

Focus group report

Engaging Wildland Urban Interface (WUI) Neighborhoods in Becoming Wildfire Prepared

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Executive Summary

The 2021 Marshall Fire has led the Boulder City Council to prioritize the work of reforming policies and requirements for creating defensible space and implementing other practices to reduce wildfire risks in the wildland urban interface (WUI). The City's Climate Initiatives Department is taking the lead on this priority and aims to address this significant need in collaboration with CU's Center for Sustainable Landscapes and Communities (CSLC). Specifically, this report provides insights from four focus groups of residents living in the Boulder WUI (three focus groups consisting of homeowners and the fourth consisting of renters) concerning their perceptions of the actionability of wildfire prevention measures for their residences. Research has shown, for example, that individual adaptation behaviors such as clearing vegetation around one's residence can increase the survivability of the structure during a wildfire by approximately 90% (van Valkengoed & Steg, 2019) and that individuals, once informed of such behaviors, can influence others to take adaptive measures (Carrico et al. 2012; 2019). And research being conducted by CU and Oregon State University following the Marshall Fire shows that home characteristics (such as wooden fences and shrubs or trees adjacent to houses) negatively influenced the survivability of homes during that fire.

Participants in these focus groups were engaged in a discussion about the practicality and feasibility of such efforts to mitigate fire risks concerning their residences. We found that the participants, in the main, not only clearly declared what measures they have already taken (e.g., removing combustible flora like junipers) and what they would be willing to do (e.g., examine what changes they could make in fencing around their property) but also indicated what they likely found cost prohibitive (e.g., changing the nature of their siding). Moreover, residents provided detailed commentary on what they found to be systemic problems that prevented them from fully pursuing fire mitigation efforts. In doing so, they revealed that they faced what we term "*compromised self-efficacy*." That is, they found larger barriers that came from the five areas of *communication, autonomy, accountability, aesthetics* and, particularly in the case of the renters, *doubt/distrust*. Therefore, this report, instead of concentrating on what particular measures individuals consider adoptable or prohibitive, focuses on these larger systemic factors:

Communication – Many of the participants expressed concerns about the clarity and consistency of the communication between them and various expert organizations.

- Clarity of Guidance – confusion about the explicit guidance offered and about the seeming contradictions of that guidance.
- Clarity regarding Contacts – confusion about who to contact regarding questions and receiving support related to fire risk mitigation with respect to building materials and landscaping.

Autonomy – Participants identified issues associated with their ability to make decisions concerning their residences and how such decisions relate to their neighbors' residences, and other neighboring landowners (notably city, county, and federal authorities) with respect to collective risks.

- Balance of the Individual and Collective – participants voiced confusion about their role in removing risks that affect individuals AND how this may or may not align with the collective interests of the community.

- Expenses – while some didn't see the costs as worrisome, others talked about how they had to phase in projects due to the expense, lack of resources, and willingness of contractors to work on fixes that interact with city, county, and federal lands.

Accountability – Participants felt that various advisees, such as the respective HOAs, architectural review boards, and public officials (such as the fire department) did not share their interests in equal measure and urgency.

- Who Owns This – many residents, especially those in Devil's Thumb neighborhood, felt that none of the entities were accountable or responsive to them.
- Why Can't There Be Better Coordination – participants would like to have more shared accountability and coordination with various government institutions.
- Does All This Even Matter – there was some doubt that making changes would have a positive material impact on mitigation in the instance of a Marshall or NCAR-type fire.

Aesthetics – Many participants worried that the approaches recommended in materials and by the fire department failed to factor in elements they love about living on the wildland urban interface such as the wild nature of the environment they love so much.

- Love and Fear of Proximity to the Wild – this applied to both renters and owners who expressed deep affection for the aesthetics associated with the flora and fauna surrounding their homes and apartments.
- Trade-offs – many participants articulated a desire to create fire mitigation boundaries yet allow for the natural environment to abut their living spaces.
- Emotionality of the Decisions – participants talked lovingly about trees and shrubs and access points to trails near their homes that they felt they needed to trim, remove, or replace.
- Materials – participants felt that some of the recommendations required changes to buildings and landscaping that effected the value of their homes and their desire for maintaining aesthetics.

Doubt/Distrust – Residents who lived in rentals questioned whether the recommendations would actually protect them and their properties from fire risk and damage in the event of catastrophic fires. Further, some questioned whether enforcement entities like property management firms, among others, had the processes in place to support collective risk mitigation.

- Incentive Alignment – some participants questioned whether enforcement processes and mechanisms matched the urgency and desire for community safety among homeowners and renters alike.
- Civic Alignment – this concern addressed whether all neighbors and enforcement mechanisms (i.e., incentive models) were as conscientious as they (the participants) are about risk mitigation.

Our recommendations are offered in light of these systemic factors that appear to compromise self-efficacy among the participants. That is, rather than focus on particular adaptation measures that may or may not be seen as feasible or practical by these respondents, we offer the following:

Recommendation 1: Accountable jurisdictions that border the Boulder WUI and federal land-owning agencies adjacent to WUI neighborhoods should communicate with homeowners and renters through strategic, persistent, and consistent collaborative educational efforts.

Recommendation 2: Key governmental and resource planning entities should increase their collaboration and communication to clarify which are responsible, which are accountable, and which are consultative.

Recommendation 3: Increase the direct engagement with communities and community members through sustained communication programs.

If these recommendations are heeded, both public officials and residents will likely be able to better coordinate their actions and increase resilience in the face of ongoing fire threats. Otherwise, residents may further develop *compromised self-efficacy*. That is, while they may have some knowledge of preventative actions, and even sense that they have the resources to put some measure(s) into place, concerns about uncoordinated actions may cause residents to experience a sense of inertia. This can lead to lack of traction when it comes to building community-wide resilience to fire threats.

Instead, by understanding the myriad factors that influence behavior change (either positively or negatively) at the individual level and connecting it to broad community resources, officials can activate civic responses to the wildfire threats that will, because of climate change, only increase over the next decade and beyond.

Introduction

In the aftermath of the late 2021 Marshall Fire, researchers at CU Boulder, supported by a mini grant from CU Boulder's Office of Outreach and Engagement and consultancy from CSLC (Center for Sustainable Landscapes and Communities) member Karen Hollweg, held four focus groups that consisted of community members in the city of Boulder who live near the WUI (Wildland Urban Interface). The project's aim was to assess the effectiveness of wildfire mitigation messages and find ways to facilitate discussion among these residents that went beyond awareness and engage them in considering steps toward reducing wildfire risks at the neighborhood level through collective community action. Furthermore, the intent of these focus groups was to provide more rich findings about community concerns regarding fire mitigation that could then be used to 1) support further community engagement efforts on fire mitigation outreach to more neighborhoods along Boulder's western WUI, and 2) serve to support further pursuit of funded research regarding this vital area of study.

Community interest and participation was robust, providing extensive observations from participants that inform this report.

Method/Sample

In September and October 2022, four focus groups were conducted in neighborhoods adjacent to the Boulder WUI. Three neighborhoods featured homeowners: Devil's Thumb, the Foothills Community, and Hollyberry/Foxtail. We held two focus groups in Devil's Thumb as another nearby neighborhood, initially interested, dropped out of the focus group recruitment process. We also conducted a focus group in Boulder Housing Project's Foothills Community so that we can receive insights from renters. We took this approach so that we could receive information and insights from both economically advantaged and disadvantaged neighborhoods who live adjacent to five different jurisdictions: city lands managed by three different departments (the Open Space and Mountain Parks Department, the Utilities Department, and the Parks and Recreation Dept) and/or federal lands (National Center for Atmospheric Research and National Institute of Standards and Technology). Each focus group size ranged from a minimum of eight participants up to 12. Respondents were asked to review two pages from the most-recent Boulder Fire Rescue's [Wildland Fire Preparedness Guide](#); each page featured graphics and text that described how individuals could make their building materials and their landscaping involving their residences more defensible against fires. We developed a focus group facilitator guide (see appendix) that asked specific questions about participants' knowledge of these recommendations, what they have adopted, what they might adopt, and what they would not adopt.

Focus groups were kept to an hour each and were held at a free, public location (e.g., a library meeting room) that was secured from any onlookers or any eavesdroppers. To accommodate working schedules, each focus group was held no earlier than 5 p.m. Some participants knew each other; regardless, we asked individuals to share only their first names and no other identifying information. The only time full name information was made available was at the end of each focus group, when Dr. St. John handed out complimentary \$25 gift cards to the participants and asked them to sign for its receipt, per CU Boulder guidelines.

Dr. Burton St. John facilitated each discussion, with PhD student Mark Heisten and CSLC member Karen Hollweg observing and taking notes. At some meetings, mid-level officials

from the City of Boulder attended as observers. While they introduced themselves, they did not interact with the participants and no participant indicated they were concerned about their presence, nor did they appear to “tailor” their remarks to any of these observers, focusing their responses to either Dr. St. John or each other. One student attended from Dr. St. John’s crisis management class strictly as an observer.

Three recording devices were used, and the audio files transcribed using otter.ai, an online digital tool, and augmented and edited by Mark Heisten for accuracy. The analysis involved multiple steps that followed the thematic analysis model introduced by Braun & Clarke in 2006 and updated in 2012 and used the leading qualitative data analysis (QDA) tool, NVIVO. First, the authors read all raw transcripts to gain familiarity with the data. Second, code sheets were developed and built on a set of keywords used to organize the data based on frequency and typology (i.e., in this case, primarily textual and semantic analysis). Third, the authors culled annotations into rough themes. Emphasis was given to patterning within the data set (Braun & Clark, 2006, p. 82), which aided in conceptualizing similarities and contradictions within the inferred and/or explicit meanings of the material. Fourth, the authors discussed preliminary findings to confirm our assessments’ normative validity (i.e., that we were measuring items that we set out in our objectives for this project). Finally, the authors collated codes into themes, assigned each a name, and crafted the final report.

Implications and Recommendations

The implications of this study (detailed findings appear in the next section) suggest the need for enhanced broad collaboration among not only public authorities such as the fire department and county, state, and federal entities, or community authorities such as homeowners’ associations (HOAs), landlords, and property management firms, but also individual homeowners and renters. In light of increasing fire risk and growth along the WUI, it is the combination of public and private, organizational, and individual efforts that will together create required changes – a paradigm shift in which the stakeholders noted above work together to pursue meaningful mitigation actions that, in turn, affect long-term and vital behavioral change.

Additionally, this report’s findings point to a number of important directions for future research including a more thorough examination of cross-organizational coordination (e.g., construction of a responsible-accountable-consult-inform or RACI model for all communities along the WUI), assessment of communication strategies and materials, and fire-safety literacy among residents and community managers. If those who share risks and responsibilities for the actions along WUI can build a mutually beneficial approach to communication, then additional research should yield some immediate application strategies which can accrue benefits for all stakeholders.

Anchoring our recommendations is an approach for synthesizing strategies toward affecting behavior change both at the institutional and individual levels in Boulder. The approach aims to identify positive emergent and/or actual behavioral change that occurs from the interplay of three key factors: 1) individual-level factors (knowledge, attitudes, and beliefs), 2) social and environmental factors (social support and resources), and 3) behavioral processes (goal-setting, and self-monitoring). It is important to note this report offers recommendations based on a

summation of residents' comments regarding the current state of information sharing and collaboration between residents and official decision makers about wildfire threats.

What follows are three specific recommendations that, while they have overlapping aspects, are important to consider as discrete steps toward building fire-related resilience in the broader Boulder community. We highlight these because they identify three concerns that respondents have pointed out that tend to *compromise residents' perceived self-efficacy* when it comes to taking preventative measures. Those three concerns are 1) a need for more consistency and clarity in messages from officials when it comes to better preparing their homes to resist fire, 2) clearer identification of who, among officials, has the lead and accountability for facilitating fire mitigation efforts, and 3) a desire to work collaboratively with representatives from these agencies.

Recommendation 1: Accountable jurisdictions that border the Boulder WUI and federal land-owning agencies adjacent to WUI neighborhoods should communicate with homeowners and renters through strategic, persistent, and consistent collaborative educational efforts.

The first recommendation links the perceived self-efficacy of homeowners to concerns about citywide guidance addressing fire risk mitigation efforts on one's property – both inside and outside the residence. In other words, citizens want clear direction on the materials, practices, and flora that meets fire safety goals while also maintaining their autonomy to select the scope and scale of their actions. The consensus response from residents was concern for their own properties and those of their neighbors and the general safety of the community in which they lived. Many of the participants were conscientious and aware of their role in reducing combustible materials but were also confused by differences of guidance and actions taken among federal officials, the local fire department, and other city officials.

From our observations of the focus groups, participants offered that there is nuance in the educational materials (which resulted in confusion among participants) and reported divergence around prioritizing investments (due to fixed-income considerations or anticipated low ROI). In some cases, the residents were unclear which entity was ultimately responsible: “[the trimming] must have been the City of Boulder because they own all the trees ... right?” noted one participant. And, with respect to guidance on types of preferred trees, one of the participants noted that there seems to be a “communication gap ... what do they really want [us] to do?” So even when the citizens want to educate themselves and make decisions in the best interest of themselves and their neighbors, they consider some of the current communication to be vague.

One important note on the participants is that they are all volunteers from the respective communities under study. Thus, *they were the most engaged in the subject and expressed a willingness to invest time and money to addressing the risks*. Many other neighbors may not be as aware of or concerned with the issues of fire safety.

Not surprisingly, many of the homeowners and renters expressed a desire for engagement with city, state, and federal entities and coordination with respective HOAs and property management firms. Further, they noted that the “on-the-ground” resources, such as those provided through the fire department, should align with the messaging from the city. In other words, participants wanted to see more consistency of messages among all.

Recommendation 2: Key governmental and resource planning entities should increase their collaboration and communication to clarify which are responsible, which are accountable, and which are consultative.

Regarding resources and ongoing support, participants talked about not knowing which agency to speak with first, especially for those whose homes abutted NCAR or open-space lands. Clearly, more collaboration with residents is not limited to the nature of the educational information and material support. Respondents indicated that improved collaboration needed to clarify what entities have the lead in dealing with the various challenges of local mitigation. Therefore, our second recommendation syncs with Goal 3 of the Boulder County Office of Emergency Management (OEM) [Hazard Mitigation Update Report 2020](#) which states the intention to “strengthen intergovernmental coordination, communication, and capabilities in regard to mitigating hazard impacts.”

Several of the focus group participants said they had “no idea” of who to call or where to start with respect to fire preparedness activities. Additionally, some shared that the patchwork of agencies and jurisdictions made it impossible to get clear answers and approvals. As one participant explained, “you call one [entity] and they refer to another who refers you to yet another, and at some point, you give up ... I’ve got stuff to do ... this complexity creates inertia.”

Recommendation 3: Increase the direct engagement with communities and community members through sustained communication programs.

The third recommendation builds on behavior factors such as an intrinsic desire among residents to do the right thing with respect to their properties and with respect to civic responsibility. Although the first two factors – increasing knowledge and agency among residents and increasing accountability between governmental agencies and residents –are vital, this third focal area may yield exponential benefits as it effectively empowers individuals and entities to work in harmony for future wildfire threats.

The foundational literature and content the city has created provides a strong resource for residents. However, providing information is not enough. Given the public impact of wildfire risk along the WUI, frequent and direct communication efforts or outreach to citizens and indirect efforts through HOAs and property managers may improve the self-efficacy of homeowners and renters to monitor and report potential risks. Direct instruction and direct involvement by appropriate and authorized jurisdictions on such a complex, nuanced, and high stakes matter will increase the sense of urgency, cooperation and salience regarding fire-prevention issues between government agencies and citizens.

If these three recommendations are heeded, both public officials and residents will likely be able to better coordinate their actions and increase resilience in the face of ongoing fire threats. *Otherwise, residents may further develop what we call a sense of “compromised self-efficacy.”* That is, while they may have some knowledge of preventative actions, and even sense that they have the resources to put some measures into place, concerns about uncoordinated actions may cause residents to experience a sense of inertia. Such a sensation can result in limited or no action from some residents, leading to lack of traction when it comes to building community-wide resilience to fire threats.

In the end, these recommendations are intended to improve residents' ability to: 1) recognize fire-related concerns, 2) seek relevant information, 3) anticipate risks and identify causes/solutions, 4) assume greater control over their own actions, and 5) engage authorized and professional support as needed. By understanding the myriad factors that influence behavior change at the individual level and connecting it more effectively to broad community resources, officials can activate civic responses to the wildfire threats that will, because of climate change, only increase over the next decade and beyond.

Summary and Findings

Respondents across the four focus groups indicated that there were five factors that, in the main, tended to compromise their capacity to make their home more resilient in the face of potential fire threats. The first four factors are *communication*, *autonomy*, *accountability*, and *aesthetics*. Additionally, we found that respondents who are renters also voiced marked *doubt/distrust* regarding the current state of fire prevention activities in their immediate area. It's also important to note one important overall finding that informs respondents' comments across these categories: participants were often uncertain about jurisdiction boundaries concerning nearby lands managed by officials. For example, they tended to use words like "city," "county," and "state" interchangeably in discussions about land management. This lack of clarity about jurisdiction contributed to the concerns participants voiced when they surfaced these five factors.

Despite the juridical confusion about adjacent property and accountability, participants were clear about lauding the support they received from members of the fire rescue staff who provided direct advice on how best to mitigate fire risk on their properties. One individual in particular was mentioned by name – Jamie Carpenter, an operations specialist at Boulder Fire Rescue whose professional guidance and hands-on approach to assessing properties was viewed very favorably.

What follows are summaries of each factor, followed by sample verbatim quotes from participants.

Communication

Several participants expressed concerns about the clarity and consistency of the communication between them and various expert organizations. Conversations revealed observations involving HOAs, local fire authorities, and city and federal officials. In some instances, the source of relevant communication originated with a single source such as a property management company. Among the participants' concerns, clarity concerning whom to contact, the nature of expert guidance, and the availability of support topped the list. In this thematic area, we noticed the following recurrent concerns:

- Clarity of Guidance – confusion about the explicit guidance offered and about the seeming contradictions of that guidance.
- Clarity regarding Contacts – confusion about who to contact regarding questions and receiving support related to fire risk mitigation with respect to building materials and landscaping.

Sample comments

Some respondents indicated that they appreciated current clear guidance and support from experts and other community members:

...it's helpful to have a professional telling you, you don't have to clear cut. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

And I am learning a lot especially about ... the vents, I was totally unaware of it. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

I did not realize the extent to which ... an awful lot of the Marshall fire apparently was spread through embers coming into the vents that was burned from the roof down. So, unlike [participant name] who was much smarter than I am, we're going to be changing the siding and the vents and the gutters and the eaves and everything else. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

In contrast, there was significant discussion about the need for clearer guidance from experts:

I just need their websites [to be] way better. They got pictures on there, so they don't give you [much] there. Oh, here are your prescribed plants. And then they will give me pictures and it's like how the hell do I even know what these look like? Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

We clean [the gutters] out, have them cleaned out. But then [the fire department] says to consider gutter designs that prevent flammable material from entering gutters. Is that like getting new gutters or tops on the gutters? Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

I have to say not until listening to this conversation did I realize that decks were dangerous. I understand if you have combustible material under them and overhangs ... I thought it was brought up [so people didn't] store firewood under a deck. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

What a mix. I mean, [the fire department] says [yards should] have a mix of conifers and deciduous trees. I mean you have to think about multiple factors, right? ... There's other environmental factors where you want shade for, you know, for your house, and evergreens protect you ... from wind, and ... provide other benefits ... Some of these things are probably tradeoffs ... I don't even know if it's even desirable to get rid of every single evergreen. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

When I read "encourage a mixture of deciduous and coniferous trees," I read that as them trying to tell us you need more deciduous trees; there's too many pine trees everywhere, as opposed to it does seem like there's a communication gap [about] what they really want you to do, and what they think is realistic for people to do. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

There's a lack of ... priority setting in the communication. With the exception of a few things, this is really expensive to change the siding on a house ... You're in the 10s, if not hundreds of 1000s

of dollars. ... [If] you're doing a renovation, it's awfully hard to justify starting from scratch to do that ... It'd be nice to kind of get sort of a list of ... here are our top things to do [and] they're relatively inexpensive. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022

The prioritized list with the "why" would really help people...I had no idea that most of the houses in the Marshall Fire burned down because embers [were] going down through vents ... So that's really low hanging fruit. [It would help] if we had a prioritized list, maybe an order of how it costs versus efficacy, or how much it can help prevent or protect your house. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

[We need] some sort of communications about what we could put in [yards] that would maybe provide some vegetation that's not dangerous vegetation, and maybe doesn't require a lot of water. So [we need] somebody who's smart about alternatives ... some sort of information like that would be helpful. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022

[We need] something about considerations for remodel. Obviously, there's a lot of people do that on a regular basis – [so] here's a checklist, make sure that you consider the siding, and you consider the windows. [I prefer this to] working with a contractor who may or may not know that information. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

I have no idea what [our building's] materials are and whether they are fire resistant. Participant, Foothills Community Focus Group, Oct 10, 2022.

I didn't know the word "fire retardant" [for] trees. What could they put in tomorrow? I'm just curious, because they need to do something because they've cut down a lot of trees already ... So, they could put in the fire retardant [trees]; what kind of tree is that? Participant, Foothills Community Focus Group, Oct 10, 2022.

[Regarding] emergency response, how the residents are notified immediately, we have that siren, that's over by Crestview. Firefighters are changing how they respond; [they] come to the park and be just on standby if needed, and park in the big parking lot. [We need] a better way to communicate with all the residents. So, they know, via text message, some type of alert system, in case they're not home. Participant, Foothills Community Focus Group, Oct 10, 2022.

And I need a fence because people are walking by my house all the time. But I don't know what to replace it with. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

Some respondents indicated they didn't know whom to contact for assistance:

I have no idea who to call to check to see if my vents meet the specifications that they set, so it was kind of overwhelming. I'm like ... I don't know whether they're 1/8 inch or so. I haven't done it, but I think the fire department is stressing the importance, but I don't even know where to start. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

I've had kind of multiple conversations and different firefighters trying to figure [things] out. And it's kind of like you have to pick and choose a little bit at a time because people have their opinions and it's emotionally hard for me to figure out what to take out. It's a lot. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

I don't know who I need to talk to at NIST, or NOAA or who the person is. After the [2013] flood, when I reached out to the city, it was, I mean, it was an appalling response. There were changes made on that public space, that actually further imperiled our home. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

[Regarding trees] there's not somebody I can call and say, hey, is this good to go. So, in that case, it's on us to basically cut them down and then apologize. And I'm not sure everybody in our neighborhood is going to bust out a chainsaw and start doing that. And so I think the city is not easy to use. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

The city is so difficult to deal with, and there's only so far you're going to get, and everybody just has to do everything they can. [You can] take care of your own property and therefore help your neighbor take care of their property. That's kind of how we've approached it is to say, this is what I know I can do with my property. And I can't do anything about that other property. Whatever else is around me, I can't really do anything about that. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

Autonomy

Participants identified issues associated with their ability to make decisions related to their properties, their neighbors, and other landowners (notably city, county, and federal authorities) as they relate to collective risks. In some instances, the participants noted the desire for practical and effective options – that is, a set of viable recommendations regarding landscaping and housing materials that could be selected based on individual budgets, timing, and preferences. Among the participants' concerns were opportunities that reflected thinking about the balance of individual/collective interests, concerns about expenses, and the need for resident input (or voice). In this thematic area, we noticed the following recurrent concerns:

- Balance of the Individual and Collective – participants voiced confusion about their role in removing risks that affect individuals AND how this may or may not align with the collective interests of the community.
- Expenses – while some didn't see the costs as worrisome, others talked about how they had to phase in projects due to the expense, lack of resources, and willingness of contractors to work on fixes that interact with city and federal lands.

Sample comments

Several respondents offered their views about the balance of individual and collective action and how this presented challenges, especially when it came to feeling discouraged about the disjoint between the two:

But even though we certainly wish the city would do a little bit more, I still don't think that should stop us from doing everything we can on what we have, knowing what we can do. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

We do everything on our property that we can do. And actually have helped our neighbors try and do stuff as well. But to the extent that one foot over our property line is public space that's governed by two entities that are difficult to deal with, [this is] unclear, and actually not super

helpful. Okay, then you have to stop even though there's something that could be four feet over the space over your property line, where you're like, damn, I'd like to get that tree trimmed up six feet or five feet, then in other words, you have to break the law, as Boulder has it in order to do that ... But you know, even the fire department is saying, just do it and apologize later, and what kind of public policy is that? Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

I'm not a big believer in telling people you got to get rid of your fence. Because I find it their problem. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

... you know, you can't control everything, but we're going to try to knock everything off the list that we can, especially the small things. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

All of these measures are worth doing for people who feel that their house is at risk. I questioned whether they should be mandated things, where we say, hey, by not doing this on your house, you're putting my house at risk. I'm a little iffy about that, because almost certainly my house burns. The reason it burns is because my neighbor's house burned their neighbor's house, and up to 15 and 20 of them. I don't think there's anything I can do. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

I don't like [this as a] social thing. I think it's more each person looks at their tolerance and the things around their house and says, wow, I better get that tree that's over here ... I don't want to tell my next-door neighbor you have to cut that tree because it's scaring me. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

I've got a flagstone patio, but I'm not willing to give up my Redwood deck. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

I still got some trees that have grown up and over the house. And I'm going to trim those back. But I'm not going to eradicate trees. You know, Boulder County and the city have excellent fire protection, very well-funded, well manned, trained, full of all kinds of equipment. And so I don't feel [the need to remove my trees]. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

We have mostly stones; we don't use mulch. And I personally ripped out an enormous amount of juniper. I'd already started ripping it out because it's not my favorite thing to look at ... But I do have people with other neighbors ... who are upwind of me who have very large amounts of juniper and it does make me wonder whether my ripping it out made any difference at all. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

Well, I don't think we can space conifers 30 feet. That's tough. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

There's a little conflict: others of us mow our yards and people might scowl at us for using a mower or something. I mean, there are differences of opinion on a lot of these issues. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

Some respondents were explicit that the expense of taking preventative actions was prohibitive:

I'm not excited about spending a ton of money on a house that could burn down next year, within the next year. And I don't know if that's an inconsiderate thing to think to my neighbors. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

I have wooden siding, and it's supposed to have a barrier that's cemented all the way to the ground in some places. And it's the expense, its expensive ... That is a problem for me. And so I've done many of these, but I've done the ones I can afford to do myself. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

But that's, you know, something that's not particularly affordable for us right now. I don't want to spend the money to do that. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

Everybody's risk tolerance is different about price points ... Am I a jerk for not putting Hardie Board on? Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

Many of us have concerns about spending thousands and thousands of dollars to make a house more fire resistant – that somebody's going to come in and tear down for some of us sooner than later. For others of us, maybe later ... it leads back to your comment about what is feasible. What is practical in some people's eyes may be what is going to be used by them in their lifetimes, as opposed to something that is not going to be used by them in their lifetimes. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

[Regarding] an essential exterior rebuild, it does cause some concern about the ultimate demise of our properties, if not, by fire then by purchase by someone from California, with lots of money in their pocket. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

Accountability

Participants expressed concerns about whether the respective HOAs, architectural review boards, and public officials such as the fire department shared their interests in equal measure and urgency. The accountability theme was most explicit around issues of ownership and collective interest. In this thematic area, we noticed the following recurrent concerns:

- Who Owns This – many residents, especially those in Devil's Thumb neighborhood, felt that none of the entities were accountable or responsive to them.
- Why Can't There Be Better Coordination – participants would like to have more shared accountability and coordination with various government institutions.
- Does All This Even Matter – there was some doubt that making changes would have a positive material impact on mitigation in the instance of a Marshall or NCAR-type fire.

Sample comments

Respondents tended to voice concern about who has the lead in wildfire preparedness:

We are all at risk for what is done or not done on the open space itself. And so, within your controllable perimeter, you can implement these things very easily. But without that controllable perimeter, you can't. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022

I have lived in Devil's Thumb for [several] years ... And we did a lot of mitigation efforts prior to that, and I know how important they are. And I also know how little they can do under the right circumstances or the wrong circumstances. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

The fence part fits into my larger philosophy that, like you're using an atom bomb to kill ants. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

It seems as if a lot of people in the neighborhood and the HOA have implemented much of [preparedness] if not all of this. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

I don't know if there's some communication from the fire department saying, it's up to your permission to go into your house, turn your sprinkler system on ... But I've often wondered. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

Yeah, it seems like when the leaves actually really come down, [the city does] something with them, but not on like a daily, nor on a weekly basis. Participant, Foothills Community Focus Group, Oct 10, 2022.

Boulder Housing Partners knows about the dangers you've just described. It's nothing. That's a mystery. [They] must have known over the years so why hasn't something been done? It's not that difficult. [I can tell you] it's appalling, Participant, Foothills Community Focus Group, Oct 10, 2022.

The fire department came out and they were terrific. And they give us a nice report saying, hey, this is what you should do. And we implemented a chunk of those, and we're probably in progress for the rest of it. But one of the challenges that we ran into [is that] our home abuts the open space. And so when we looked to actually take up tree limbs up to six to 10 feet, we actually were unable to get providers to do it because it was on open space. And so no one would touch it. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

I would say that I've seen Boulder be very ham-handed in some of its interventions. Post the [2013] flood ... your ability to change anything that affects your own property was really difficult. And I am really concerned if the city suddenly shows up and starts saying you have to have a wire fence ... We have wire fence; it looks fine. I don't have any problem with it. But I can certainly see cases where it would really change the value of your experience of your home if [you have] wood fencing. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

I think another problem we have is that we're dealing with our own homes, our neighbors, whether they're here, their homes, and the city. Between our two properties, we have the creek. So who's responsible for clearing wood and dead things out of that, which runs down into the federal property? And the city open space? You're dealing with a lot of different entities. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

Other respondents indicated that they were concerned about lack of coordination:

I border the condos below. And they haven't done anything. They're full of juniper. So there's a bit of a risk there, I think. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

So has anybody else done work and had trouble finding a contractor for the vents for example? I need to look at mine, too. But I'm not sure who I would call. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

It was only like 10 or 15 years ago that [the city] didn't even agree to do anything but siding; it became a huge battle. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

I don't think the fire department communicates this – they would probably prefer that the trees go away. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

I think one of the things that I would just note would be useful when you're making defensible space, if your home abuts the open space, is the ability to have some way to encroach into that open space area just to give the fire department more time and more space to work ... and selectively prune ... [Still], there are places where ... I would be concerned about having the city do that because I don't think they do as good a job as the neighborhood. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

The entire west edge of our neighborhood, in the entire southern edge of our neighborhood – going to the NCAR road on the south and the NCAR property, and to the west, almost 400 yards – is all federal property. NCAR, you know, we've dealt with on flooding issues, roadway issues; believe me, the city and NCAR do not like to talk to each other. They do not. And the city maintains “we are managing this property.” But I'd say that's somewhat questionable. NCAR would say it's our property and keep your hands off of it. But I would say that's also questionable because they're reluctant to do things. So just from past experience, on flood issues and road issues, it's hard to get competing entities ... to cooperate with one another and talk to one another and plan together. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

That would be a nice thing that [officials] can say: this is the people you need to talk to. And this is a plot of who owns what property and who's in charge. So we know [who governs] what property. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

There should be a number we can call to say, hey, you should clear this [brush]. Because I don't know who to call. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

Some respondents voiced a level of fatalism (does all this even matter):

It's good to be prepared. It'll help us sleep at night. But there might be situations like the Marshall fire, where they can't even fight it. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

But this is an area, I think where my particular house is very vulnerable. And it's tough to solve. And I think I'm putting my neighbors at risk, which I don't feel good about. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

I think that's one of the biggest risk factors in our neighborhood. We're so close to the open space, even if it's not HOA land, that it's all very flammable. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

Yes, but we know Marshall [and] when you have 100 mile an hour winds, it doesn't matter how big your firebreak is. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

If you live next to someone like we do, who's on a fixed income, and they have a bunch of tree trimming [and] substantial stuff to do, it is just kind of probably not going to happen because they've got to eat. And so I think that, to some extent, limits landscape work because I, we did all of this stuff. Except I know the house would burn in a minute because of all my neighbors who I love and she's great, but we'd be gone in a flash. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

You don't know who to call in the city. And then you call the city, and they say, well, that's really the federal guys, and you got to talk to them. At some point, you're like, I got a job, I got some stuff to do. And so I give up, you win. And so it's like, just the nuisance of dealing with it creates inertia in terms of dealing with your own property. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

Aesthetics

Many participants worried that the approaches recommended in the materials and by the fire department (most notably) did not factor in elements they love about living on the wildland urban interface – that is, the wild nature of the environment they love so much.

- Love and Fear of Proximity to the Wild – this applied to both renters and owners who expressed deep affection for the aesthetics associated with the flora and fauna surrounding their homes and apartments.
- Trade-offs – many participants articulated a desire to create fire mitigation boundaries yet allow for the natural environment to abut their living spaces.
- Emotionality of the Decisions – participants talked lovingly about trees and shrubs and access points to trails near their homes that they felt they needed to trim, remove, or replace.
- Materials – participants felt that some of the recommendations required changes to buildings and landscaping that effected the value of their homes and their desire for maintaining aesthetics.

Sample comments

Some comments expressed concerns about flora and fauna near their homes:

I would hate to see [local officials] come in and take out all the beautiful landscaping shrubbery and trees because the wood buildings in themselves are the highest risk ... It's so beautiful to have the shrubbery. The Forest Service is cutting, getting rid of ash trees in that area. Participant, Foothills Community Focus Group, Oct 10, 2022.

I don't know who the outfit was but must have been the City of Boulder because they own all the trees on those strips, right? They cut those back so that they're not overhanging on to buildings anymore. Participant, Foothills Community Focus Group, Oct 10, 2022.

I have a huge concern about this because you see some of the fire roads that have been run down, and it's really a vibrant habitat along our neighborhood. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

I would like to prune it; I just don't want them to pay to put a dirt fire road along our line out back. Yeah, that's like a big concern for me. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

We live in a wonderfully biodiverse area, and we like the wildlife. I like providing sanctuary for the wildlife and giving them places to transit back and forth from the city back up to the mountains. The landscape is critically important. And so I think there's a desire to keep enough landscape to provide the critters cover versus our need to keep our home safe ... So you'll get differences of opinion about how much should be done and how much shouldn't be done. And so there's always a bit of a push and pull there. Participant, Hollyberry/Foxtail Focus Group, Sep 29, 2022.

Some comments expressly addressed the trade-offs involved in taking preventative action regarding the natural environment:

Devil's Thumb has declared war on the Rocky Mountains junipers in all the cul de sacs and common areas, ripping them all out. They are native to Colorado, and I have sort of mixed feelings about that because our cul de sac is now [denuded.] It ruins the visibility. So now you can see all the parked cars in the cul de sac and there's no visual barriers. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

Most of my neighbors, they won't take out their junipers; it's a privacy issue. They have a trail, or they have a sidewalk and it's around their backyard, so they can sit on their porch. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

Maybe people should be allowed to put in things; we're going to let you rip out the juniper and put in something that's attractive. But that still gives you a certain amount of privacy. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

Some comments expressly discussed the emotional aspects in taking preventative action regarding the natural environment:

We had a green ash tree. It was our flagship shade tree and it got ash borer. So I cut it down. Yeah, I hated that. And we have honey locust there now that provides very little shade. I don't like it. I miss my old tree and I never would have cut it down for a fire preventative [step]. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

And I don't know what to do with that because it's such a spectacular tree. And I don't know how to save the tree and make it safer. Talking to a number of arborists about that. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

Everybody loves their trees. And the act of cutting down a tree I think, in Boulder, it elicits a visceral response. So if there were some sort of alternative planting that could help us because

it's not clear to me how bad coniferous trees are. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

The biggest thing that we did for trees [is to] make sure they're limbed up high enough so the trees can still be beautiful. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

[Our] trees were sort of ancillary; they weren't in a viewpoint ... where we took them out. I miss them. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

Some respondents commented on challenges related to material fixes to their homes:

With regard to gutters, I'm fighting this battle with my husband. But I want the leaf covers for my gutters. And it was actually a video that I think the HOA included in one of their emails that was from the fire department, and it showed different ways that the fire could start at your house. And he was shocked that often it starts in the gutters. Participant, Devil's Thumb Focus Group #2, Oct 4, 2022.

I guess in principle, what we should do is ... build the wall somehow so ... you can't get fire underneath it. But that would change the whole wall ... and try to keep that area clean and like there's no plants or combustible material underneath it. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

Well, we've got covered entrances, three of them, which I am not going to get rid of those. They're really nice to be able to come to the front door and not be in the rain. I just did this huge remodel – it's been not quite 10 years. So I don't want to change out my siding again like it's only a little bit of its wood. But I also have tongue and groove wood on the soffits and some old, reclaimed wood posts. I can't imagine redoing that after I just spent a ton of money. Participant, Devil's Thumb Focus Group #1, Oct 3, 2022.

Doubt/Distrust

Participants who lived in rentals particularly questioned whether fire mitigation recommendations would actually protect them and their properties from fire risk and damage in the event of catastrophic fires. Further, some questioned whether enforcement entities, including HOAs and property management firms, among others, had the processes in place to support collective risk mitigation.

- Incentive Alignment – some participants questioned whether enforcement processes and mechanisms matched the urgency and desire for community safety among homeowners and renters alike.
- Civic Alignment – this concern addressed whether all neighbors and enforcement mechanisms (i.e., incentive models) were as conscientious as they (the participants) are about risk mitigation.

Sample comments

Renters, in particular, spoke to problems with the landlord enforcing provisions that would limit fires:

It just seems farcical. I mean, I'm sorry. It does. The whole thing is verging on farcical, incompetence, danger. It's okay until something happens. I mean, we'll fuss around with fixing some this and that. It's a joke. I mean, what I'm hearing has made me more cynical than I was before. That nothing's being done even when they're aware of it. ...What I'm hearing is they are aware of the dangers of certain shrubbery for the fire, they're up against the houses. These units have been here how long? Participant, Foothills Community Focus Group, Oct 10, 2022.

I've never seen [the landlord] clean the brush out. She's lived there ten years. Well I've never seen somebody come in actually sweep the brush out. Participant, Foothills Community Focus Group, Oct 10, 2022.

Well this summer they [the landlord] did put out an advisory. But they don't really enforce it. Participant, Foothills Community Focus Group, Oct 10, 2022.

I'm still waiting for the lease violation for a guy whose added a scooter [next to a tarp and gasoline tank]. You have to understand this guy is like a mentally ill hoarder. If you went back there right now and looked, you'd see a whole bunch of garbage behind his place [and] you'd see a half dozen scooters that are part of his scooter repair business just sitting out there. The managers actually allowed them to use a parking spot for like six scooters. I mean, it makes it easier for him to roll them into his unit and fix them and what could go wrong? Participant, Foothills Community Focus Group, Oct 10, 2022.

It's very unclear who's in charge whether that's Boulder Housing Partners, which is where we live, or the city. As far as I can tell they do nothing there. Participant, Foothills Community Focus Group, Oct 10, 2022.

[Boulder Housing Partners] sprinkle paperwork and they make it look like they're doing something, you know, you need this cleaned up, you need that cleaned up ... but there's never any follow up; they just don't do anything. Participant, Foothills Community Focus Group, Oct 10, 2022.

I don't see any point in sitting down again, until I hear what the response of Boulder Housing Partners is. Participant, Foothills Community Focus Group, Oct 10, 2022.

There's a lot of talk in this town, a lot of gas, a lot of people exuding virtue, concern. At the end of the day, it's not that these problems are not unsolvable. They're simple. They're simple, folks, aren't they? These are not difficult. But no, we've got to have a grant, we got to have a committee. We've got to get people together and give them you know, 25 bucks. Participant, Foothills Community Focus Group, Oct 10, 2022.

Appendix

Discussion Guide Materials

Focus group facilitator guidelines

Keep discussions constructive and positive

- Optimal facilitator behavior:
 - Treat everyone with respect.
 - Listen actively and attentively. Don't interrupt.
 - Speak from your own experience without generalizing.
 - Request that if participants challenge others' ideas, they back it up with evidence, appropriate experiences, and/or appropriate logic.
- Try to keep the group on task without rushing them.
- If the group starts to veer in the direction of negativity and/or pointless venting, ask them how they would like to address the matter being discussed, or redirect to a broader related concern.
- BE MINDFUL OF THE TIME ALLOCATED and facilitate accordingly.

Interacting with participants

- Ask follow-up questions, and, *at times*, paraphrase previous comments for everyone to ponder.
- If a statement is vague, ask the contributor for further clarification and/or elaboration.
- *As appropriate*, re-visit past contributions and weave them into new questions.
- Identify comments that may need more group input and encourage others to add their reactions or ideas.
- Don't be afraid to admit your own ignorance or confusion if you don't know something.

Dos and Don'ts:

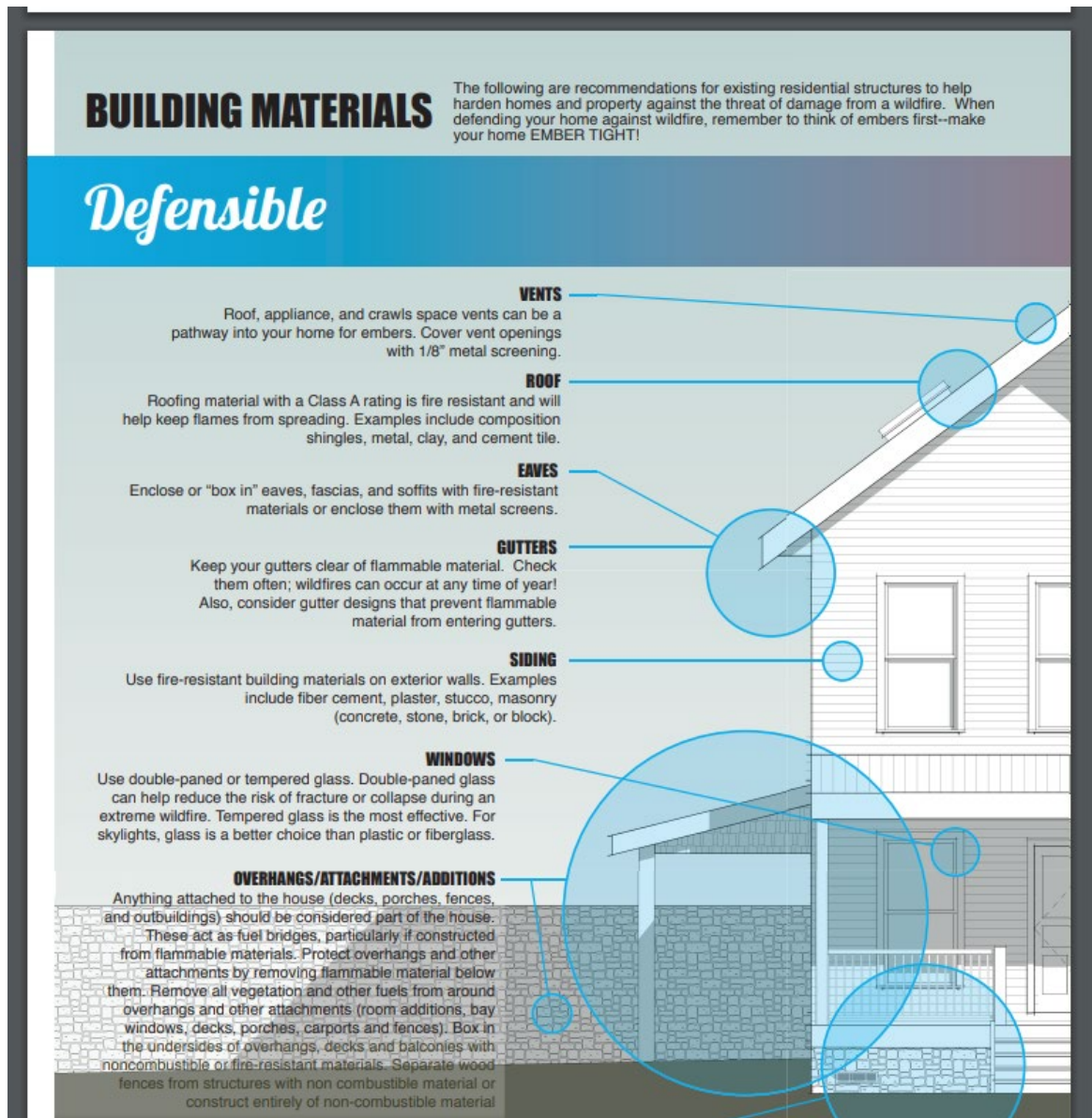
Do:

- Allow participants to introduce themselves.
- Be clear up front about expectations and intentions.
- Ask for clarification if unclear about a participant's intent or question.
- Treat participants with respect and consideration.
- Have an awareness of the barriers for individuals to speak up such as cultural; social; etc.
- Provide sufficient time and space for participants to gather their thoughts and contribute to discussions.
- Call on individuals who are not speaking.
- When there are lulls in the conversation, summarize recent observations and ask for the group's feedback on that summary.
- Ask questions or offer summaries to keep the group on the subject matter.

Don't:

- Use language that will exclude certain people from understanding the context of the discussion, or make them feel uncomfortable (e.g., too much use of jargon like “sustainability”)
- Over-generalize behavior or have stereotypical expectations of participants.
- Move too quickly to the next question when there are momentary pauses in the conversation; instead, consider first offering a re-statement of a recent comment, or a summary of major points that the group has offered.
- Use (or allow others to use) disrespectful language or tone, or disrespectful non-verbal communication.
- Allow only the dominant or more verbal participants to take over the conversation.
- Discourage alternate views or counterarguments.

1. Which ones are you more likely not to adopt? Why?"



In round 2, (at about 35 minutes after the hour) participants will be shown the image below, followed by these three questions:

1. Among these ways to defend your residence, what ones are your familiar with and have even put into place? Why did you put them into place?
2. Of these measures that you have not put into place, which ones would you see as you are more likely to adopt? Why?

3. Which ones are you more likely not to adopt? Why?"

LANDSCAPING

Site Design & Maintenance

- Mow your lawn regularly.
- Create a "fire-free" area within five feet of the home, using non-flammable landscaping materials and/or high-moisture-content annuals and perennials.
- Remove dead vegetation from under deck and within 10 feet of the house.
- Water plants, trees, and mulch regularly.
- Consider using pebbles or rock-scape instead of mulch near the home's foundation where possible.
- Maintain the irrigation system regularly.
- Remove leaf clutter and dead and overhanging branches. Especially in areas where the wind "eddies" and deposits leaves and trash.
- Encourage a mixture of deciduous and coniferous trees.

Plants

- Plants should be carefully spaced, low-growing and free of resins, oils, and waxes that burn easily.
- Prune (limb) trees up six to ten feet from the ground.
- Space conifer trees 30 feet between crowns.
- Trim back trees that overhang the house.
- Install hardscape at the base of trees.

Save Your Trees
YOU DON'T HAVE TO CUT THEM DOWN IF YOU TRIM THEM UP

At the :55 minute mark, as time allows, participants will be shown again these same two graphics and asked the question: "What would likely influence you to adopt some of these measures?"