



Office of the City Manager

August 25, 2023

To: Honorable Mayor and Members of the City Council
From: *LB* Dee Williams-Ridley, City Manager
Re: Wildfire Preparedness Update: Make Berkeley Fire Safe

Maui's recent deadly wildfires are a painful reminder of the growing risk to communities that may have once seemed safe from the threat of catastrophic wildfire. Berkeley has long known the dangers of wildfires and faced significant wildfires in [1905, 1923, 1946, 1970, and 1991](#). This history drives the community's and City's commitment to prepare. Amidst changing conditions driven by climate change and development, there is a growing threat of catastrophic wildfire in Berkeley that demands new approaches to manage risk.

While the tragic fires in Maui remain under investigation, this memo outlines high-level points of comparison between the Maui wildfires and the wildfire threats and challenges the City of Berkeley faces. It also describes City initiatives and outlines specific actions that must be undertaken by the community to reduce wildfire risk. Thanks largely to the passage of Measure FF, the Berkeley Fire Department (BFD) is moving quickly to implement a number of initiatives designed to partner with Berkeleyans to address the threat of wildfire.

Extreme Fire Weather

The winds in Maui were dry and strong – news reports indicate sustained winds of 30-40mph, with gusts of 85mph. In Berkeley this would be categorized as “[Extreme Fire Weather](#).” The BFD has introduced this designation for extremely windy and dry conditions, under which many catastrophic California wildfires have occurred. Under Extreme Fire Weather, fires spread at extraordinary speeds and [ember storms](#) can ignite spot fires far ahead of the main flame front. During this type of weather, some normally-available firefighting tools can be ineffective or even unusable - like planes and helicopters, which need to be grounded during high winds. During Extreme Fire Weather, when a fire builds to this magnitude and travels with such extreme speed and force, firefighters' primary focus often shifts from firefighting to supporting evacuations.

Maui is the most recent example demonstrating that under Extreme Fire Weather waiting to evacuate until after the fire starts may not provide enough time to escape, especially when roadways are under-sized for the evacuating population. We know that

if a significant wildfire starts during Extreme Fire Weather and threatens Berkeley, people in the Hills may not be able to evacuate as fast as a fire could spread. This is due to both the extraordinarily fast spread of a wind-driven wildfire, as well as the Berkeley Hills' density and narrow, winding roads. ***For this reason, it is not safe to be in the Berkeley Hills during Extreme Fire Weather, and the BFD recommends that people stay elsewhere.*** Sharing our professional recommendation with the community is essential for households to understand the elevated risks of remaining in the Hills during Extreme Fire Weather.

Strengthening community resistance to wildfire

With the passage of Measure FF in November of 2020, the BFD has catapulted forward with a vast number of policies, programs, and projects to improve the community's resistance to wildfire. The Department has been working in close collaboration with the Mayor, the City Council, the Disaster Fire & Safety Commission, other City of Berkeley departments, UC Berkeley, the Moraga-Oriinda and El Cerrito Kensington Fire Departments, the East Bay Regional Park District, the [Berkeley Fire Safe Council](#), Fire Safe Marin, Berkeley residents, and many other external stakeholders to move our efforts forward as quickly as possible.

Developing Strategies to Improve Evacuation Routes

Reports from Maui indicate that many people died fleeing in their vehicles or on foot on limited evacuation routes. Similarly, the narrow, winding roadways in the Berkeley Hills pose evacuation challenges. [Video](#) from the 1991 Oakland-Berkeley Hills Fire demonstrates how in Extreme Fire Weather, evacuating vehicles will get backed up and their occupants will need to choose between waiting in a line of cars or abandoning their vehicles and running for safety.

Many Berkeley residents and responders alike understand these challenges inherently. The Safe Passages program has been established to complete roadway treatments and vegetation management projects that will improve evacuation and emergency responder access to many areas. This can include refreshing red curbs, replacing worn signs, managing vegetation along evacuation routes, and upstaffing of parking enforcement during fire weather.

Using Measure FF funds, an engineering firm contracted by the City is currently conducting an analysis to scientifically predict exactly how long it will take to move people out of harm's way in various wildfire scenarios. This work will allow the City to better prioritize Safe Passages projects. To complete this analysis, we are gathering input from the Berkeley community using the [Community Evacuation Survey](#). This survey gathers critical information from our community about the human element of evacuation – when will people go? How many cars will they take? Who, and what, will they bring? When combined with the roadway analysis, it will help us to establish evacuation time estimates.

Maintaining and Expanding Emergency Alerting Systems

Reports indicate that prior to the wildfire in Maui, power and telecommunications were down in many areas. Like Maui, the City of Berkeley use phone-based alert and warning systems (AC Alert, Wireless Emergency Alerts) during an evacuation. If communications and electricity are down, the reach of these systems will be limited, as they were in Hawaii. The high winds accompanying Extreme Fire Weather generally lead to PG&E Public Safety Power Shutoffs for some Hills residents, and may result in unplanned power outages for others. These potential communication challenges are another reason the BFD has determined the Hills are unsafe during Extreme Fire Weather.

The City of Berkeley is currently completing a multi-year installation of an Outdoor Warning System, funded by Measure FF, to be used for whatever emergency might face our community. [The warning system's 15 locations will be distributed across the City](#), from the Marina to the Hills and across South and North Berkeley. They will be used in conjunction with other alerting systems to provide instructions to the community in the event of an emergency. Tied to the PG&E grid, the Outdoor Warning System also has a solar-powered battery backup and can be activated by landline, cell phone, computer or satellite. To date, 10 sirens have been installed and are now in the process of being configured; the remaining 5 are projected to be installed by the end of 2023. The first test of the system will occur during the [100th anniversary of the 1923 Berkeley fire](#).

Vegetation Management and Home Hardening

After most devastating wildfires, photographs surface of homes that are unscathed in a sea of destruction. The "[Red Roof House](#)" in Lahaina is the most recent example. This kind of miracle survival is actually predictable using two scientifically-proven approaches for which Berkeley Fire provides a wide array of support to help homeowners to implement: defensible space and home hardening.

- [Defensible Space](#) is the buffer you create between a building on your property and the grass, trees, shrubs, or any wildland (vegetated) areas surrounding the property, **with "Zone 0" (the area within 5 feet of the home) being the most critical.**
- **Up to 90% of home ignitions during a wildfire are from embers.** [Home hardening](#) is the process of upgrading or retrofitting some components of your home to increase resistance to ignition from ember storms, radiant heat, and direct flame.

Maui's natural landscape has been changed by sugar and pineapple plantations, which have increasingly been abandoned, leaving invasive grasses to take over. These grasses, dried by drought, provided abundant fuels to speed fire spread. Human intervention in the Berkeley Hills offers many parallels: The Hills are designated as a [Very High Fire Hazard Severity Zone](#), due in part to the naturally-occurring Diablo winds

and hillside topography. Development has intensified these natural hazards. The Berkeley hillside was largely undeveloped at the time of the 1923 Berkeley Fire ([written](#) or [video](#) information), which burned all the way to the Berkeley flats and only stopped when the winds changed. In 1923, the Berkeley Hills looked more like the Hills in the South Bay: grasses with occasional trees. When the Hills were developed, many trees were planted. Some of these trees are invasive and/or more flammable during a wildfire, like Italian Cypress, Eucalyptus, and Acacia. Over time, these trees have altered Berkeley's natural landscape and dramatically increased our Hills' fire fuels.

Now in 2023, the Hills are highly developed and density is increasing rapidly throughout Berkeley. With the passage of Measure FF, the BFD is managing a comprehensive suite of programs designed to work with residents to manage fire fuels and increase homes' fire resistance:

- **Personalized reports for Defensible Space and Home Hardening:** Annually the BFD provides each parcel in the Very High Fire Hazard Severity Zone with an inspection report that includes a Corrections Checklist. This customized, comprehensive guide for each property includes specific images of hazards on their property and a Corrections Checklist (see a sample report [here](#)). With Measure FF funding, this program now covers over 8,500 properties – an increase of over 7,200 properties and covers virtually all of the Berkeley Hillside. These reports assess compliance with fire code requirements for vegetation management and best practice recommendations for home hardening. When residents take-action to complete these requirements; vegetation and structures on the parcel will be less likely to ignite during a wildfire, and enough [defensible space](#) will be available for firefighters to protect structures during a wildfire.
- **Wildland Urban Interface Division:** Using Measure FF funds, a new Division within the Fire Department was established that is wholly dedicated to improving the community's understanding of, and resistance to wildfire.
- **Community Wildfire Protection Plan (CWPP):** The CWPP is a strategic plan typically developed collaboratively by a local fire department, federal and state land managers, local governments, and communities. On [May 16, 2023](#), the City Council adopted the [City of Berkeley's first CWPP](#), providing a roadmap to help the City and community work together to mitigate wildfire risks. The CWPP establishes goals for improving wildfire response, community preparedness, fuel management, creating infrastructure, ignition reduction, and home hardening.
- **Fire Safe Berkeley Website:** We have created a curated website with a variety of key information to guide residents through the home hardening and vegetation management process: [berkeleyfiresafe.org](#).
- **Chipper Program Expansion:** [Berkeley Chipper Day](#) is a seasonal program provides for the curbside pickup, chipping, and disposal of vegetation from

residential properties. This program replaces the City's prior chipping service, offered only to select properties in the Hills. The expanded Chipper Program is Citywide, runs longer (from mid-April and thru September), and offers pick-ups as needed through an online reservation program, and a professional contracted tree service to perform the chipping work.

- **CAL FIRE Risk Reduction Grant:** The City partnered with the East Bay Regional Parks, East Bay Municipal Utility District, and UC Berkeley to obtain a grant award for \$2.8 million dollars to perform Phase I of a vegetation management project along Grizzly Peak and adjacent key evacuation routes in the region. This project will begin in 2024 and run through 2026.
- **FireWise Neighborhood Program:** The [Firewise USA®](#) Program encourages local solutions for safety by involving homeowners in taking individual responsibility for preparing their homes from the risk of wildfire. The program provides resources to help homeowners learn how to adapt to living with wildfire and encourages neighbors to work together to act now to prevent losses. Berkeley has brought back a retired Assistant Fire Chief to support neighbors that are interested in becoming FireWise. Since 2021, five Berkeley neighborhood groups have received the FireWise recognition: Acacia Neighborhood, BFN (Boynton-Florida Neighborhood), Fairlawn, Park Hills HOA, and San Diego-Indian Rock. Six more neighborhood groups are in the process of becoming recognized as a Firewise Community. E-mail firewise@berkeleyca.gov for more information.
- **Alternate Water Delivery Systems:** In the event that a wildfire begins and the regional water delivery network is compromised, the City of Berkeley has invested in an above ground water supply system that can pump water from the Bay to other locations in the city through miles of large diameter hose. The Department also purchased a 3,000-gallon water tender that can transport water to adjacent areas without adequate water supply to make initial fire attacks on wildfires.
- **Wildland Firefighting Vehicle Acquisition:** During a wildfire, getting personnel, equipment and water to a fire quickly can be critical. Historically, the Department has had a primarily urban firefighting fleet of vehicles. That has been substantially altered over the past decade. Starting in 2010, the Department received a grant from FEMA to purchase its first wildland fire engine and has now acquired two additional wildland firefighting engines, two all-terrain vehicles, a 3,000-gallon water tender and several off-road command vehicles.

What should residents be doing to prepare for wildfire?

1. If you live in the Berkeley Hills:
 - a. Create [defensible space](#) according to your BFD annual inspection report. **Implement [Zone 0](#) guidelines, which are currently voluntary but are scientifically proven to be the most effective at preventing home ignition during a wildfire.**
 - b. Begin to [harden your home against wildfire](#). There are 40 different steps you can take to help protect your home, some of them are simple and inexpensive. **Start with [installing metal screens over your gutters and on any vent that leads to a crawlspace, attic or other interior space.](#)**
2. Sign up your mobile phones and email for [AC Alert](#). Emergency officials will use AC Alert to notify you of Extreme Fire Weather and to send targeted alerts for evacuations.
3. Bookmark and get comfortable with the [Berkeley Emergency Map](#) (formerly Zonehaven). Responders will use this online tool to share evacuation updates and other emergency instructions.
4. Make your [fire weather plan](#). Use our [fire weather planning toolkit](#) to help decide when you will leave the Hills, where you will stay when you leave, and what routes you will take.
5. Be ready to evacuate. Wildfires may occur even without Extreme Fire Weather. Berkeley residents, and Hills residents especially, should always be ready to evacuate rapidly if needed. Our [wildfire evacuation checklist](#) offers instructions.
6. Complete the [Community Evacuation Survey](#) to help the City gather critical information about the human element of evacuations in Berkeley. When combined with an engineering analysis of Berkeley's roadways and capacities, this survey will help us to establish evacuation time estimates, which will improve our evacuation strategies.

Call to Action

“The Fire Department’s goal is to evolve Berkeley to become a wildfire safe community. With funding support from taxpayers, and in partnership with many stakeholders, the BFD is creating historical opportunities to build resistance to wildfire. We urge the community to learn about and take advantage of these opportunities. Preparing your family, home and property for wildfire will benefit you, your neighbors and the city. **As we’ve witnessed on so many occasions around the world, most recently in Lahaina, Hawaii, we cannot afford to wait.** Please join the campaign to make [Berkeley Fire Safe!](#)” - [David Sprague, Berkeley Fire Chief](#)

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Re: Wildfire Preparedness Update: Make Berkeley Fire Safe

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