

FIRE SMART COMMUNITY PILOT PLAYBOOK

Building Fire-Ready Communities Through
Innovation & Collaboration

JUNE 2026





SUMMARY

Wildfire risk in the Tahoe Basin and across the West is escalating, which is threatening lives, property, and the environment. Land managers and homeowners are facing more pressure than ever to mitigate that risk. While comprehensive models exist for identifying, prioritizing, and implementing effective mitigations in the wildland (e.g., fuels reduction treatments in forests), it has been difficult to create similar models for doing so at the neighborhood and parcel levels.

Fortunately, the availability of new technologies is upending the status quo, and unlocking opportunities for neighborhoods and homeowners to better prepare for wildfire by providing them with highly tailored, site-specific recommendations for action.

The Fire Smart Community Pilot program was launched in spring 2025 to create the most fire-ready communities in Tahoe by bringing together many of these new technologies, local fire districts, residents, and wildfire researchers to identify, prioritize, and implement what we call the “mitigations that matter most.”

The first Pilot took place in Tyrolian Village, a 61-acre, 228-unit homeowners association (HOA) in Incline Village, NV. The Pilot program has since expanded to five additional communities in the Tahoe-Truckee region: Incline Pines, Glenbrook, Gardner Mountain, Carnelian Woods, and Martis Camp. Each of these communities is different — in size, governance structure, funding availability, and experience with wildfire resilience work.

The intent is to use lessons learned from each to create a model that can be exported throughout Lake Tahoe and the West. We hope this model will help decision makers allocate limited resources to the highest-value mitigations in their communities.

So far, the Pilots have demonstrated that with the right tools, teamwork, and commitment, neighborhoods in wildfire-prone areas can build a more resilient future — one that safeguards both the people and places we love.

This playbook focuses on the Tyrolian Village Pilot. It is our attempt to capture the Pilot process and learnings in real time, so that you too can create a Fire Smart Community.



PILOT OBJECTIVES

The Pilots rest on a simple premise: New technology allows us to think differently about how we identify, plan, and execute mitigations that will have the biggest impact on reducing risk to life and property in communities within the wildland urban interface (WUI).

MISSION

Create the most fire-ready neighborhoods in the Tahoe-Truckee region by bringing together the latest technology to identify and implement the mitigations that matter most within the natural and built environments.

GOALS

- Protect lives, property, and natural resources.
- Create a process for quantifying the difference in risk before and after mitigations are implemented.
- Where possible, inform better insurance outcomes.
- Build a replicable model that others — in Tahoe and throughout the West — can adapt and implement in their own communities.

While the Pilots are still ongoing, they are already generating valuable lessons for replication.

A NOTE ON INSURANCE

The Pilots are focused on increasing community resilience. Aligning that work with positive insurance outcomes is a desirable secondary objective. We have been careful not to tie the success of the Pilots to insurance outcomes alone; although, through the use of data, analytics, and modeling, we do hope to influence favorable results.

CORE PILOT STEPS

The figure below illustrates the core steps of the Pilot program and a sample timeline for implementing them. These can be adapted to meet your community's unique starting point, needs, and stakeholders.



Notably, the Tyrolian Village Pilot adds a middle round of modeling ("Modeling Phase 2") that is not included in the Core Pilot Steps. This was done intentionally to isolate the different impacts on risk reduction of vegetation mitigation versus defensible space and home hardening mitigation.

THE TYROLIAN VILLAGE PILOT



THE COMMUNITY

Tyrolian Village is made up of 228 homes across a 61-acre footprint. The Tyrolian Village Homeowners Association (TVA) owns common-space land up to five feet from all residences.

KEY PLAYERS

- Tahoe Fund, in partnership with the North Lake Tahoe Fire Protection District (NLTFPD), convened partners and handled the logistics of calendar invites, agendas, and organizing a demo day to build awareness about the Pilot. They also played an important role in managing outreach to stakeholders and generating media about the Pilot to encourage other communities to do similar work.
- NLTFPD led all mitigation planning, inspections, and implementation.
- Greg Erfani, President of TVA, was the community champion, organizing and generating support from neighbors. Greg obtained grant funding and worked closely with NLTFPD on implementation.
- The Climate and Wildfire Institute (CWI), through the support of the Gordon and Betty Moore Foundation's Wildfire Resilience Initiative, provided resources and expertise in planning, execution, and documentation of the pilot.
- The Tahoe Regional Planning Agency (TRPA) provided technical, regulatory, and advisory assistance.
- Fire Aside digitized defensible space inspections and provided each homeowner with personalized defensible space and home hardening recommendations.
- Vibrant Planet and Dr. Hussam Mahmoud modeled risk and prioritized parcel- and neighborhood-scale mitigations that NLTFPD, TVA, and residents could act on.
- BurnBot expedited fuels reduction work with their remote mastication equipment.

STEP-BY-STEP GUIDE & KEY LEARNINGS

✓ STEP 1

ASSEMBLING THE TEAM & TECH

Engage core pilot partners and determine which technology tools you will bring into the project. Then use modeling tech to identify a high-priority neighborhood in your community.

- Community Champion: TVA President Greg Erfani
- Fire District Leadership: NLTFPD Chief Ryan Sommers and Division Chief Isaac Powning
- Nonprofit Convener: Tahoe Fund
- Tech Tools: BurnBot, FireAside, Vibrant Planet, and Dr. Hussam Mahmoud's AGNI-NAR model



KEY LEARNINGS

The Right People Are Critical To Success

Identify your fire district lead, community champion and a convening organization that can pull together the collaboration.

Pick Your Tech Tools Early

Assemble your team of tech partners as early as you can so they can see the entire scope of work, from beginning to end.

You Are Building A Think Tank

You will find yourself troubleshooting at all phases of the project. Embrace the challenges as opportunities to improve the process for future efforts. Use your stakeholder group as a think tank that solves problems quickly and openly.

De-Risk Tech For Fire Districts

Nonprofits and other organizations with flexible capital can play a key role in demonstrating innovative technologies for fire districts and other implementers. Technology is new and can be seen as risky, so overcoming this hurdle is important.

Modeling Enhances Boots-On-The-Ground Decision Making

Fire district personnel are at the center of the Fire Smart Community model. They are leaders at each stage. High-tech modeling is a tool that is meant to enhance, not replace, their deep, boots-on-the-ground knowledge. It can be used to help accelerate decision making and ensure that areas with the highest wildfire risk are prioritized for mitigation.

✓ STEP 2

PUBLIC LANDS MITIGATION

Mitigate the fire risk outside of the neighborhood.

NLTFPD and NV Energy treated public lands and utility corridors outside of the neighborhood, resulting in adjacent risk reduction and safer ingress/egress for evacuations.

✓ STEP 3

NEIGHBORHOOD-SCALE FUELS MODELING

MODELING PHASE 1

Use a tech company to model the neighborhood's baseline risk. Vibrant Planet ran models on Tyrolian Village to establish its baseline wildfire risk, and identify and prioritize strategic fuels mitigations that would reduce that risk to homes in the neighborhood.

✓ STEP 4

NEIGHBORHOOD FUELS REDUCTION

Reduce hazardous vegetation in the neighborhood.

NLTFPD conducted hand thinning in the neighborhood and built community-adjacent fuel breaks. TVA hired a contractor to remove dead trees within the community.

Use tech-driven tools to conduct efficient fuels reduction activities within and around neighborhoods.

Guided by a prescription from NLTFPD — which was informed by modeling from Vibrant Planet and BurnBot — BurnBot executed priority vegetation removal in common areas with remotely-operated masticators. BurnBot treated 36 acres in under one week. By contrast, the 27-acre hand-thinning portion of the project took three times as long to complete.

KEY LEARNINGS

Start Outside The Neighborhood

Mitigating public lands and utility corridors bordering neighborhoods is critical to reducing risk within neighborhoods. You can't make a neighborhood safe without mitigating fire pathways into it.

Consider Starting In An HOA

It may be easier to start your work with an HOA that owns and can take action on the common-space land within the community. It is important to identify your community type before deciding how to deploy technology.



Fuels Reduction Looks Different Than Typical Landscaping

Prior to conducting fuels reduction work with tech partners like BurnBot, hold community meetings to educate residents on what post-fuels-reduction landscaping will look like. Emphasize increased safety for the community. A fire-ready community will have a different aesthetic than a traditionally landscaped one.

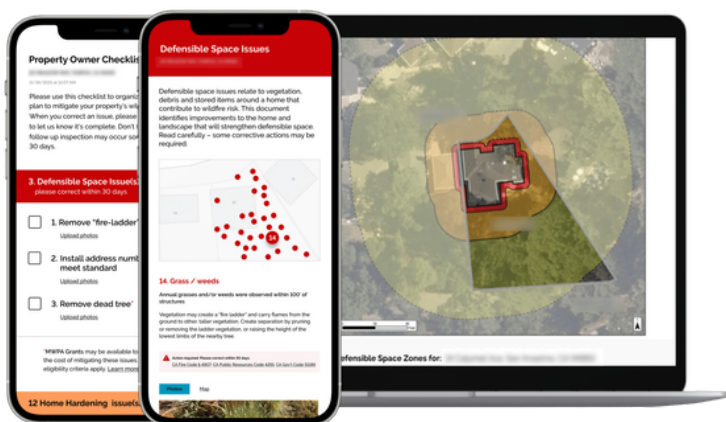
✓ STEP 5

DEFENSIBLE SPACE INSPECTIONS & HOMEOWNER REPORTS

Use technology to collect defensible space inspection (DSI) data on parcels. NLTFPD used Fire Aside, which was funded by the Tahoe Community Foundation, to conduct 228 DSIs, calculate Structure Exposure Scores for each home, and generate personalized recommendations for home hardening and defensible space improvements, such as roof and gutter modifications, and Zone 0 clearing.

Share DSI reports with homeowners. Reports were distributed electronically to residents on the Fire Aside platform. These reports identified priority defensible space and home hardening recommendations. Fire Aside's online platform made it easy to communicate and follow up with residents.

Use multiple communication streams to reach homeowners. NLTFPD and TVA sent postcards and emails to remind residents to review their reports and begin working through priority recommendations.



KEY LEARNINGS

Good Data In Means Good Data Out

To guarantee sufficient and accurate data inputs for modeling, DSIs need to be standardized. Make sure fire districts are collecting key data points, including defensible space and home hardening attributes.

Home Hardening Is Critical

The devastating fires in Los Angeles have drawn attention to the importance of home hardening. Ensure you are not just talking about defensible space when you are working on homeowner mitigations.

Home Inspections Can Seem Scary

Many residents are scared to have their homes inspected because they worry about the expense of the work they will need to do, and insurance companies potentially using the information against them. Ensure communities are informed about data privacy and how their information will be used. Take a kind approach.

It's Difficult To Get Homeowners To Open Their DSI Reports

The Pilot team had a goal of a 90% open rate by mid-July 2025. When that date came, only about 35% of the 228 homeowners had opened their reports. Consistent email outreach, educational campaigns, and door-to-door conversations about what the reports mean can help. By June 2026, after ongoing engagement from the Pilot team, 68.5% of residents had opened their reports.

Avoid Words Like "Violation"

People prefer to do this work through encouraging suggestions rather than strict compliance. Communicate the importance of the work to the safety of their neighbors, rather than attempting to drive action through fear.

Second Homeowner Challenge

It is more difficult to communicate with homeowners who do not primarily reside within a pilot neighborhood. Consider creative approaches to engage this hard-to-reach audience.

✓ STEP 6

NEIGHBORHOOD-SCALE DEFENSIBLE SPACE & HOME HARDENING MODELING

MODELING PHASE 2

Use technology to model neighborhood-wide home hardening and defensible space priorities.

Dr. Mahmoud integrated Vibrant Planet fuel modeling data, Fire Aside DSI data, and historic wind patterns into his AGNI-NAR model to calculate parcel relative vulnerability and transmissibility scores.

Use technology to identify the highest-priority homes.

Similar to disease modeling, the AGNI-NAR data highlighted the most vulnerable and “superspreader” residences. This allowed Pilot organizers to prioritize defensible space and home hardening work on those residences to increase the safety of the greater community.

KEY LEARNINGS

Determine Data Privacy Policies

To make the models most effective, you will likely share data across organizations. Think through privacy concerns, especially around the local fire district’s DSI data, and ensure non-disclosure agreements are in place to govern how data is protected.

Use “Superspreader” Modeling To Prioritize High-Value Investments

Modeling like Dr. Mahmoud’s is a powerful tool for determining how to allocate funding and resources across a neighborhood to achieve the greatest return on investment.



STEP 7

PRIORITY DEFENSIBLE SPACE & HOME HARDENING MITIGATION IMPLEMENTATION

Encourage residents to take action on their Fire Aside reports. Homeowners used their Fire Aside reports as a roadmap for action, completing priority home hardening and defensible space recommendations where they were able. The Fire Aside platform made it easy for NLTFPD to stay up to speed on residents' progress as they uploaded completed activities.

Bring in contractors who can do the work. The Pilot team partnered with contractors trained in defensible space and home hardening best practices whom residents could easily contact and hire.

Incentivize the neighborhood's highest-priority homes. The Tahoe Fund applied for and received a \$50,000 grant from the NV Energy Foundation for a Home Hardening Fund to provide financial incentives to help Tyrolian Village's highest-priority homes complete their highest-priority mitigations. These homes and mitigations were identified in Step 6 through AGNI-NAR modeling.

KEY LEARNINGS

Empathetic Communication Is Key

Residents are unlikely to react well to being told they're "superspreaders" or owners of the "most vulnerable" structures in the neighborhood. Use more positive language and ask a trusted community member or fire official to have that conversation in person.

Home Hardening Is Hard

Moving from recommendations to action is really hard! Doing so requires continual engagement with the community, including email correspondence, presentations at HOA meetings, and sometimes, knocking on doors. Provide a list of recommended contractors to help remove barriers to action.

We Need More Contractors

Host local trainings for contractors on defensible space and home hardening to ensure that specialists are available in your community.

Mitigations Can Be Expensive

Pursue grants or tap into HOA funds to help residents offset the costs of defensible space and home hardening work.

Educate Homeowners On General Home Hardening & Defensible Space Best Practices

Give homeowners easy-to-understand educational materials on the importance of home hardening and defensible space work. Existing resources that describe regional best practices can help homeowners become familiar with common mitigations, such as installing mesh screens and double-paned windows, implementing Zone 0, and removing firewood from underneath decks.

✓ STEP 8

POST-MITIGATION MODELING MODELING PHASE 3

Conduct a final round of modeling. Capture the impact of fuels reduction, home hardening, and defensible space mitigations, and generate a comprehensive risk reduction score. (Note: This is not yet complete in the Pilot.)

✓ STEP 9

INSURANCE COMPANY ENGAGEMENT

Invite insurance companies into the work. RockRose Risk was at the table from the start of the Pilot, and was able to use modeling from the Pilot to better inform insurers and re-insurers about true risk based on local mitigation efforts. Insurers provided critical insights into the intricacies of the market and how they use data and modeling tools to decide whether to write policies in communities at risk of wildfire.

✓ STEP 10

MAINTENANCE PLAN

It all grows back! Develop a long-term funding and maintenance plan to sustain wildfire resilience efforts.

KEY LEARNINGS

Create Before & After Visualizations

Use before-and-after images from the modeling process to illustrate risk reduction in a way that non-fire professionals can understand. Doing so can help homeowners better appreciate the value of the work they did, encourage additional work in the future, and contribute to an increased sense of safety.

Plan Field Visits

Organize field visits for insurance companies to come see the on-the-ground work being done to reduce wildfire risk to the community.



The Partnerships Don't End Here

The local fire district and community should work together to determine the timing and type of fuels reduction needed in the coming years to ensure the community remains wildfire resilient.

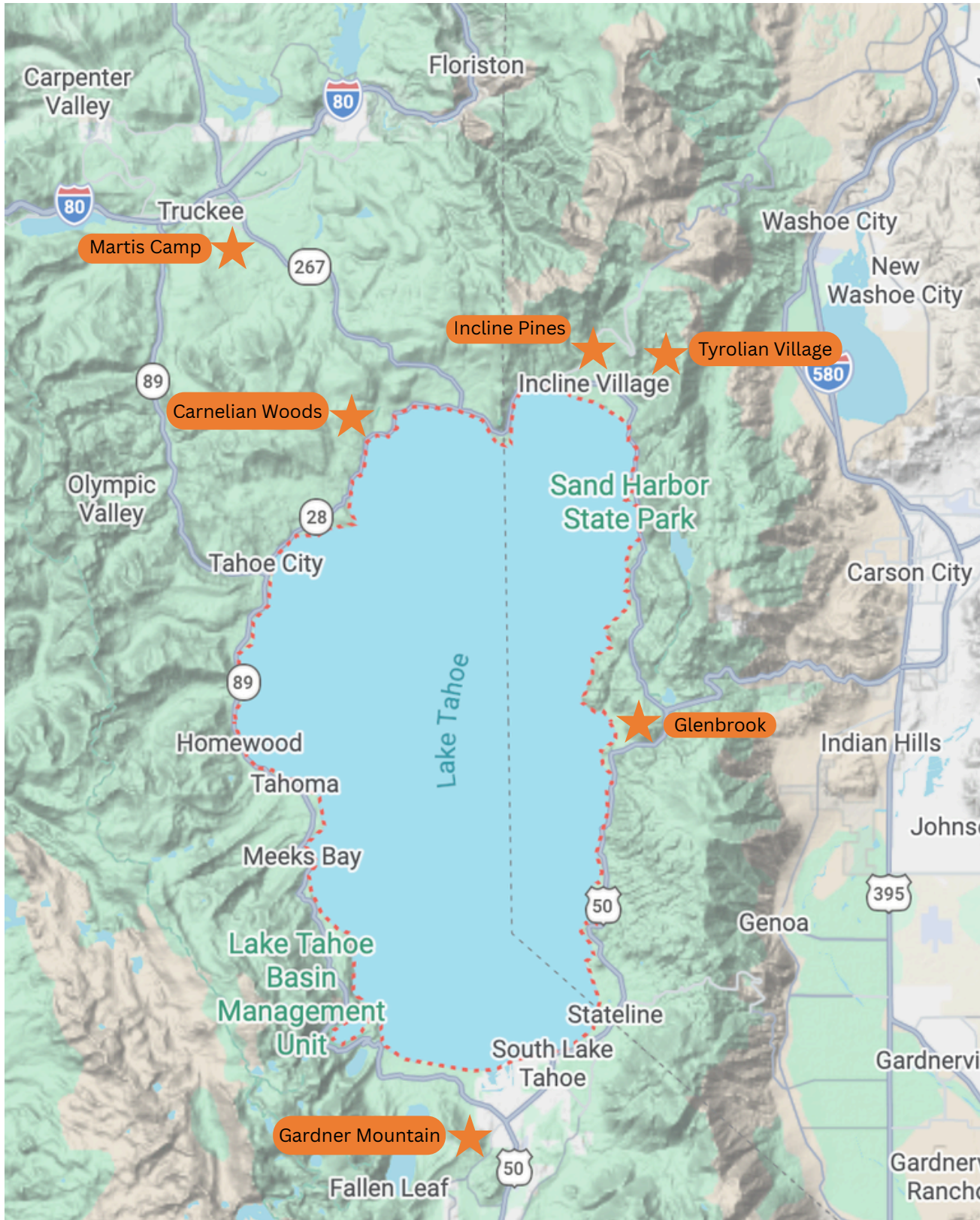
PILOT EXPANSION IN TAHOE

Interest in the Tyrolian Village Pilot led to five more pilots in the Tahoe-Truckee region. They showcase how this process can be used across a range of neighborhood types.

Pilots	Tyrolian Village	Incline Pines	Glenbrook	Gardner Mountain	Carnelian Woods	Martis Camp
Location	Incline Village, Nevada	Incline Village, Nevada	Glenbrook, Nevada	South Lake Tahoe, California	Carnelian Bay, California	Truckee, California
Fire District	North Lake Tahoe Fire Protection District	North Lake Tahoe Fire Protection District	Tahoe Douglas Fire Protection District	South Lake Tahoe Fire Department, Lake Valley Fire Protection District	North Tahoe Fire Protection District	Truckee Fire Protection District
Community Size	61 acres, 228 homes	15 acres, 41 homes	750 acres, 46 homes (within a 300-home community)	250 acres, 850 homes	88 acres, 118 homes	2,177 acres, 550 homes
Community Type	HOA owns common space up to 5 feet, not structures	HOA owns common space up to 5 feet, not structures	Private homeowners own property within an HOA community	Private homeowners, no HOA	HOA owns outdoor space up to the homes	Private homeowners own property within an HOA community
Fire Tech	Fire Aside, Vibrant Planet, Dr. Mahmoud's AGNI-NAR model, BurnBot	Fire Aside, Vibrant Planet, BurnBot	Fire Aside, Vibrant Planet, Xyloplan, Dr. Mahmoud's AGNI-NAR model, BurnBot	Fire Aside, Vibrant Planet, Xyloplan, Dr. Mahmoud's AGNI-NAR model, Opal AI	TBD	Fire Aside, Vibrant Planet, Xyloplan, Dr. Mahmoud's AGNI-NAR model, Burnbot, Technosylva

SIX TAHOE-TRUCKEE PILOTS

This map shows the locations of the six ongoing Fire Smart Community Pilots in the Tahoe-Truckee area

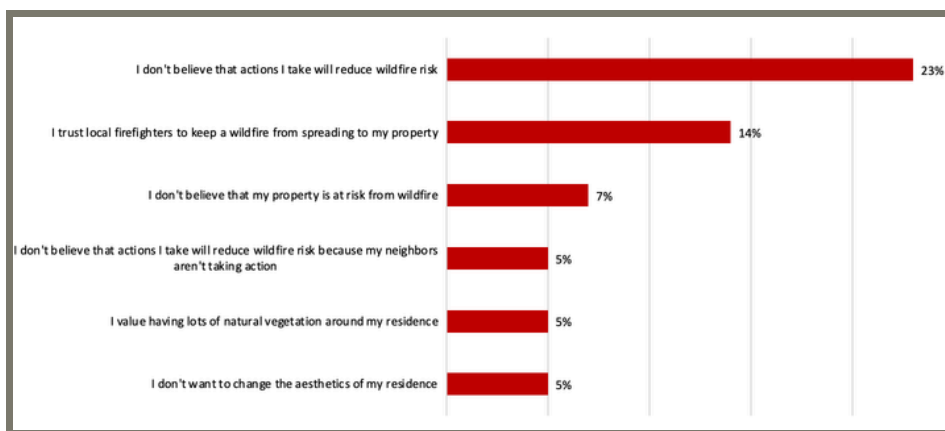


SURVEY LESSONS

Pilot organizers enlisted the help of a social scientist, Natalie Bennett, from the University of Colorado Boulder, to survey homeowners within four communities around Tahoe to understand how they perceive and prioritize wildfire risk and mitigations. Some of Natalie's key findings, as of October 2025, are below.

What are the barriers to action?

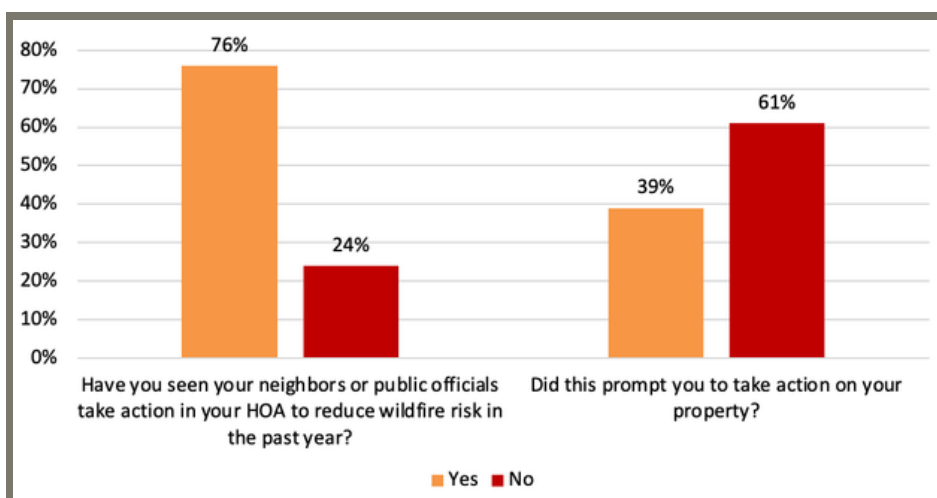
Overwhelmingly, the two most common barriers to action were 1) a belief that actions wouldn't be effective in reducing risk (23%) and 2) trust that local firefighters would keep a wildfire from spreading to my property (14%). This suggests that tailoring messaging to these communities that highlights the effectiveness of home hardening and defensible space actions could improve action. Further, highlighting that homeowners bear responsibility for keeping their property safe before a wildfire event could help combat this second barrier.



How does seeing action being taken around them influence homeowners' own actions and risk attitudes?

76% of homeowners said they have seen their neighbors or public officials take action in the HOA in the past year, and 39% said that this prompted them to take action themselves.

21% of homeowners said that seeing this action being taken around them made them feel less worried about wildfire risk to the community, while 67% of homeowners said that it did not change their risk attitudes.



These findings suggest that seeing action has a greater impact on a homeowner's behaviors than on their risk attitudes. This also points to the importance that just a few individuals taking action in a community can have to spur collective action.

BUILDING A FIRE-READY FUTURE, TOGETHER

The Fire Smart Community Pilots are demonstrating that when innovation meets collaboration, extraordinary progress, and speed of implementation are possible. By bringing together homeowners, fire districts, community organizations, researchers, and technology partners, the Pilots are showing that communities can take control of their wildfire risk, and in doing so, safeguard the lives, property, and natural beauty that make them so special. The Tyrolian Village Pilot is more than just a local success story; it is a new model for resilience that any community can follow.

To get in touch with a Fire Smart Community Pilot partner, please email community@tahoe fund.org.



Pilot organizers would like to extend tremendous thanks to Genny Biggs at the Gordon and Betty Moore Foundation for centering the vision for these Pilots around “mitigations that matter most” and for continuously encouraging us to take on this work. Your support made this possible.



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fire aside



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