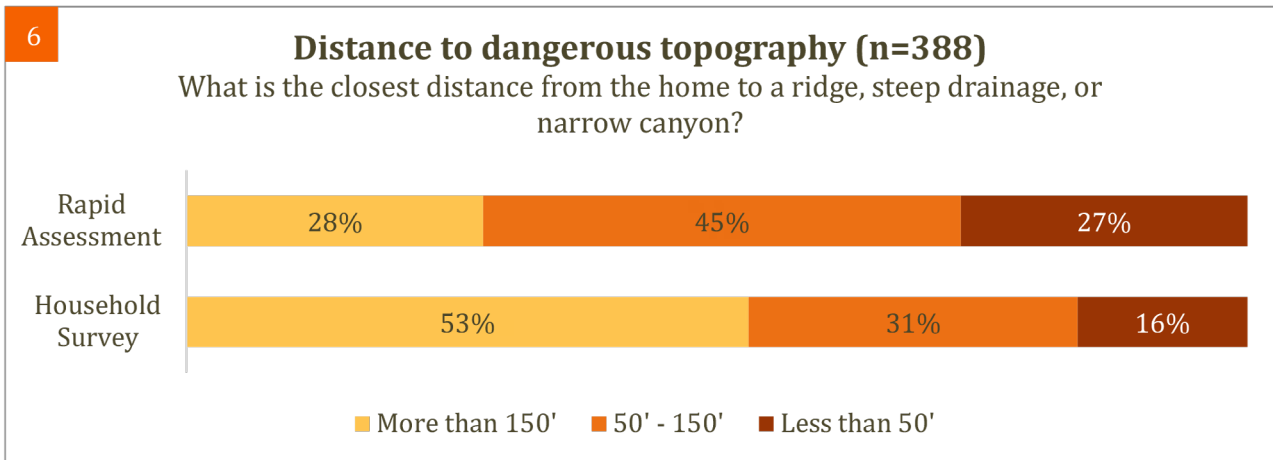
5

Driveway length (n=359)

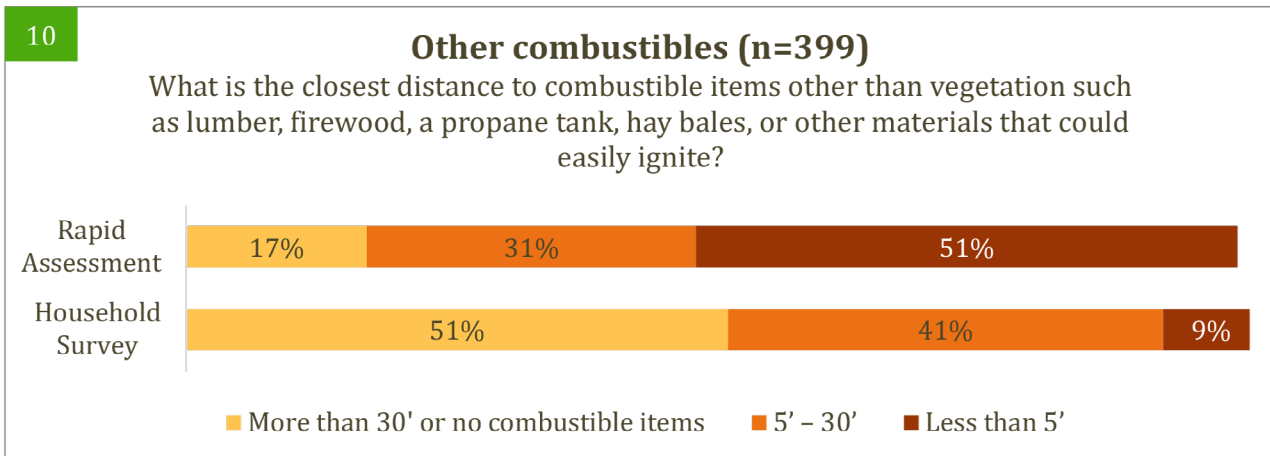
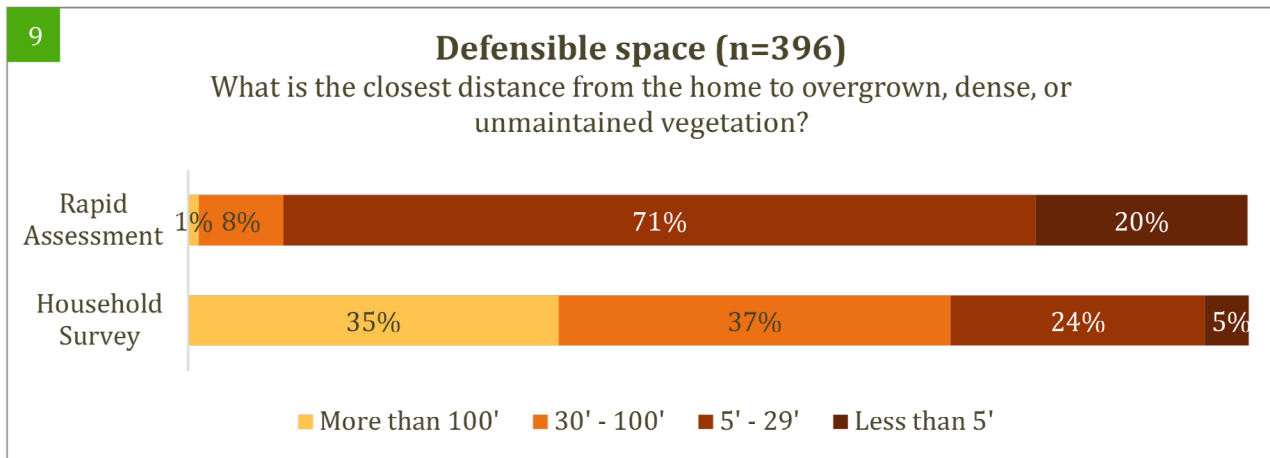
What best describes the driveway?



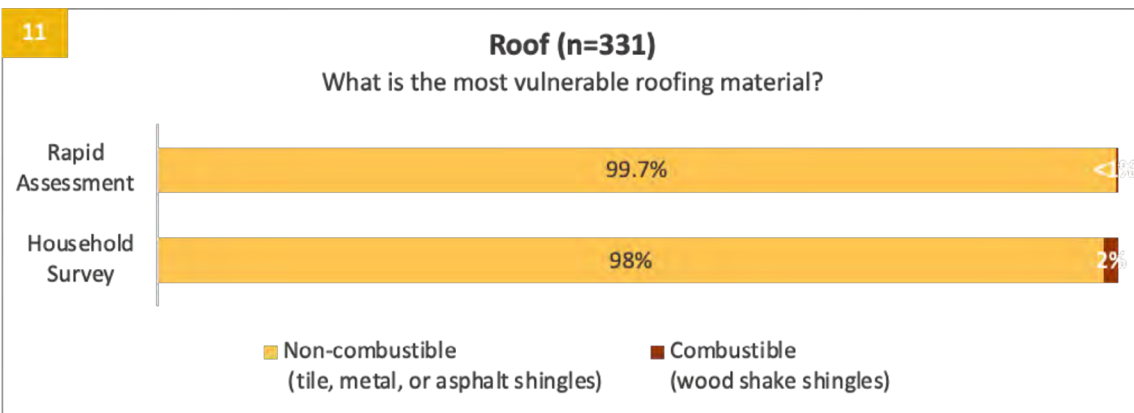
1.3 Background conditions

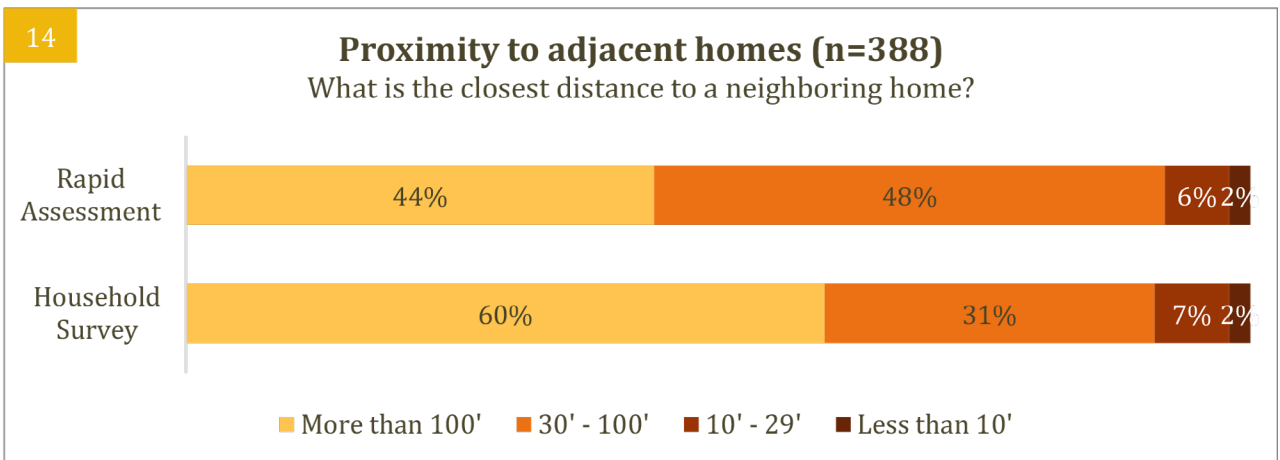
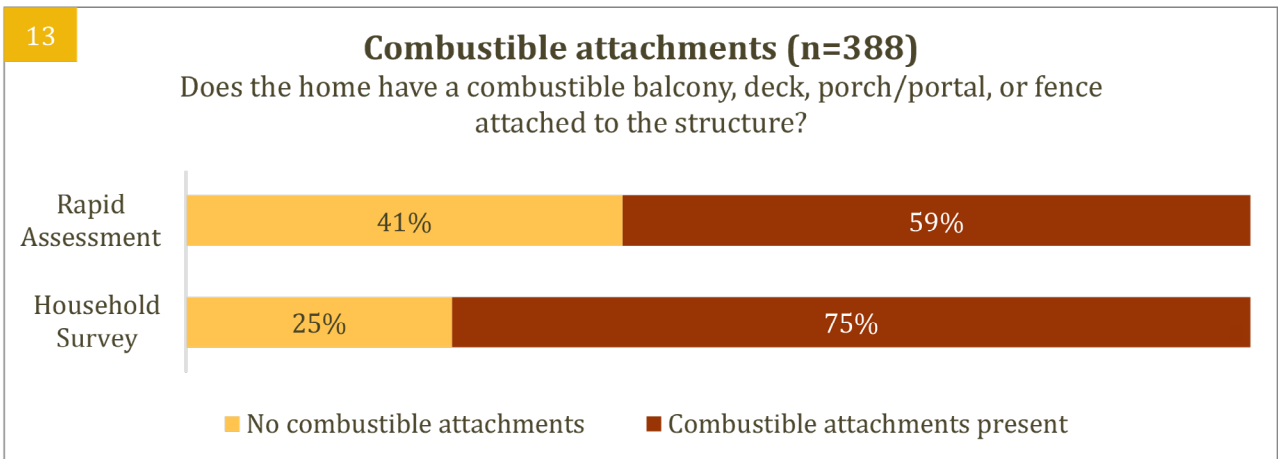
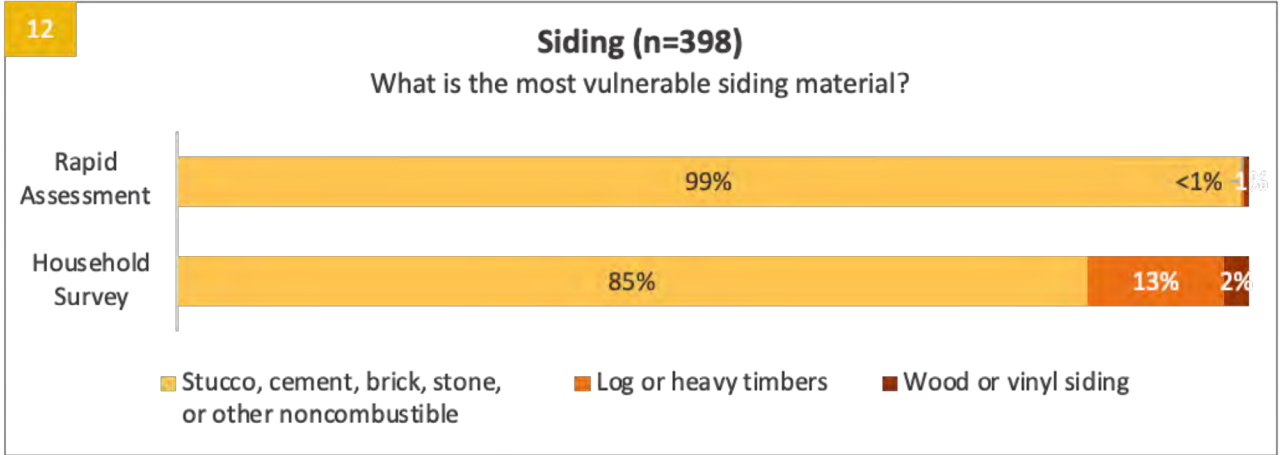


1.4 Defensible space



1.5 Home ignition potential





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. In all tables below, RA refers to risk 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 RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=394)	Self-assessment from household surveys (N=394)
Low	28%	30%	9%
Moderate	24%	23%	53%
High	45%	45%	29%
Very high	2%	2%	6%
Extreme	1%	1%	3%

2.2 Access

Risk attribute: Address Posting Does the address sign meet all local standards (Posted at the driveway entrance and visible from both directions of travel along the road)			
Response categories	All RAs in study area (N=965)	Subsets of RAs for parcels that returned a household survey (N=396)	Self-asesment from household surveys (N=396)
Yes, fully meets standard	78%	82%	50%
Address sign is visible but does not meet all standards	16%	14%	45%
No, not posted/visible from the primary road	7%	4%	5%

Risk attribute: Ingress/Egress
 If the road to access the home was blocked due to wildfire, is there another road to get out of the community?

Response categories	All RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=393)	Self-assessment from household surveys (N=393)
Yes, two or more roads in/out	39%	42%	33%
No, one road in/out	61%	58%	67%

Risk attribute: Driveway clearance
 Does the driveway meet the horizontal and vertical clearance standards: height at least 13.5' and width at least 14'?

Response categories	All RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=346)	Self-assessment from household surveys (N=346)
Yes, fully meets all driveway standards	78%	80%	68%
Meets one, but not both , standards (height or width)	18%	17%	27%
Does not meet either standard (height and width)	4% ^a	3%	5%

^a Out of all RAs in study area, 1 was missing/unobserved (<1%) and included in the highest risk category.

Risk attribute: Driveway length
 What best describes the driveway?

Response categories	All RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=359)	Self-assessment from household surveys (N=359)
Less than 150' long	69%	72%	59%
150' or more with "adequate" turnaround	13%	9%	20%
150' or more without "adequate" turnaround	19% ^a	19%	21%

^a Out of all RAs in the study area, 1 missing/unobserved (<1%) and included in the highest risk category.

2.3 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 RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=388)	Self-assessment from household surveys (N=388)
More than 150'	27%	28%	53%
50' - 150'	46%	45%	31%
Less than 150'	27% ^a	27% ^b	16%

^a Out of *all RAs in study area*, 1 was missing/unobserved (<1%) and included in the highest risk category.
^b Out of the *subset of RAs for parcels that returned a household survey*, 1 was missing/ unobserved (<1%) and included in the highest risk category.

Risk attribute: Slope			
The “slope” or “grade” 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	All RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=396)	Self-assessment from household surveys (N=396)
Gentle (less than 20%)	57%	57%	29%
Moderate (20% to 45%)	36%	37%	55%
Steep (greater than 45%)	7% ^a	6%	15%

^a Out of *all RAs in study area*, 1 was missing/unobserved (<1%) and included in the highest risk category.

Risk attribute: Adjacent fuels			
Which of the following best describes the dominant vegetation 100' to 150' from the home? This may be outside the property boundary.			
Response categories	All RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=393)	Self-assessment from household surveys (N=393)
Light – grass and sparse (isolated) piñon–juniper (light brush with piñon–juniper)	9%	8%	17%
Medium - moderate density piñon–juniper stand/ woodland; mountain mahogany and chamisa may be present	73%	74%	61%
Dense - Heavy piñon–juniper, possibly with ponderosa pine	18% ^a	17% ^b	22%
^a Out of <i>all RAs in study area</i> , 1 was missing/unobserved (<1%) and included in the highest risk category. ^b Out of the <i>subset of RAs for parcels that returned a household survey</i> , 1 was missing/ unobserved (<1%) and included in the highest risk category.			

2.4 Defensible space

Risk attribute: Defensible space			
What is the closest distance from home to overgrown, dense, or unmaintained vegetation?			
Response categories	All RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=396)	Self-assessment from household surveys (N=396)
More than 100'	1%	1%	35%
Between 30' - 100'	7%	8%	37%
Between 5' - 29'	70%	71%	24%
Less than 5'	22% ^a	20% ^b	5%
^a Out of <i>all RAs in study area</i> , 1 was missing/unobserved (<1%) and included in the highest risk category. ^b Out of the <i>subset of RAs for parcels that returned a household survey</i> , 1 was missing/ unobserved (<1%) and included in the highest risk category.			

Risk attribute: Other combustibles

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 RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=399)	Self-assessment from household surveys (N=399)
More than 30' or no combustible items	15%	17%	51%
Between 5' - 30'	31%	31%	41%
Less than 5'	53% ^a	51% ^b	9%

^a Out of all RAs in study area, 22 were missing/unobserved (2%) and included in the highest risk category.

^b Out of the subset of RAs for parcels that returned a household survey, 3 were missing/ unobserved (2%) and included in the highest risk category.

2.5 Home ignition potential

Risk attribute: Roof

What is the most vulnerable roofing material?

Response categories	All RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=331)	Self-assessment from household surveys (N=331)
Non-combustible (tile, metal, or asphalt shingles, or flat composition)	99%	>99%	98%
Combustible (wood shake shingles)	1% ^a	<1%	2%

^a Out of all RAs in study area, 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 RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=398)	Self-assessment from household surveys (N=398)
Stucco, cement, brick, stone, or other noncombustible siding	98%	99%	85%
Log or heavy timbers	<1%	<1%	13%
Wood or vinyl siding	1% ^a	1% ^b	2%

^a Out of all RAs in study area, 2 were missing/unobserved (<1%) and included in the highest risk category.
^b Out of the subset of RAs for parcels that returned a household survey, 1 was missing/ unobserved (<1%) and included in the highest risk category.

Risk attribute: Combustible Attachments (e.g., Balcony, Decking, Fencing)
Does the home a combustibile balcony, deck, porch/portal, or fence attached to the structure?

Response categories	All RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=388)	Self-assessment from household surveys (N=388)
No combustibile attachments	41%	41%	25%
Combustibile attachments present	59% ^a	59% ^b	75%

^a Out of all RAs in study area, 35 were missing/unobserved (4%) and included in the highest risk category.
^b Out of the subset of RAs for parcels that returned a household survey, 14 were missing/ unobserved (4%) and included in the highest risk category.

Risk attribute: Proximity to adjacent homes
What is the closest distance to a neighboring home?

Response categories	All RAs in study area (N=965)	Subset of RAs for parcels that returned a household survey (N=398)	Self-assessment from household surveys (N=398)
More than 100'	43%	44%	60%
30' – 100'	47%	48%	31%
10' – 29'	8%	6%	7%
Less than 10'	1% ^a	2%	2%

^a Out of all RAs in study area, 1 was missing/unobserved (<1%) and included in the highest risk category.

Appendix E: Wildfire Research (WiRē) Household Survey Summary

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Living with Wildfire in Santa Fe in 2021



Photo credit: City of Santa Fe website, 2018



City of Santa Fe Fire Department
PO Box 909, 200 Murales Road
Santa Fe, NM 87505

Entered survey responses: 419

n = number of observations

Response rate: 45.6%

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

Red ALL CAPS are variable names

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

**All data received and processed as of March 14, 2022*

**Document prepared January 13, 2023*

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

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

Correct: ● Incorrect: ☑ ☒ ● ○

OWNRENT (n=412)

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

99.7% Own

<1% Rent

1.2. What months do you occupy your Santa Fe home? *(Fill in all that apply)*

N=409

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
77%	86%	84%	83%	85%	89%	92%	90%	93%	89%	89%	86%	88%	1%

FULLTIME (n=410)

1.3. In what year did you move to your Santa Fe home? *(Fill in the blank)*

AVERAGE = 2005

YRBUILD (n=400)

1.4. In what year was your Santa Fe home originally built? *(Fill in the blank)*

AVERAGE = 1988

RISKAWAR (n=413)

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

36% Very aware

45% Somewhat aware

16% Not aware

3% Don't remember

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

FIRE (n=417)

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

- 0% There has been a wildfire on my property
- 2% Less than 2 miles away but not on my property
- 28% 2 to 10 miles away
- 51% More than 10 miles away
- 19% Not sure

2.2. Has your Santa Fe home ever had smoke or fire damage from a wildfire? *(Fill in one circle per row)*

		No	Yes
EVACUATED (n=416)	I have evacuated from my Santa Fe home due to a wildfire or threat of a wildfire	98%	2%
SMOKEDAM (n=414)	My Santa Fe home has had smoke damage	99%	1%
FIREDAM (n=413)	My Santa Fe home has had wildfire damage	99%	1%
DESTROY (n=413)	My Santa Fe home was destroyed by a wildfire	99%	1%

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

		No	Yes	Not applicable
EVACPPL (n=412)	For the people in my household	35%	65%	-
EVACPETS (n=409)	For the pets in my household and on my property	24%	37%	39%
EVACLIVSTOC (n=399)	For livestock on my property	11%	1%	88%

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)

		Completed action?		Want more information about the action?		
		No	Yes	No	Yes	
Identify how I will be notified about an evacuation	EVACACT1 (n=342)	63%	37%	EVACINFO1 (n=306)	23%	77%
Sign up for a wildfire evacuation notification system (Alert Santa Fe - https://www.santafenm.gov/alertsantafe)	EVACACT2 (n=342)	58%	42%	EVACINFO2 (n=292)	30%	70%
Identify safe evacuation routes	EVACACT3 (n=353)	39%	61%	EVACINFO3 (n=291)	34%	66%
Identify a location that my household will evacuate to	EVACACT4 (n=348)	55%	45%	EVACINFO4 (n=288)	42%	58%
Identify what to take and what to leave behind during an evacuation	EVACACT5 (n=357)	47%	53%	EVACINFO5 (n=275)	41%	59%
Discuss evacuation with my neighbors	EVACACT6 (n=352)	73%	27%	EVACINFO6 (n=268)	54%	46%
Create a checklist for steps to take before evacuating	EVACACT7 (n=352)	74%	26%	EVACINFO7 (n=283)	27%	73%
Identify a place to stay during a long-term evacuation (i.e., more than a few days)	EVACACT8 (n=354)	56%	44%	EVACINFO8 (n=274)	53%	47%

2.5. Please tell us about your experiences with your **homeowners insurance** for your Santa Fe home. *(Fill in one circle per row)*

		No	Yes	DK
INSURE2 (n=408)	Has your current or a previous insurance company ever provided information on reducing the risk of wildfire?	52%	34%	15%
INSURE3 (n=409)	Did an insurance company ever refuse to provide or renew your insurance because of the risk of wildfire?	80%	17%	2%
INSURE4 (n=408)	Do you pay a higher premium for your insurance due to wildfire risk?	35%	23%	42%
INSURE10 (n=408)	Do you receive a discount on your insurance premium because you have reduced wildfire risk on your property?	62%	9%	29%
INSURE12 (n=408)	Do you think your home is adequately insured against loss from a wildfire?	9%	72%	20%
INSURE13 (n=408)	Has your current insurance company ever required you to take action to reduce wildfire risk in order to continue coverage?	86%	10%	4%
INSURE14 (n=409)	Has your current insurance company offered private firefighting services?	87%	6%	7%

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

3.1. Does your Santa Fe home have any of the following roofing materials?
(Fill in all that apply)

		No	Yes
ROOFTYPE1 (n=338)	Tile, metal, asphalt shingles, or flat composition	1%	99%
ROOFTYPE2 (n=338)	Wood (shake shingles)	99%	1%

3.2. Does your Santa Fe home have any of the following exterior siding materials?
(Fill in all that apply)

		No	Yes
SIDETYPE1 (n=406)	Stucco, cement, brick, stone, or other noncombustible siding	<1%	99.5%
SIDETYPE2 (n=406)	Log or heavy timbers	86%	14%
SIDETYPE3 (n=406)	Wood or vinyl siding	98%	2%

3.3. Does your Santa Fe home have a **combustible** balcony, deck, porch/portal, or fence attached to the structure? (Fill in one circle per row)

	Combustible...	No	Yes
ATTACHDECK (n=378)	Deck	70%	30%
ATTACHFENCE (n=376)	Fence	64%	36%

COMBUST_A (n=407)

3.4. What is the **closest** distance from your Santa Fe home to combustible items other than vegetation such as lumber, firewood, a propane tank, hay bales, or other materials that could easily ignite? (Fill in one circle)

- 51% More than 30 feet or no combustible items
- 40% 5 – 30 feet
- 9% Less than 5 feet

CLOSEVEG_A (n=404)

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

- 35% More than 100 feet
- 36% 30 – 100 feet
- 24% 5 – 29 feet
- 5% Less than 5 feet

DOMVEG_A (n=400)

3.6. Which of the following best describes the **majority** of vegetation on your Santa Fe property between 100 and 150 feet from your home? That area might be outside your property boundary and include properties immediately surrounding you. *(Fill in one circle)*

- 16% Grasses and scattered shrubs with minimal dead wood
- 61% Scattered deciduous and evergreen trees; occasional low hanging branches and dead wood
- 23% Dense shrubs and low hanging branches; continuous evergreens and moderate dead wood

CLOSEHOME (n=406)

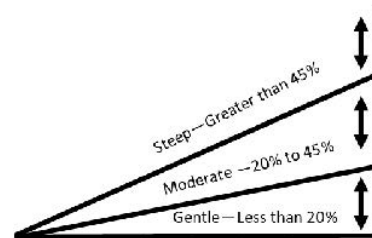
3.7. What is the **closest** distance from your Santa Fe home to a neighboring home? *(Fill in one circle)*

- 60% More than 100 feet
- 31% 30 - 100 feet
- 7% 10 – 29 feet
- 2% Less than 10 feet

SLOPE (n=404)

3.8. The “slope” or “grade” of a property refers to the steepness of the land. How would you describe the slope within 150 feet of your Santa Fe home? *(Fill in one circle)*

- 16% Steep – Greater than 45%
- 56% Moderate – 20% to 45%
- 28% Gentle – Less than 20%



RIDGE (n=396)

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

- 52% More than 150 feet
- 31% 50 – 150 feet
- 17% Less than 50 feet

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

	No	Yes
DRIVEWAYW_C (n=364) is narrower than 14 feet wide	74%	26%
TURNARND_A (n=383) has room for a fire truck to turn around	64%	36%

HOMENUM_A (n=404)

3.11 Is the address number of your Santa Fe home posted at the end of your driveway and visible from the road? *(Fill in one circle)*

- 50% Yes, it's posted and visible from both directions
- 45% Yes, it's posted and visible from only one direction
- 5% No, it's not visible from the road

ROADS (n=401)

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

- 68% No
- 32% Yes

RISKRATE (n=402)

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 Santa Fe property's current overall wildfire risk rating? *(Fill in one circle)*

- 9% Low risk
- 52% Moderate risk
- 29% High risk
- 6% Very high risk
- 3% Extreme risk

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

TALKFIRE (n=404)

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

43% No
57% Yes

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

		No	Yes
ACTIVITIES1 (n=404)	Reduced vegetation on my Santa Fe property (ex. cleared/pruned weeds, brush, and trees)	9%	91%
ACTIVITIES7 (n=379)	Regularly cleared my roof and gutters of leaves and pine needles	23%	77%
ACTIVITIES8 (n=389)	Regularly mowed and raked around my Santa Fe home	27%	73%
ACTIVITIES2 (n=389)	Made my Santa Fe home more fire resistant (ex. replaced roofing, siding, added hardscaping)	51%	49%
ACTIVITIES3 (n=402)	Helped neighbor(s) reduce vegetation on their properties	83%	17%
ACTIVITIES4 (n=398)	Helped reduce vegetation on community property (ex. HOA, subdivision)	80%	20%
ACTIVITIES5 (n=402)	Helped reduce vegetation on nearby public lands (ex. county, state, federal lands)	96%	4%
ACTIVITIES6 (n=402)	Participated in a community wildfire activity (ex. meeting, chipper day, etc.)	74%	26%
ACTIVITIES9 (n=403)	Met with a wildfire professional at your home to evaluate and discuss your property's wildfire risk	65%	35%

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

		A lot	Somewhat	Not at all
CONTRIB1 (n=398)	Vegetation on my property	19%	66%	15%
CONTRIB2 (n=394)	Physical characteristics of my house or other buildings (ex. roofing or siding) on my property	8%	40%	52%
CONTRIB3 (n=400)	Vegetation on my neighbors' properties	21%	59%	20%
CONTRIB4 (n=399)	Vegetation on nearby public or large undeveloped land	38%	42%	20%
CONTRIB5 (n=400)	Lack of nearby water supply (ex. hydrant or cistern) for fire suppression	21%	31%	49%

NEIGHBORACT (n=379)

4.4. How many of your immediate neighbors do you think have taken action to reduce wildfire risk on their properties (ex. removing dense vegetation or switching to noncombustible siding) *(Fill in one circle)*

- 4% All my neighbors have taken action
- 21% Most of my neighbors have taken action
- 60% Some of my neighbors have taken action
- 16% None of my neighbors have taken action

4.5. How acceptable to you are the following approaches to reducing wildfire risk on nearby public lands? *(Fill in one circle per row)*

		Extremely acceptable	Very acceptable	Moderately acceptable	Slightly acceptable	Not at all acceptable
ACCEPT1 (n=404)	Removing trees and reducing other vegetation (thinning/fuel breaks) on nearby public lands	48%	33%	14%	4%	1%
ACCEPT2 (n=405)	Burning piles of vegetation (slash piles) on nearby public lands	36%	29%	16%	9%	10%
ACCEPT3 (n=402)	Conducting a prescribed fire ignited by fire managers on nearby public lands	34%	34%	18%	6%	7%
ACCEPT4 (n=403)	Managing a naturally ignited fire (lightning) on nearby public lands	47%	31%	12%	5%	5%
ACCEPT6 (n=405)	Adopting growth policies or land use regulations that limit new development in fire-prone areas in Santa Fe	51%	29%	13%	5%	2%
ACCEPT7 (n=406)	Adopting building codes that require fire resistant materials for structures located in fire-prone areas in Santa Fe	53%	32%	12%	2%	1%
ACCEPT8 (n=406)	Adopting development standards that require vegetation management (ex. removing or thinning trees and mowing grass) on lots located in fire-prone areas in Santa Fe	41%	34%	17%	7%	1%
ACCEPT15 (n=403)	Supporting a Fireshed Ambassador program that coordinates, trains, and provides resources to volunteers who inform and encourage their neighbors to prepare for wildfire	48%	33%	15%	2%	2%
ACCEPT16 (n=401)	Increasing existing City capacity for wildfire risk reduction and water protection	58%	32%	8%	1%	1%

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 (n=392)	With proper technology, we can control most wildfires.	6%	29%	33%	27%	5%
STATE3 (n=397)	We should put out wildfires that threaten human life.	61%	35%	4%	1%	0%
STATE4a (n=392)	We should put out wildfires that threaten homes.	46%	46%	6%	1%	<1%
STATE5 (n=394)	During a wildfire, saving homes should be a priority over saving forests.	28%	38%	26%	7%	1%
STATE6 (n=396)	Wildfires are a natural part of the balance of a healthy forest/ecosystem.	42%	45%	11%	2%	0%
STATE11 (n=399)	I live here for the trees and will not remove any of them to reduce wildfire risk.	2%	6%	18%	48%	26%
STATE13 (n=397)	Managing the wildfire danger is a government responsibility, not mine.	2%	4%	19%	52%	23%
STATE14 (n=394)	Homeowners' actions to reduce wildfire are not effective.	<1%	3%	14%	58%	25%
STATE15 (n=396)	My property is at risk of wildfire.	15%	53%	18%	11%	2%
STATE17 (n=399)	My effort to reduce wildfire risk on my property is ineffective because of the heavy vegetation on my neighbors' properties.	5%	18%	34%	39%	5%
STATE19 (n=394)	Local firefighters have sufficient resources to keep the wildfire from spreading.	<1%	6%	44%	36%	13%
STATE20 (n=394)	Local firefighters have sufficient resources to protect threatened homes.	<1%	8%	47%	32%	12%
STATE21 (n=397)	Firefighters should put their lives at risk to protect my home.	1%	2%	16%	45%	36%
STATE22 (n=396)	Wildfires threaten my community water supply.	18%	42%	32%	6%	2%
STATE24 (n=398)	I plan to move out of the area in the next 12 months because of wildfires.	<1%	1%	6%	28%	65%
STATE25 (n=395)	Development in fire-prone areas of Santa Fe increases the wildfire risk to my Santa Fe property	13%	31%	36%	14%	6%

5.2. If there is a wildfire on your Santa Fe 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=392)	I would put the fire out.	7%	5%	16%	24%	46%	1%
LACT2 (n=389)	The fire department would save my home.	5%	24%	44%	21%	5%	<1%
LACT3 (n=389)	My home would have smoke damage.	16%	47%	28%	7%	1%	1%
LACT4 (n=389)	My home would have some physical damage.	11%	43%	36%	8%	1%	1%
LACT5 (n=394)	My home would be destroyed.	3%	16%	37%	31%	12%	1%
LACT6 (n=388)	I would lose money due to the loss of business or income on my property.	8%	15%	13%	12%	17%	36%
LACT7 (n=391)	My trees and landscape would burn.	21%	44%	25%	8%	1%	1%
LACT9 (n=390)	My neighbors' homes would be damaged or destroyed.	6%	31%	40%	17%	4%	2%
LACT12 (n=389)	Direct flame would ignite my home.	6%	22%	32%	29%	11%	1%
LACT13 (n=389)	Embers would ignite my home.	6%	23%	39%	24%	7%	1%
LACT14 (n=387)	Nearby homes would ignite my home.	3%	12%	31%	29%	23%	2%

CHANCES1 (n=394)

5.3. What do you think is the chance that a wildfire will be on your Santa Fe 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%	
0%	1%	0%	1%	1%	9%	5%	9%	23%	43%	8%	

CHANCES2 (n=392)

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 Santa Fe home? (Fill in one circle)

For sure										No chance	
100%	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%	
4%	4%	9%	11%	6%	21%	7%	12%	11%	15%	1%	

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)*

	Received information from source	Usefulness of information among respondents who received information from the source (sums to ~100%)				
		Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
City of Santa Fe Fire Department	SOURCEREC1 (n=389) 61%	SOURCEUSE1 (n=240) 23%	41%	27%	8%	<1%
Santa Fe County Fire Department	SOURCEREC1_wr017 (n=386) 37%	SOURCEUSE1_wr017 (n=145) 20%	38%	32%	8%	1%
Community group (ex. Homeowners association)	SOURCEREC2 (n=391) 55%	SOURCEUSE2 (n=215) 17%	35%	29%	18%	1%
Fireshed Ambassadors Program	SOURCEREC25 (n=388) 13%	SOURCEUSE25 (n=52) 33%	29%	24%	8%	6%
Local arborist/contractor	SOURCEREC28 (n=392) 29%	SOURCEUSE28 (n=116) 11%	34%	34%	15%	6%
Local government	SOURCEREC29 (n=386) 20%	SOURCEUSE29 (n=77) 9%	21%	38%	22%	9%
Firewise USA®	SOURCEREC5 (n=387) 16%	SOURCEUSE5 (n=63) 29%	34%	23%	6%	8%
Ready, Set, Go! program	SOURCEREC24 (n=387) 16%	SOURCEUSE24 (n=61) 23%	25%	22%	22%	8%
New Mexico State Forestry	SOURCEREC37 (n=386) 12%	SOURCEUSE37 (n=49) 13%	27%	35%	19%	6%
USDA Forest Service (Santa Fe National Forest)	SOURCEREC14 (n=389) 19%	SOURCEUSE14 (n=76) 15%	29%	33%	19%	4%
National Park Service	SOURCEREC34 (n=387) 10%	SOURCEUSE34 (n=38) 11%	22%	38%	22%	8%
Bureau of Land Management	SOURCEREC15 (n=388) 9%	SOURCEUSE15 (n=34) 12%	15%	33%	24%	15%
Media (newspaper, TV, radio, internet)	SOURCEREC4 (n=390) 55%	SOURCEUSE4 (n=216) 6%	14%	37%	35%	8%

6.2. How do you currently receive information about wildfire risk reduction and how would you prefer to receive information? Please answer **both** questions for each row.
 (Fill in two circles per row, one for each question)

		I receive information about how to reduce wildfire risk on my property by...		I prefer to receive information about how to reduce wildfire risk by...	
		No	Yes	No	Yes
Email/e-newsletter	RECEIVEINFO1 (n=368)	53%	47%	WANTINFO1 (n=362)	11% 89%
Mailed newsletter	RECEIVEINFO2 (n=357)	63%	37%	WANTINFO2 (n=351)	37% 63%
Community meetings	RECEIVEINFO3 (n=372)	64%	36%	WANTINFO3 (n=348)	49% 51%
In-person interactions	RECEIVEINFO4 (n=364)	63%	37%	WANTINFO4 (n=348)	44% 56%
Social media (Facebook, Twitter, Nextdoor)	RECEIVEINFO5 (n=369)	85%	15%	WANTINFO5 (n=351)	79% 21%
Internet (non-social media)	RECEIVEINFO6 (n=363)	66%	34%	WANTINFO6 (n=355)	41% 59%
TV news	RECEIVEINFO7 (n=365)	63%	37%	WANTINFO7 (n=352)	59% 41%
Newspaper	RECEIVEINFO8 (n=369)	56%	44%	WANTINFO8 (n=354)	50% 50%
Radio	RECEIVEINFO9 (n=364)	78%	22%	WANTINFO9 (n=355)	72% 28%

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 Santa Fe property.

7.1. Do any of the following **prevent you** from taking action to reduce the wildfire risk on your Santa Fe property (ex. cutting trees, changing roof/siding?)
 (Fill in all circles that apply for each row)

	FACTOR1 (n=391)	FACTOR2 (n=391)	FACTOR3_a (n=391)	FACTORNO1 (n=391)
Personal resources	Financial cost 18%	Time to do the work 19%	Physical ability to do the work 31%	None of these 56%
Lack of specific information about...	FACTOR11 (n=378) The factors contributing to my property's wildfire risk 18%	FACTOR4 (n=378) How to reduce wildfire risk on my property 24%	FACTOR12 (n=378) Where to dispose of vegetation/slash 24%	FACTORNO2 (n=378) None of these 56%
Personal perspectives	FACTOR6 (n=386) I do not want to change the way my property looks 16%	FACTOR5_a (n=386) I do not think taking action would reduce my property's wildfire risk 14%	FACTOR13 (n=386) It's a low priority to me 6%	FACTORNO3 (n=386) None of these 68%
Community	FACTOR14 (n=383) Lack of options for disposing vegetation/slash 24%	FACTOR9_a (n=383) Restrictions on the changes I can make to my property 9%	FACTOR15 (n=383) Social pressure from neighbors 1%	FACTORNO4 (n=383) None of these 69%

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

Resources	INCENTV1 (n=386) Cost-share or financial assistance 29%	INCENTV3 (n=386) Help doing the work 48%	INCENTV4 (n=386) Recommended contractors 38%	INCENTVNO1 (n=386) None of these 31%
	INCENTV6 (n=385) A report describing my property's wildfire risk factors 55%	INCENTV7 (n=385) Videos showing how to reduce risk on a property in my area 26%	INCENTV8 (n=385) One-on-one visit with wildfire risk experts on my property 56%	INCENTVNO2 (n=385) None of these 23%
Other	INCENTV9_a (n=382) Feedback on the work I've done to reduce my property's risk 38%	INCENTV10 (n=382) Recognition for taking action 11%	INCENTV11 (n=382) Neighborhood group that organizes wildfire risk-reduction activities 37%	INCENTVNO3 (n=382) None of these 40%

Section 8: In this section, we ask about personal and household characteristics. Your name will never be connected to your answers in any way.

RISKTAK1 (n=395)

8.1. In general, do you view yourself as someone who is not at all willing to take risks or very 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
	2%	2%	9%	13%	12%	26%	10%	11%	8%	3%	4%

AGE (n=391)

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

MEAN AGE: 69 years old

GENDER (n=394)

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

57% Male

43% Female

1% Other

EDUC (n=394)

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

<1% Less than high school

4% High school graduate

6% Some college or technical school

1% Technical or trade school

23% College graduate

8% Some graduate work

59% Advanced degree (M.D., M.A., M.S., Ph.D., etc.)

EMPLOY (n=401)

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

- 22% Employed full time (including self-employed)
- 14% Employed part time (including self-employed)
- 1% Unemployed or do not work outside of the home
- 62% Retired

INCOME (n=340)

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

- 1% Less than \$15,000
- 1% \$15,000 - \$24,999
- 2% \$25,000 – \$34,999
- 4% \$35,000 - \$49,999
- 6% \$50,000 - \$74,999
- 10% \$75,000 - \$99,999
- 16% \$100,000 - \$149,999
- 11% \$150,000 - \$199,999
- 48% \$200,000 or more

Thank you for your help. Please use the space below to write any additional comments. If you would like to schedule an onsite visit with a wildfire professional to learn how you can reduce risk on your property, contact Porfirio Chavarria, Wildland Urban Interface Specialist at [pnchavarria@santafenm.gov](mailto:pnychavarria@santafenm.gov) or (505) 660-3732.

Appendix F: Outreach Materials

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

Is your home's wildfire risk higher than you think?

We compared the wildfire risk of 965 properties in Santa Fe to what homeowners thought their risk was, **and here's what we have to say.**

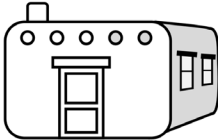


<https://santafe-wire.hub.arcgis.com>





Firetruck graphic created by 15116 from the Noun Project




You can reduce your wildfire risk.

Visit our website for more information about:

- Reducing risk on your Santa Fe property
- Creating an evacuation preparedness plan
- Assistance in reducing your wildfire hazards

<https://santafe-wire.hub.arcgis.com>

Want an on-site assessment of your property's wildfire risk? Contact Porfirio Chavarria at the City of Santa Fe Fire Department
505-660-3732
pnchavarria@santafenm.gov



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