



# A Proposal for a Proactive Home Hardening Grant Program to Mitigate the Damage to Residences From Future Wildfires

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## Executive summary

Wildfire in Oregon is presenting an increasing threat to life and property in the state. As the state confronts the threat from wildfire in the future, mitigation on an individual property basis is one way Oregonians can become more resistant to damage from wildfire. Mitigation on the individual property level means creating and maintaining defensible space around the home and building homes using materials and design choices that are resistant to damage from wildfire. With the new section R327 wildfire mitigation building standards to be adopted once the Statewide Wildfire Hazard Map is final, the Oregon Legislature directed the Department of the State Fire Marshal and the Department of Consumer and Business Services to develop a report outlining what a proactive home hardening grant program might look like.

In this report, we first define what wildfire mitigation means and explore the two primary components of mitigation on the individual property level: the creation and management of defensible space and wildfire home hardening. We look at both of these aspects individually but also emphasize the importance of seeing these as two parts of a single cohesive mitigation system that is most effective when working together. From there, we look at the slate of state-administered, wildfire-related grant programs and their intent as well as the populations they target.

We then focus on several specific considerations that would need to be addressed in developing a proactive home hardening program, including:

- How best to conduct outreach and education, particularly in vulnerable communities
- Who would be eligible for the program
- Whether the program would be a reimbursement or disbursement program
- What improvements the program would incentivize
- How to verify the improvements
- The importance of ensuring the grant is a sufficient incentive for households that might not otherwise be able to afford the improvement

We close with the observation that the Department of the State Fire Marshal would be an appropriate agency to administer a proactive home hardening program and the Department of Consumer and Business Services Building Codes Division could provide valuable subject matter expertise. Additionally, we provide some recommendations for the process of developing a proactive home hardening program.

## Introduction

After the 2020 Labor Day wildfire and straight-line wind event, the Oregon Legislature directed the Building Codes Division (BCD) of the Department of Consumer and Business Services (DCBS) to create and administer a grant program. The program would benefit owners of homes and businesses damaged in the wildfires and incentivize the use of building materials and design choices intended to mitigate the risk of damage from future wildfires. BCD partnered with building departments in the counties affected by the 2020 Labor Day fires to create the Fire Hardening Grant Program. This program started accepting applications in early 2022 and has awarded more than \$3.4 million in grant funds to more than 900 applicants so far. In 2023, the legislature extended the program to the end of the 2023-25 biennium and included homes and businesses damaged in 2021 wildfires as eligible for the grant program. In 2024, the legislature further extended the application deadline for the grant program to Dec. 31, 2025. In the same bill, the legislature directed BCD and the Department of State Fire Marshal (OSFM) to collaborate on a report on a possible proactive home hardening grant program. This proactive program would provide incentives to mitigate homes before they are threatened by wildfire.

## Wildfire mitigation and its components

Wildfire mitigation is a collection of actions that can be taken to reduce the damaging effects of a wildfire on property. Mitigation is not about reducing the chances of a wildfire occurring in the first place, but about recognizing that wildfires are a part of the landscape in Oregon. While prevention and suppression are important, mitigation is something that can be done on a property-by-property basis that homeowners can do to help reduce the risk to lives and property. Broadly speaking, there are two categories of mitigation actions that homeowners can take. One is creating and managing defensible space around the home. The other is constructing and retrofitting the home using design choices and materials intended to reduce the risk of ignition by wildfire and embers from wildfire.

### Defensible space management

Defensible space is a natural or human-made area in which material or vegetation capable of supporting the spread of fire has been treated, cleared, or modified, to slow the rate and intensity of advancing wildfire. As a result of good defensible space maintenance, residents may have greater time to evacuate, allow a safer space for fire suppression operations to occur, and make structures more resilient to wildfire. Defensible space is considered a first line of defense for structures in reducing the risk of wildfire damage. Defensible space can offer protection from firebrands and embers that can travel several miles from the fire front. Studies show that well-maintained defensible space can increase a home's chances of surviving a wildfire, providing protection even if firefighters cannot reach it.

Creating defensible space does not mean eliminating all vegetation on a property or around a home. It means reducing ladder fuels, removing overhanging branches over structures, and removing dead or dying easily combustible ground-level vegetation, etc. from around homes and other structures. For example, well-maintained defensible space would not eliminate all trees and bushes from around a structure. Instead, they would be trimmed so portions would not be directly touching the structure or leaning against it, eliminating a pathway for fire to travel.

Also, the reason this section is titled defensible space management instead of creating defensible space is because it is important to maintain defensible space in an ongoing manner. This means removing debris that builds up in gutters or under decks and making sure that dead leaves are not piled up against an exterior wall of the home. It also means monitoring trees and bushes to make sure that they are trimmed back if necessary or removed if the plant dies. All this maintenance will reduce the chance embers from a nearby wildfire will find fuel near the home, while creating a space for potential firefighting and fire suppression operations to occur.

## Wildfire home hardening

Wildfire home hardening means using building design choices and materials that reduce the chance a home will be damaged by a wildfire. A home hardened against damage from wildfire will have exterior aspects of the home made from materials that are resistant to ignition or heat, such as cementitious siding, metal roofs, and double-pane windows. While no building can be completely fireproof, employing design choices and materials designed to resist damage along with active defensible space management can give it the best chance of avoiding damage when a wildfire is near.

Unlike defensible space management, which is a continuous process of property upkeep and management as vegetation continues to grow and create more organic debris (e.g. dead leaves, sticks, bark, etc.) year to year, home hardening is not a continuous process but rather a decision that is made when a home is built or remodeled. Home hardening is only maintained as the relevant elements of the home wear out and need to be replaced. There is still a need to monitor the condition of elements such as roof covering, siding, and ventilation openings to make sure they are not in need of replacement or repair. But roof coverings, in general, will not need to be maintained in the same way homeowners need to monitor and maintain tree limbs or leaf piles.

## Mitigation as a cohesive system

It is important to think of wildfire mitigation as a single cohesive system and not as two separate efforts. Neither defensible space nor home hardening is as effective on its own as it is when combined. No building can truly be “fire-proofed,” and so even a building built to modern wildfire mitigation standards can have the effectiveness of those choices compromised by poor maintenance of defensible space. Similarly, a home with perfectly maintained defensible space but a roof and walls covered in cedar shakes will not be particularly resistant to ignition or damage from a nearby wildfire. Because these two types of wildfire mitigation are so intertwined in their effectiveness, any program to incentivize one should be designed and run with the other type of mitigation in mind.

Because a whole-system approach is important when it comes to wildfire mitigation, BCD and OSFM, along with a number of other state agencies, have already agreed to implement the state’s community wildfire risk reduction strategy. This strategy is intended to reduce wildfire risk, align and use funding mechanisms for communities, and make communities more resilient to wildfire.

# The current Fire Hardening Grant Program

When the legislature allocated \$10 million in grant funds and directed BCD to develop the Fire Hardening Grant Program in 2021, BCD did not have any grant making infrastructure or experience. Because of this, BCD sought to work closely with the affected counties to administer the program both to make use of the county staff's presence in the communities and to leverage the existing building permit and inspection process to verify grant eligibility.

## Eligibility

The grant program sought to avoid complicated eligibility considerations that can sometimes create obstacles to participation in disaster recovery programs. Only the following requirements were used to assess program eligibility:

- **Identity:** The applicant must be who they say they are. This is verified using a government identification that is also matched against property records used to verify ownership.
- **Ownership:** The applicant must be a *current* owner of a home or business that was damaged or destroyed by a qualifying wildfire. The program made the current owner the eligible applicant because the intent of the program was to mitigate future damage, and the current owner is in the best position to make those incentivized improvements. Current ownership is verified using county property records.
- **Fire damage:** The qualifying home or business must have been damaged or destroyed by a qualifying wildfire. This could be verified by being included on county lists of damaged properties, being located within a burn scar, through supporting photos or documentation from the time following the fire, or other acceptable documentation.
- **Qualifying improvement:** The applicant must have completed work on at least one qualifying fire hardening improvement. This is verified by an on-site or virtual inspection performed by either county or state inspection staff.

## Qualifying improvements

When BCD was developing the program, it created a list of improvements the program could incentivize with grant funding. That list was based on the wildfire mitigation construction standards in Section R327 of the Oregon Residential Specialty Code. The following table outlines the incentivized improvements and the associated grant amounts.

Element	Options	Grant amount
<b>Roofing</b>	Class B or Class A	\$2,200
<b>Exterior wall covering</b>	Must be constructed from one of the following: <ul style="list-style-type: none"> <li>• Noncombustible</li> <li>• Ignition-resistant</li> <li>• Heavy timber assembly</li> <li>• Log wall assembly</li> </ul>	\$1,750
<b>Ventilation</b>	Options: <ol style="list-style-type: none"> <li>1. Vents designed to resist ember and flame intrusion</li> <li>2. Unvented attic assembly</li> </ol>	\$350
<b>Overhangs, cantilevers and projections</b>	Underside of eaves, soffits, cantilevers, etc., protected by one of the following: <ul style="list-style-type: none"> <li>• Noncombustible material</li> <li>• Ignition-resistant material</li> <li>• Exterior portion of 1-hour wall assembly</li> <li>• 1 layer of 5/8-inch Type X exterior gypsum sheathing or equivalent</li> </ul>	\$400
<b>Walking surfaces of porches, balconies and decks</b>	Must be constructed from one of the following: <ul style="list-style-type: none"> <li>• Noncombustible</li> <li>• Ignition resistant</li> <li>• Exterior fire-retardant treated wood</li> <li>• Materials meeting ASTM E2632</li> </ul>	\$550
<b>Windows &amp; Skylights</b>	Protected by one of the following: <ul style="list-style-type: none"> <li>• Tempered glass</li> <li>• 20-minute fire-resistance-rated assembly</li> </ul>	\$550
<b>Skirting (Manufactured Homes only)</b>	Made from one of the following skirting materials: <ul style="list-style-type: none"> <li>• Noncombustible</li> <li>• Ignition resistant</li> </ul>	\$500
<b>Accessory structures within 50 feet of a residential or commercial building</b>	Improve the structure with both the roofing and the exterior wall covering elements above. Up to two structures are eligible for the grant.	\$500 per structure, max \$1,000



## Program administration

Because BCD had not previously administered a grant program, the decision was made early in development that it would be best to partner with affected counties to administer the program. BCD would handle the policy development and back-end program operations, such as accounting and fund distribution to counties. The counties would work directly with applicants to help them navigate the program verifying applicant eligibility and the completion of qualifying improvements.

This division of labor was effective because the county building departments already had a built-in touch point with people who were rebuilding after the wildfires. That is because they would need to work with the county to secure building permits during the rebuilding process. They would also need to have the work performed under those permits inspected by the county after the work was completed. BCD has staff members able to develop program policy that would be standard across the program and a dedicated fiscal team that could work with the fiscal team at DCBS to manage the program's grant and administrative funds. Those administrative funds, while managed by BCD, are 100 percent passed through to the counties to support the implementation of the program. BCD has been absorbing all of its costs.

This arrangement has worked well for the finite timeline of the current grant program, but over the long term, it would be unsustainable for BCD to absorb program administration costs indefinitely. Additionally, county partners have said the administrative funds that have passed through to them have been insufficient to cover the full cost of administering the local aspects of the program. Finally, while rebuilding from fire loss always required permitting and inspection, changes to an existing home to add home hardening elements do not always require a permit, meaning the efficiency of using local building departments may be lost if there is no permitting and inspection for the home hardening provision.

## Oregon State Fire Marshal Grant Programs

The Oregon State Fire Marshal has successfully administered numerous grant programs related to wildfire response and mitigation. Combined, these grant programs have distributed more than \$70 million to assist fire departments, counties, municipalities, nonprofit organizations, and individuals confronting the growing threat of wildfire in Oregon. The following is a list and brief description of the many successful programs OSFM has managed in the past five years. More information about these programs is available on OSFM's [website](#).

### Defensible Space Incentive Grant Program

The Defensible Space Incentive Grant Program allocated funding to schools and hospitals to create defensible space for added protection in the event of a wildfire. The program delivered a one-time grant to any Oregon public or private school, university, or hospital to assist recipients with improving their vegetative landscaping and maintaining defensible space.

### Wildland Urban Interface Assistance Grant Program

This program distributed grants to Oregon fire services to improve the capacity and capability of fire protection districts and fire departments across Oregon. These grants enabled recipients to



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protect their communities and play a pivotal role in wildland fire prevention and suppression in the Wildland Urban Interface. Priority was given to fire agencies that were affected by the 2020 fire season as well as agencies serving underrepresented and underserved communities.

## Community Wildfire Protection Plan Investment Program

This was a strategic one-time investment at the local and county levels through community wildfire protection plans. Funds were distributed within 25 counties: Baker, Benton, Clackamas, Coos, Crook, Curry, Deschutes, Douglas, Gilliam, Hood River, Jackson, Jefferson, Josephine, Lake, Lane, Lincoln, Linn, Malheur, Marion, Morrow, Multnomah, Polk, Wallowa, Wheeler, and Yamhill. Projects included promoting wildfire-specific community risk reduction efforts, community education, defensible space projects, home assessments, media campaigns, signage, fuel mitigation programs, and grant funds.

## Engine Program

This program purchased and strategically placed new firefighting equipment across Oregon. New type 3 and type 6 engines and tactical tenders helped local host agencies keep fires small and away from communities.

## Oregon Fire Service Capacity Program

The Oregon Fire Service Capacity Program was for small- to medium-sized agencies that needed more permanent firefighters and fire prevention staff. This grant was available to Oregon's local fire districts and departments for funds to support up to two firefighters and two fire prevention personnel. This funding increased local on-duty capacity throughout the next three years; allowed agencies to quickly mobilize to fires at the local, regional, and state (conflagration) levels; and better prepared communities to survive wildfires. More on-duty firefighters keep fires small before they can affect communities.

## Community Wildfire Risk Reduction Grant Program

The Community Wildfire Risk Reduction Grant was open to local governments, special districts, structural fire service agencies, and nongovernmental organizations. The grant funded wildfire risk reduction projects, equipment, and staff. These projects helped protect people, property, and communities, preparing communities for wildfire effects and creating a more fire-adapted Oregon.

## Wildfire Season Staffing Grant Program

The Wildfire Season Staffing Grant Program distributes grants to the Oregon fire service to provide structural fire agencies across the state with resources to augment firefighting staff. These agencies protect Oregon communities and play a pivotal role in preventing and suppressing wildfires. The grant is intended for local fire agencies to increase firefighter staffing during the wildfire season from the beginning of June to the end of October.

# A proactive home hardening incentive program

## Importance of a proactive incentive program

While the current home hardening grant program has been effective at helping wildfire survivors rebuild with mitigation in mind, the best time to harden a home will always be *before* a wildfire happens. Oregon has already taken steps toward ensuring that future homes built in high-hazard areas of the Wildland Urban Interface (WUI) will be built using the wildfire mitigation construction standards in Section R327 of the Oregon Residential Specialty Code. Those requirements will be adopted by rule after the statewide wildfire hazard map is final and will apply to all new construction of homes and certain accessory structures in a high-hazard zone of the WUI. This means that once those standards apply, the only high-hazard housing stock in the interface that will not be hardened against wildfire damage will be the stock that currently exists.

Housing stock does not have a high turnover rate. While there is no measured effective lifespan for a home in Oregon, there are effective lifespans for the various components of a home, including the components that will be required to be hardened against wildfire under the code requirements of Section R327. The lifespan on some of the components that are covered by the wildfire mitigation construction standards can be 20 years or more. This means that if a home is built today (before the new code standards are required) and is built without wildfire mitigation being considered, then that home could exist on the landscape for 20 years or more before the components need to be replaced from the expiration of the natural lifespan.

A program that incentivizes proactive home hardening would help speed up the process of retrofitting current homes with wildfire mitigation building materials and design choices by empowering homeowners to take action to protect their homes and communities. This would more rapidly close the gap between the level of preparedness of existing homes when compared to new construction and reduce losses due to wildfire quicker than just requiring mitigation improvements on new construction. Increasing mitigation implementation will result in less losses due to wildfire and help control the costs of recovery from wildfire.

## Considerations for a proactive home hardening program

### Importance of outreach and education

Even the most well-designed incentive program will fail to make an effect if the people intended to benefit from the program either do not know about the program or do not understand what the it does. This is why any proactive home hardening program will need to be accompanied by a robust education and outreach program. This education and outreach will be most effective if it takes a broad-spectrum approach and is done in partnership with counties, local municipalities, and fire districts, and is backed up by significant expertise and experience.

A broad-spectrum approach to education and outreach would mean a homeowner that may be eligible for the program could find out about it through many different sources. Some of these sources could be orchestrated centrally by the agency running the program, such as advertising on the radio and through a social media campaign or creating centralized press releases, pamphlets for distribution, and a program website. Other avenues for program awareness could

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be done in partnership with local municipalities, community-based organizations (CBOs), and tribal governments. These activities could include using local town halls and outreach meetings, training city and county staff members on the program so they can be a resource to their constituents, convening agency partners to conduct educational webinars, and engaging with CBOs to act as application intake agents for the program.

The goal of the total outreach and education plan should be to cast a wide net so it is difficult for an eligible homeowner not to know about the program. To serve this end, as the program is ramping up, it could capture applicant responses on how they learned about the program to help allocate outreach resources in the future. All outreach could be coordinated through a central system maintained by the program containing comprehensive public information on wildfire covering the topics of defensible space and home hardening.

## Focusing outreach in vulnerable communities

It will be important to be mindful of the needs of vulnerable communities when developing a proactive program and its education and outreach. Senate Bill 762 (2021), the same bill that created the requirement for a wildfire hazard map, also required the hazard map to include a layer that would display the locations of socially and economically vulnerable communities. This layer has been created and is based on the Social Vulnerability Index (SVI) developed by the Centers for Disease Control and Prevention (CDC). The CDC created the SVI so it could be used to help target communities that are at an increased risk of being adversely affected by hazards due to demographic and socioeconomic factors. These factors include things such as poverty level, unemployment level, English-language proficiency, presence of historically disadvantaged racial and ethnic minorities, and availability of transportation.<sup>1</sup> The program can use this layer of the wildfire hazard map to focus additional education and outreach resources in those communities.

CBOs and affinity organizations will be particularly useful in this type of outreach. Once a community has been identified as being particularly vulnerable to hazards, engaging with organizations that are already active in the community can help create inroads for the program. If the organizations have a history of successfully working in the community, then a partnership could lend the program legitimacy and trust in what otherwise may be seen as a new and untested program.

## Program eligibility

One of the primary considerations for any proactive home hardening program will be determining what applicants will be eligible for the program. BCD's current program determines eligibility largely based on whether a building was damaged by a qualifying wildfire, but the motivation for a proactive program would be to incentivize mitigation design choices before a wildfire ever occurs to prevent damage from happening. Several options appear to be viable ways of determining eligibility:

- **Every homeowner:** In some ways this would be the easiest eligibility requirement to administer. By making every homeowner in the state eligible for the program, the program would be able to reduce the burden of verification, and the program would run more efficiently as a result. The drawback of this would be the program would likely incentivize home hardening design choices in areas of the state where they will only have a minimal impact.

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<sup>1</sup> This is not a complete list of factors. A more detailed explanation of the composition of the SVI can be found at <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html#print>.

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- **Wildland Urban Interface (WUI):** One way to refine eligibility and make the program more targeted would be to focus program eligibility to homeowners in the WUI as defined by the wildfire hazard map developed by the Oregon Department of Forestry and Oregon State University. This would narrow the eligibility to areas where there is a greater threat posed to residential areas by wildfire by using the incentives to create a buffer of hardened homes between rural and urban areas. This would still allow eligibility for homes located in areas that are only subject to a medium- or low-wildfire hazard.
- **High-hazard wildfire zones:** Similar to the above, the program could limit eligibility to areas of high-wildfire hazard on the wildfire hazard map developed by the Department of Forestry and Oregon State University. This would capture all homes that will be subject to the requirements of the R327 wildfire mitigation building codes – homes that are in the high-hazard zones and in the WUI – as well as all homes that are outside of the WUI but still subject to a high level of wildfire hazard on the landscape.
- **Either/or:** The program could take a more targeted approach than making all homes eligible while also creating broader eligibility by allowing homes that are either in any hazard zone included in the WUI or in a high-hazard zone anywhere in the state.
- **Both/and:** This would be the most restrictive geographically based eligibility criteria that would be reasonable. This would limit eligibility to homes that are in high-hazard areas of the WUI. In other words, this would limit eligibility only to homes that are going to be covered by the requirements of the wildfire mitigation building code standards in R327.

It would not be necessary to decide on one eligibility determination to the exclusion of all others. The program could take a tiered approach to eligibility. For example, the program could start by only accepting applications from homes that are both in the WUI and in a high-hazard zone, and then, over time, open eligibility to additional tiers of applicants such as WUI residents in a medium-hazard zone or non-WUI residents in a high-hazard zone.

## Eligibility for wildfire survivors

Survivors who lost their homes or were severely damaged in a wildfire and are rebuilding, would be another group of Oregonians that could be eligible for the program. Homes that are in the process of being rebuilt are excellent candidates for home hardening improvements because they are not subject to some of the additional costs that are associated with a retrofit. For example, if a new roof is going to be installed either way, a qualifying Class A or B roof will often be no more expensive than non-hardened alternatives.

## Primary residency requirement

The program should consider whether it will limit eligibility to primary residences. From an equity standpoint, limiting the program to primary residences will restrict grant availability at the higher end of the income spectrum. Alternatively, second homes are no less susceptible to damage from wildfire, and in turn becoming fuel for a wildfire, than a primary residence. So, if the goal is to mitigate the larger risk of wildfire, it may make sense not to limit eligibility. This may also be another opportunity to embrace tiered eligibility with earlier tiers focusing on providing grants for primary residences and then expanding eligibility later in the program's lifespan.

## Income limits

Another way to gauge program eligibility would be to use income limits. An example of an income limit would be to only provide grants to homeowners who are below the statewide median income, or below 80 percent of the statewide median income. It is recommended that the program use statewide median income instead of area median income because the cost of

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home hardening improvements is more uniform across the state than area median income. The benefit of income limits would be that the program could direct more grant funds to homeowners that are less likely to be able to afford the improvement without the grant.

Using income limits does have challenges though. If the program were to use income limits, that would require the program to verify the income of applicants. This means the program would need to define how an applicant would prove household income, likely with paystubs or the previous year's tax returns. This would create additional document retention, data security, and privacy concerns surrounding the verification of those documents.

## Reimbursement versus disbursement

It would need to be decided whether the proactive home hardening program is being administered as a reimbursement program or a disbursement program. A reimbursement program awards a grant to the applicant after the work is completed. A disbursement program awards a grant to the applicant before the work has started. A reimbursement program is easier to administer because it requires less tracking and monitoring of the usage of funds. No funds are awarded until all the criteria to receive the funds have been met so there is significantly less chance that the funds will need to be clawed back. A disbursement program can be more challenging to administer for that reason, but it may allow more homeowners to participate because a homeowner that has insufficient funds to start the work on their own may be able to count on grant funds to assist with the costs to start the project.

A program could also employ both reimbursement and disbursement along with income-based eligibility determinations to alleviate concerns about access to the program while minimizing the challenges to program administration. For example, a program could award the grant as a disbursement to applicants at or below the statewide median income while awarding it as a reimbursement to applicants above the statewide median income.

## Defining qualifying improvements

A new proactive home hardening program would have an opportunity to reconsider what building materials and design choices should be incentivized by the program. BCD is confident in the options being incentivized by the current program, but it does not align perfectly with Section R327. For example, the vents incentivized by the current program are more protective than the vents required by R327. The current program requires the use of vents specifically designed to reduce ember intrusion, whereas section R327 only requires vents that include metal-screened openings no larger than 1/8 of an inch in some scenarios.

In addition to the type of improvements that qualify, the program will also need to consider what kind of structures and how many of which on a property will be eligible. As mentioned above, the current grant program run through BCD incentivizes improvements on the home and has a separate grant that is available for accessory structures on the property that are near the home. This additional grant is smaller and only available if the accessory structures are within a specific distance of the home and must be improved with both hardened roofing and siding. This choice was made because a barn near a house that ignites will increase the risk to the house. The program could do something similar; it could employ a different option for accessory structures, or it could decline to incentivize any improvements on accessory structures. Similarly, some properties have multiple separate dwellings on a single lot, and the program would need to determine whether it would provide grant incentives on multiple buildings on a single lot if those buildings are all dwellings.



# Challenges presented by a proactive home hardening program

## Grants as taxable income

The intricacies of tax law are outside the expertise of the authors of this report; however, it is likely the Internal Revenue Service (IRS) will consider grants provided to individual homeowners by a proactive home hardening program as taxable income for the purposes of calculating tax liability. Grants made by BCD's fire hardening grant program were able to avoid being considered taxable income when the qualifying structure was the applicant's primary residence because the program was helping *rebuild* after a disaster-related loss. When California implemented an earthquake damage mitigation program to help residents fund retrofits designed to mitigate future damage from earthquakes, the IRS determined that these grants were taxable income because they were not awarded in response to a specific disaster that damaged the structure. If the grants are taxable income, there are also additional administrative requirements for the grant provider to issue additional documentation and collect additional data from grant applicants.

## Verification of qualifying improvements

BCD's current program leverages the normal permitting and inspection process to minimize the need for inspectors to perform additional work verifying that applicants have completed qualifying work and are eligible to receive program grants. This approach works because applicants are already rebuilding and pulling permits after the 2020 Labor Day fires.

The applicants for a proactive home hardening program would not already be rebuilding and pulling permits, and the home hardening improvements being incentivized do not necessarily require a permit to be completed. This means the efficiencies created by using the normal permit inspection process would not necessarily be available to a proactive program and would make the program more expensive to administer.

If possible, it would be beneficial to couple the verification process with a preexisting reason for visiting the applicant's home to reduce program costs. For example, if someone reviewing the property as part of a defensible space assessment could also review the use of qualifying home hardening improvements, that would capture some of the same efficiencies as the current fire hardening program. It may also be possible that someone visiting the property could collect documentation of the installed improvement, and then an off-site expert could verify the documentation to confirm the qualifying improvement. This documentation could include photos, videos, copies of invoices that list materials used, etc.

## Creating a sufficient incentive

With any incentive program, it will be important to consider whether the benefit offered is sufficient to elicit the action desired. While there is never a downside to a homeowner choosing to harden their home against wildfire damage, the measurement of success for an incentive program is to use the incentive to get homes hardened that may not otherwise have been hardened. Otherwise, the benefit from the program is not so much an incentive as a bonus awarded to homeowners that had already planned on, and could afford, home hardening.

# A Proposal for a Proactive Home Hardening Grant Program to Mitigate the Damage to Residences From Future Wildfires

To that end, the program would need to consider the costs of the retrofits that are being incentivized and the grant amounts that are likely to incentivize someone to move forward with those improvements. It is important to note that material and design choices that resist damage from wildfires are not necessarily more expensive than the less resistant alternatives, or at least not dramatically so. However, several of the improvements, such as replacing roofing, siding, and windows, are a significant cost burden regardless of materials chosen. So, if the goal is to incentivize a homeowner to replace their roof, siding, and windows, then the incentive must do more than simply bridge the gap between the cost of nonhardened and hardened materials. The incentive must reduce the cost to the homeowner of replacing a roof, siding, and windows to a price that the homeowner can afford to pay.

For example, if a home has cedar shingle roofing, cedar siding, and single-pane windows, the cost to replace each of those with a wildfire resistant replacement option could be \$13,180, \$20,580, and \$12,050, respectively, for a total cost of \$45,810.<sup>2</sup> Not every home would need all three of these high-cost items. If a homeowner replaced their roof with a metal roof 10 years ago, then the roof would still have 65 to 90 years of expected lifespan remaining. But it is helpful to consider the potential project cost of a home that requires updates to all three major components. For a grant program to provide an incentive that will entice homeowners to take on the project of retrofitting their home, the grants would need to offset a significant portion of that total project cost. This is not to say that homeowners do not value wildfire mitigation sufficiently to want to invest in it. Instead, it is to point out that many, particularly lower income, households may not have the resources to invest in the project without a grant to offset a significant portion of the costs.

Fortunately, many homes will not need to retrofit all elements of the home. Generally speaking, asphalt shingles and cementitious siding are either comparable in price or cheaper than wood siding and roofing and are both commonly selected options during remodels. Similarly, if a home has had its windows replaced in the past 40 years, it likely would have been required to use double-pane windows that would meet the requirements of R327. So, while it is important to consider the potential total project cost, it may be possible for a program to scale the grant amount based on a more accurate estimated project cost after doing an assessment of the home.

## Recommendation

In summary, the Oregon State Fire Marshal would be an appropriate agency to administer a proactive home hardening grant program based on its experience and success in this arena, with the Department of Consumer and Business Services Building Codes Division providing subject matter expertise in support. However, with this newly added program responsibility for OSFM, additional staffing and proper funding will be necessary to accomplish the goals set forth in this report. Current resource allocation would not be able to absorb the additional workload and time this program would require to make it efficient and effective as we work to make Oregon communities more wildfire resilient.

OSFM is well suited to administer this program because it has significant prior grant coordination and administration experience, along with a robust education and outreach program. It will be able to leverage the grant-making infrastructure and public interface that already exist within OSFM to develop and stand up the program efficiently. OSFM has significant ties to local communities, both directly and through its relationships with local fire districts and other stakeholder groups.

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<sup>2</sup> These numbers are from a study performed by Headwaters Economics in 2018. They have not been adjusted for inflation and actual costs today would likely be higher.



OSFM has the subject matter expertise and program oversight on various wildfire mitigation and resilience programs, including defensible space, community risk reduction, and public education. It would be able to effectively communicate the importance and goals of this new program. The defensible space program that OSFM administers creates the opportunity for a member of the fire service to meet with a resident to conduct an assessment of their property to determine what wildfire preparedness recommendations could be made. These wildfire mitigation experts can provide additional guidance and recommendations regarding home hardening. This would allow the program to leverage a preexisting program to connect with homeowners regarding a new proactive home hardening grant program.

BCD will support OSFM's program and provide additional subject matter expertise relating to the home hardening measures that are included in the new wildfire mitigation building code requirements. BCD and OSFM already have a partnership agreement and frequently work together on issues relating to building safety and the effects of fire and disasters on the built environment. It would be a natural fit for BCD to continue to support a home hardening grant program administered by OSFM.

## Program policy recommendations

The following are policy recommendations for the program:

- As discussed above, home hardening works hand in hand with defensible space and both of these work better when done together with a broader community wildfire risk reduction strategy. This program will be more effective if it is being run as a part of a suite of programs designed to mitigate wildfire damage on the community level – not just at the structure or tax lot level.
- It should be made clear that the program is voluntary and that no homeowners are required to participate in the program.
- The development, process of awarding, and implementation of this program needs to allow the opportunity for stakeholders to provide input and feedback before delivery to maximize efficiency and effectiveness.
- Evaluate various data aspects related to wildfire resiliency to determine the best methods of eligibility including – but not limited to – social vulnerability, wildfire hazard classification, conflagration responses, wildfire residential damage/loss, and other potential data points.
- Establish and maintain an extensive and broad outreach and education campaign that includes aggressively partnering with other state agencies and local fire agencies, building officials, and other pertinent stakeholders.

## Conclusion

The effect of wildfire in Oregon in recent years – and currently – is undeniable, and there is no doubt that it will continue to pose a threat to life and property in the future. Taking steps to mitigate the damage from a wildfire is one way Oregonians can address some of this increased risk. OSFM and BCD are committed to working together to empower Oregonians to mitigate the risk of damage from wildfire. A proactive home hardening grant program would be a valuable tool to help communities adapt to the increased risk from wildfire. OSFM's grant infrastructure, community connections, and public education expertise make them the most suited agency to administer the program. BCD and OSFM already work closely together on statewide code matters, and BCD is ready to support OSFM with technical information and a transition plan for the current home hardening grant program for wildfire survivors. Together, OSFM and BCD will help protect Oregonians and our communities through defensible spaces and home hardening support.