

## Wildfire Prevention Working Group

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**From:** Marilyn Leimomi Khan <leimomikhan@gmail.com>  
**Sent:** Thursday, November 2, 2023 5:05 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Hearing WFPWG 11-17-23

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Aloha, Chair Ichiyama and VC Kila

Reviewed the Wildfire Prevention Working Group Report. It is very comprehensive. I found the maps of all of the islands most interesting. I live on O'ahu and did not realize how vulnerable we are to fires. Almost every part of the island is affected. The recommendations made are very comprehensive, but overwhelming. The challenge for state legislators will be to find the resources to allocate to implement the recommendations. **The report does not contain estimated costs for implementing the recommendations**, but does note that

- Hawaii spends less than other states on wildfire prevention and response, budgeting an annual average of \$3.2 million over the past decade; about \$2 per resident. In contrast, Washington state budgets, on a per capita basis, more than double the funding than Hawaii does for fighting wildfires, appropriating an average of \$83 million between 2015 and 2019. California set aside \$21 per resident in fiscal year 2022 — \$843 million. Oregon pays about 35 cents more per resident than Hawaii to fight wildfire but has also invested hundreds of millions into an emergency fund.<sup>18</sup>

Bottomline: Mahalo for the good job done by the working group. I am hopeful that you will find the resources to implement your recommendations, otherwise, the recommendations may be just another study filed away in someone's cabinet.

Respectively,

Leimomi Khan

## **Wildfire Prevention Working Group – Testimony/Recommendations**

Submitted by John Kikuyama ([jkikuyama@gmail.com](mailto:jkikuyama@gmail.com))

808-281-0770

My name is John Kikuyama. I am a retired Chief Master Sergeant that served 35 years in the military. I was born and raised in Lahaina. My grandparent's home was destroyed in the recent Lahaina fire. My best friend also lost his home and another friend lost his cousin. When the dust settles, I'll probably know dozens if not hundreds of people that lost their homes, jobs and trust that the government will do everything possible to prevent future wildfires.

During the later half of my military career, I served as an inspector for the Pacific Air Forces (PACAF) and Air Force Space Command (AFSPC) Inspector Generals (IG). All our IG inspections were compliance based so I knew the basis were the written/published regulations. I believe when we translate that to the civilian world, the basis for compliance would be the published laws/statutes.

The following are my recommendations to prevent future loss of life and property due to wildfires:

### **Initiate a State of Emergency (State and County level):**

- Initiate a State of Emergency declaring dry invasive grass (Guinea and Buffel) and abandoned sugarcane wildfire fuel thus, a safety hazard and source of imminent danger.
- This declaration could go a long way in cutting through the "red tape" in addressing these hazards.
- Continuously extend the State of Emergency indefinitely until the wildfire fuel issue has been properly managed.

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0127A/HRS\\_0127A-0014.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0127A/HRS_0127A-0014.htm)

### **Update the Noxious Weed List:**

- Update the List of "Plant Species Designated as Noxious Weeds for Eradication or Control Purposes" to include Guinea Grass and Buffel Grass.
- Expedite the process by tying it to the State of Emergency.

<https://casetext.com/regulation/hawaii-administrative-rules/title-4-department-of-agriculture/subtitle-6-department-of-agriculture/chapter-68-noxious-weed-rules/list-of-plant-species-designated-as-noxious-weeds-for-eradication-or-control-purposes-by-the-hawaii-department-of-agriculture>

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0152/HRS\\_0152-0004.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0152/HRS_0152-0004.htm)

### **Amend Hawaii Revised Statute (HRS) Chapter 132 to Identify a Fire Hazard Free Space:**

- Identify a fire hazard free space when communities are adjacent to wildland areas.
- This fire hazard free space would more than likely be within a large landowner's property.

- Utilize wildfire experts and Fire Chiefs to determine what the appropriate space/distance should be.
- Expedite the process by tying it to the State of Emergency.

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0132/HRS\\_0132-.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0132/HRS_0132-.htm)

**Amend (HRS) Chapter 132 to Identify Wildfire Fuel as a Fire Hazard:**

- Identify wildfire fuel, specifically dried Guinea Grass, dried Buffel Grass and abandoned sugar cane as a “Fire Hazard”.
- Expedite the process by tying it to the State of Emergency.

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0132/HRS\\_0132-.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0132/HRS_0132-.htm)

**Amend HRS Chapter 132 Section 7:**

- Amend section 7 from “as the case may be, at the expense of the owner or occupant” to “as the case shall be, at the expense of the owner or occupant”
- This change should hold landowners more accountable for removing fire hazards.
- Expedite the process by tying it to the State of Emergency.

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0132/HRS\\_0132-0007.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0132/HRS_0132-0007.htm)

**Amend (HRS) Chapter 132 to Restrict Outdoor Fire Ignition Sources During Red Flag Conditions with High Winds:**

- This initiative will more than likely get a lot of push back but this falls in-line with doing everything possible to prevent wildfires.
- Utilize wildfire experts and Fire Chiefs to determine which ignition sources should be restricted. Some possible examples are outdoor barbeques, parking vehicles on dried grass, and launching aerial fireworks.
- Expedite the process by tying it to the State of Emergency.

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0132/HRS\\_0132-.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0132/HRS_0132-.htm)

**Increase Funding to Support Removal of Fire Hazards:**

- This would allow funding to contract and remove fire hazards from land owner’s property.
- Expedite the process by tying it to the State of Emergency.

<https://www.civilbeat.org/2023/08/hawaii-has-long-shortchanged-wildfire-protection-we-could-have-saved-lives/>

**Increase County Funding to Hire Additional Fire Department Employees:**

- Additional employees would perform property inspections for fire hazards as well as track the removal of the identified fire hazards.
- Expedite the process by tying it to the State of Emergency.

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0132/HRS\\_0132-0006.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0132/HRS_0132-0006.htm)

## Secondary Plan

### Utilize Eminent Domain:

- Utilize Eminent Domain to take (seize) wildland property adjacent to wildfire vulnerable residential communities.
- Utilize the National Weather Service Wildland Fire Maps and Drought Monitor Maps to determine the most wildfire vulnerable areas in Hawaii.
- Expedite the process by tying it to the State of Emergency.

[https://www.capitol.hawaii.gov/hrscurrent/Vol02\\_Ch0046-0115/HRS0101/HRS\\_0101-0002.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol02_Ch0046-0115/HRS0101/HRS_0101-0002.htm)

### Build Public Green Breaks on Seized Property:

- Green Breaks can drastically reduce fire risks.
- Example of Green Breaks are parks, practice fields, and driving ranges.
- Strive for lower maintenance Green Breaks.
- Utilize wildfire experts and Fire Chiefs to determine the size of these Green Breaks.
- Lobby for Federal Funds to build the Green Breaks.
- Expedite the process by tying it to the State of Emergency.

<https://www.mauicounty.gov/DocumentCenter/View/129491/Report-on-Wildfire-Prevention--Cost-Recovery-on-Maui---Part-4-Exhibit-D-25-MB>

### Utilize Recycled Water to Irrigate the Green Breaks:

- West Maui and South Maui are the two most wildfire vulnerable areas on the island.
- West Maui and South Maui are also the two areas most prone to drought on the island.
- West Maui and South Maui also have waste water treatment plants that inject millions of gallons of treated water each day into the water table.
- Recycled water can be used for fire protection and landscape irrigation.
- Lobby for Federal Funds to build pipelines from Wastewater Treatment plants and irrigation systems.
- Consider installing fire hydrants that use the same treated water on or around the Green Breaks.
- Expedite the process by tying it to the State of Emergency.

[https://files.hawaii.gov/dbedt/erp/Doc\\_Library/2021-06-23-MA-FEA-West-Maui-Recycled-Water-System.pdf](https://files.hawaii.gov/dbedt/erp/Doc_Library/2021-06-23-MA-FEA-West-Maui-Recycled-Water-System.pdf)

<https://scadata.net/can-recycled-water-used/#:~:text=Fire%20protection%3A%20Containing%20a%20fire,clean%20water%20for%20drinking%20purposes.>

## Wildfire Prevention Working Group

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**From:** Andrew Beavers <beavers\_andrew@hotmail.com>  
**Sent:** Tuesday, November 7, 2023 10:18 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** Public Testimony - Wildfire Prevention Working Group Draft Report

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Name: Andrew Beavers  
Working Group: Wildfire Prevention Working Group

The below is testimony regarding the Wildfire Prevention Working Group Draft Report dated November 1, 2023. My name is Andrew Beavers. I am a wildland fire expert from Colorado who has written dozens of fire management plans, carried out extensive wildfire risk analysis, and has worked extensively in Hawaii, including living in the state while working in wildland fire for the U.S. Army Garrison, HI from 1999-2001. My work has focused on helping DOD with their fire issues, but that work in Hawaii has frequently included interactions and analysis of the Hawaiian wildfire problem as a whole. I offer the below as simply a concerned citizen, these opinions do not reflect any official stance of my employer or of the DOD.

- Findings #1 - This is almost entirely focused on acreages and natural resources, despite a graphic depicting communities at risk. I suggest including the threat to homes and lives. While the Lahaina fire was very unusual, it brought to the fore the fact that wildfire in Hawaii routinely impacts people's lives, including burning their property.
- Findings #2 - Suggest the title be changed to "Drivers of Wildfire Activity" or similar. "Causes" usually refers to what started fires but there is discussion of fuels and climate as well.
- Findings #2 - Suggest the first bullet get right to the point, edit to say "99% of wildfires are caused by humans". State it simply and factually.
- Findings #2, 3<sup>rd</sup> bullet - suggest adding a sentence stating "Fire activity in Hawaii is directly related to declines in agricultural land use as the fallow agricultural lands are quickly colonized by invasive grasses", then adding a reference to the graphic below addressing this topic.
- 
- Findings #2, 4<sup>th</sup> bullet - Suggest this not be limited to native forests. The wildfire problem in Hawaii is, very much, an ecological problem. But it is also a problem for protection of property and life. Suggest editing the second sentence to say "Each time a fire burns, it provides opportunity for non-native grasses to invade and/or increase their dominance" or similar.
- Findings #3 - Suggest adding a bullet, or adding to the last bullet, about lack of wildland fire equipment and training for County Fire Departments. Firefighters are often fighting wildfires in bunker gear (hot, heavy) using structural engines with little off-pavement mobility. Lack of training is a serious safety issue and also leads to poor incident decisions that can (and do) lead to much larger and longer wildfire incidents.
- Findings #3 - Suggest adding a bullet regarding lack of fixed-wing firefighting aircraft. None exist in the state and it is too far to fly them from the mainland. While it is unlikely rectifying that is feasible as it is very expensive, it is a resource that can make a difference and is currently unavailable.

- Findings #3 - Perhaps too sensitive an issue right now, but suggest adding a bullet regarding aging electrical infrastructure as a major source of wildfires. The greatest density of electrical infrastructure, and therefore the greatest density of wildfire ignitions, is within and immediately adjacent to populated areas. This means fires are most likely to ignite within and near communities, giving firefighters little time to respond and threatening communities in dry areas. Electrical failures are also most likely during high winds, which is also when fires spread with the greatest speed and intensity.
- Findings #3, 6<sup>th</sup> bullet - Suggest clarifying why the Intrastate MAA was not able to be used. On the surface, it seems like the entire purpose of that act is to allow exactly that. This bullet is currently unclear.
- Recommendations #1, 5<sup>th</sup> bullet - Just a note that, depending on the voltage of the line, this can be incredibly expensive. Transmission lines produce a lot of heat which has to be mitigated, essentially requiring HVAC for your underground line.
- Recommendations #1, last bullet - While I would love to see native plants used as much as possible, I would suggest not limiting this to "native" species. To get the most wildfire mitigation benefit, planting non-native (though non-invasive) species is likely more cost effective, allowing more acres to be treated. Native species would be necessary in areas that are still largely ecologically intact, of course, but restoring a watershed can mean many things, including simply water management.
- Recommendations #2 - Suggest adding or modifying existing bullet language to incentivize, or possibly require by statute, that land owners of field crop acreages create fuelbreaks and/or firebreaks around the perimeters of their property. This would provide increased ability to contain wildfires by compartmentalizing the agricultural landscape.
- Recommendations #2 - Suggest adding incentivizing communities to implement their CWPPs.
- Recommendations #2 - Suggest consideration of a bullet incentivizing or directly supporting the creation of a prescribed burn program that is staffed and equipped by State DLNR personnel and used to burn easy to burn acreages (flat, good containment, etc.) of both public and private lands in strategic locations to reduce fuels primarily on fallow ag lands. Targeted burns to protect communities would be a priority. Related - pass legislation protecting properly certified Burn Bosses who carry out properly planned and implemented burns from personal liability. See similar statutes in Florida and other states. Prescribed fire is the least expensive way to treat large acreages and while it will not remove invasive grasses, it will reduce their fuel loads for a year or more, depending on rainfall.
- Recommendations #4, 5<sup>th</sup> bullet - While it's conceivable some customization of recommendations would be necessary for Hawaii, this information already exists. E.g., <https://cowildfire.org/home-hardening/> and <https://firesafemarin.org/harden-your-home/#gsc.tab=0>.
- Recommendations #5, 1<sup>st</sup> bullet - It's not clear to me why this would call out state personnel. The initial attack on wildfires, which is when fires are most likely to be contained before they become major fires, is carried out by the County Fire Departments. My opinion is basic level wildland firefighting training as well as improved equipment is necessary for County Fire Stations in locations where wildfire response is frequent. Suggest this bullet be reworded to "Increase response capacity by improving firefighter qualifications and equipment".
- Recommendations #5 - suggest improving command and control during wildfire incidents by ensuring through statute or otherwise that the individual with the highest National Wildland Coordinating Group certifications is the incident commander. Currently, the incident commander is the ranking officer of the fire department, which often leads to someone with little or no wildfire experience making the decisions. This leads to poor decision making.
- Recommendations #7, 3<sup>rd</sup> bullet - suggest removing the term "native". While native species would certainly be appropriate in currently native locales, green firebreaks would most likely be implemented within already invaded areas. Native species do not compete well with invasives (which is why they are being extirpated) and any green firebreak of any size would need to be largely maintenance-free to be

viable. You need species that, once established, can compete with the invasive grasses and that almost certainly means non-native species. The goal should be wildfire mitigation, not ecosystem restoration. The latter will likely fail and result in additional ecosystem losses.

- Throughout - Maybe too down in the weeds at this stage, but, while improved building standards will help, suggest that any requirement for improved wildfire mitigation in building standards be targeted at buildings that are not in urban areas and are not exposed directly to wildland fuels, rather than apply to all buildings everywhere. Refinement necessary, but the latter will unnecessarily increase building costs for all buildings, including those in fully urban areas that are not reasonably at risk from wildfire, in a state with notoriously high building costs.

I vigorously applaud the establishment of a State Wildfire Prevention Working Group and all the work you're doing. It is long overdue. Thank you for the opportunity to comment.

Andy

## Wildfire Prevention Working Group

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**From:** Beth de Young 2 <bethdeyoung@gmail.com>  
**Sent:** Tuesday, November 7, 2023 11:41 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** Testimony on Wildfire Management

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Elizabeth deYoung - 401 wainaku street, Hilo, Hawaii

Hawaii county low density zoning has resulted in Agricultural land that is not being actively farmed or maintained. The result is that private lands are becoming covered by Guinea grass and other invasive combustible vegetation that presents risks to adjacent properties. In former plantation neighborhoods there are many examples of close proximity to high risk land. These dense, primarily wooden homes are vulnerable, even in Hilo/Hamakua during dry times.

Landowners not actively farming or partially farming need to have guidelines or regulations for minimizing threats to neighboring properties and areas. Areas with mowed grass or pastures propose less risk than agricultural lands overgrown. At a minimum firebreaks or other safety measures need to be encouraged or imposed.

mahalo for your consideration



## Wildfire Prevention Working Group

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**From:** Thomas P English <tom@iprf.com>  
**Sent:** Tuesday, November 7, 2023 1:39 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** PUBLIC TESTIMONY -- WILDFIRE PREVENTION WORKING GROUP DRAFT REPORT  
NOVEMBER 1, 2023

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I believe the work this task force has done to identify the shortcomings are simply stated as: "Hawaii spends less than other states on wildfire prevention and response." Without the commitment of government to finance these issues, future catastrophes are inevitable. We need to recognize this problem will not go away without Government Money and boots on the ground!

Tom Englis526 Kai Hele Ku St La  
708-609-4155

## Wildfire Prevention Working Group

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**From:** erin peyton <flora3fauna@yahoo.com>  
**Sent:** Tuesday, November 7, 2023 4:47 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** WILDFIRE PREVENTION WORKING GROUP - Draft Comments

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Aloha,

I live on the island of Molokai and have been working with HWMO since 2019. I have a few considerations for the draft. Thank you for taking the time to create a working plan.

Please consider funding for testing fire hydrants and repairs for both public but private sectors.

Please consider having a statewide color code for hydrants such as the NFPA Hydrant Color Code along with instructions to private land owners to provide a list of non-operable hydrants to the local fire department:

Color	GPM	Flow Information
Blue	1,500 GPM or more	Very good flows
Green	1,000 to 1,499 GPM	Good for residential areas
Orange	500 to 999 GPM	Marginally adequate
Red	Below 500 GPM	Inadequate

There is also a need for hazardous waste removal and green waste removal for homesteaders as well as other residents. A staging area is not workable as many individuals do not have the means to transport the green waste to a chipping station.

Thank you for all you do,

Erin Peyton  
Resident of Molokai  
Paniolo Hale Firewise USA, Lead  
HWMO Community Wildfire Ambassador

## Wildfire Prevention Working Group

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**From:** Mark Gordon <mark.gordon333@gmail.com>  
**Sent:** Tuesday, November 7, 2023 9:56 PM  
**To:** Wildfire Prevention Working Group  
**Cc:** Rep. David A. Tarnas; Sen. Tim Richards; Margarete Olson  
**Subject:** Comments on WFPWG Draft Report

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Thank you for the opportunity to comment on the Subject draft report. Overall I believe the major issues are covered.

The following are suggested revisions:

Under Recommendations, Section 1, Reducing Ignitions - add the following bullet:

- **Ensure hot work permits are initiated and requirements followed by public and private property owners**

Under Recommendations, Section 2, Reducing Fuel Loads add the following (note the info added is in Bold):

**Adopt New County and State Regulations** to promote the creation and maintenance of “defensible space” by both public and private property owners, with **Fines and other** legal consequences for violations. **In addition, ensure that there are adequate resources to enforce these regulatory requirements.**

Thank you for this opportunity to comment.

Mark S. Gordon  
Waikoloa, HI.

## Wildfire Prevention Working Group

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**From:** outlook\_9C5DC09119FC31FF@outlook.com  
**Sent:** Wednesday, November 8, 2023 10:51 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** Public Testimony

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Hello Wildfire Prevention Working Group,

These are my comments on wildfire prevention as a homeowner on the Hamakua coast.

- 1) Many people balked when these huge tracks of eucalyptus trees were planted on the Hamakua coast because they could've been planted in native forests species which would have increased water retention in the soil, increased the water supply in the area, increased the humidity level of the area. Instead the eucalyptus was planted which has a high oil content & along with the eucalyptus came an explosion of guinea grass - two extremely flammable plants. We were promised at the onset of the idea of the eucalyptus plantations that these trees would all be harvested within so many years and the area monitored for sprouts from the original trunks – to be removed so there would be no regrowth. This has not been done at all and there remains large tracks of harvestable trees with incredible amounts of guinea grass underneath. Nothing like providing quality fuel for a fire! **I say begin the process of removing these eucalyptus trees and replanting with native species.**
- 2) I live in one of these neighborhoods with one road in and the same road out. **There are old cane roads that can be opened up to allow for evacuation travel.** This should be done right away. There was a fire here two years ago and it was very scary watching the flames from my lanai knowing that if it jumped the road we would have to drive through it to evacuate.
- 3) **All landowners with untended properties should be urged to use cattle grazing to keep the guinea grass from reaching heights of 6-8 ft, where it cannot be mowed.** Perhaps a ranchers collective that could supply the cattle to graze for property owners that need this service.

Thank you for listening and I hope with everyone's ideas and comments some necessary actions can be taken to make it safer during the dry fire season

Sincerely,  
Karen Maclsaac.

Sent from [Mail](#) for Windows

## Wildfire Prevention Working Group

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**From:** MichaelLawrence DesignStudio <michaellawrencedesignstudio@gmail.com>  
**Sent:** Wednesday, November 8, 2023 6:23 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Public Testimony - RE: House of Representatives Wildfire Prevention Working Group Draft Report

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Aloha,

My name is Wilbert-Michael Lawrence and I am a Licensed Architect in the state of Hawaii. My hope is to provide feedback to the Wildfire Prevention Working Group's Draft Report.

First, I would like to thank the Wildfire Prevention Working Group for a great job on producing information that could help the community at large. Also, thank you for inviting comments on the report. My comments are as follows.

1. Who can the communities specifically reach out to for guidance on how to apply the anticipated codes and mandated requirements to their homes and businesses? Is it the building department, fire department, state entities or design professionals (ie. Architects & Engineers)? Design professionals are not mentioned as a resource anywhere in the report. As an Architect licensed in Hawaii and other states that specializes in helping communities mitigate the effects of natural & man-made disasters, especially fires, it would be only natural for me as an Architect to assist communities with this. However, if the communities are not made aware of all the resources available to them, we might be inadvertently relying on old methods of building design & construction.

2. Understandably, we would like to reduce fuel loads by creating defensible spaces around buildings. This makes sense. However, will there be a plant list available for both residential and commercial properties of water-rich fire resistive native species that could be planted to help mitigate the effects of wildfire? Who would then help a homeowner or business owner decipher which plants are needed? Is it the building department, fire department, state entities or design professionals (ie. Architects, Landscape Architects & Engineers)?

3. Are Architects being invited to be a part of the planning & infrastructure improvement efforts to help create a plan to build back more resilient communities? This is a part of the practice of Architecture and having additional perspectives could prove beneficial.

4. Are Architects being invited to assist with your emergency management efforts? Some Architects include the different phases of emergency management as a part of their practice of Architecture. Having additional perspectives could prove beneficial in developing emergency management documents and procedures.

5. Could exterior fire suppression systems be an additional means of helping with limiting the spread and effect of a wildfire on a home or other type of building? This coupled with defensible space, carefully chosen plant species, proper building siting, well-chosen building materials, etc. creates a good defense against wildfires.

Mahalo for taking the time to review my comments. Addressing these comments and incorporating them into the report could help deliver a holistic approach to the challenges we are all facing with disasters. Having all resources available to the public will strengthen the overall commitment for a more resilient Hawaii.

Best Regards,

Michael Lawrence, AIA, CFSP, CFPM, Fe3, FPS, NFSA, BSE | Principal Architect & Chef

ML Design Studio LLC

Food Space Architecture + Design

Phone: 860.707.2785

Sent from Mobile Device

## Wildfire Prevention Working Group

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**From:** Iria- Carmen <iriacarmen808@gmail.com>  
**Sent:** Wednesday, November 8, 2023 10:00 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Public Testimony

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From: Carmen H, resident of Waikoloa since 1987

Feedback on preventative measure for fire mitigation:

According to Eric Moller (Deputy Fire Chief, Hawai'i County Fire Department) at the October 10, 2023 Waikoloa Firewise "Talk Story Event" he is quoted saying, "In Waikōloa, we go from wildland to urban with no transitional phase. This means that there is no ability for a "cool off" separation between the wildland and the structures. This is why it's critically important to maintain the vegetation around these areas to make sure that there is a potential for HFD to put out the fire BEFORE it enters the village."

(Source: <https://www.waikoloa.org/fire/> and click on "Waikoloa Wildfire Talk Story.").

THE HFD DEPUTY FIRE CHIEF'S EXACT WORDS. PLEASE LISTEN TO HFD. THEY ARE THE EXPERTS IN ANY AND ALL FIRE MITIGATION

It's very clear that fire/fuel breaks need to be created ASAP around the perimeter of Waikoloa- prioritizing the northeast direction (due to trade winds).

## Wildfire Prevention Working Group

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**From:** Elliott Parsons <parsons.elliott@gmail.com>  
**Sent:** Friday, November 10, 2023 2:31 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Public Testimony: WFPWG Draft Report Nov. 1, 2023 (submitted prior to Nov. 17 public meeting)

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11/10/23

Dear Co-Chairs, Representative Ichiyama and Representative Kila, and the Wildfire Prevention Working Group Committee:

Thank you for the opportunity to provide written public testimony on the Wildfire Prevention Working Group Draft Report, November 1, 2023, prior to the scheduled public meeting on Friday, November 17, 2023, at 10:00 am HST.

My name is Elliott Parsons and I am a resident of Kailua Kona. I have lived and worked in leeward Hawai'i Island for many years and I have witnessed many wildfires and their impacts on public lands in North Kona and South Kohala.

I would like to provide my strong support for the "Wildfire Prevention Working Group Draft Report, November 1, 2023". I agree with the report's conclusion that Hawai'i is facing a growing wildfire crisis that needs to be addressed and I commend the authors on drafting a detailed and timely report that includes important facts, statistics, and maps demonstrating the risk to communities, and most importantly, recommendations for reducing ignitions, reducing fuel loads, engaging with the community, protecting communities, suppressing wildfire, and post-fire response and research needs. These recommendations, if followed, will lower wildfire risk for both people and ecosystems in Hawai'i, and greatly increase the capacity for response. I wanted to offer a few ideas for your consideration to include in the final report.

First, climate change is mentioned in the summary, and in the last bullet point of the Causes of Wildfires in Hawai'i section (e.g., mentioning the warming, drying climate, El Niño events, and drought). However, I think a lot of important details are left out on this very important topic, and that the committee could consider including a whole section on climate change to call attention to this issue. There is a lot of great research that examines long-term declines in rainfall in the state, especially in dry leeward areas (a loss of 9 inches in some areas over the last few decades), an increase in drought frequency and severity in Hawai'i over the last 100 years, and an expected increase in the severity of tropical storms, which could exacerbate wildfire risk through lowered humidity and increased wind speeds. Calling more attention to climate change can help the public become more aware of the urgency of these issues and also underscores one of the important reasons for the increasing risk of wildfire.

Second, I did not see a mention of the word biosecurity in the draft report, and specifically a mention of the need to prevent new non-native flammable plant species from entering the state through increased monitoring of ports, quarantine, and early detection-rapid response (EDRR) efforts. The four grass species mentioned in the report, Guinea grass, fountain grass, molasses grass, and buffelgrass are already widely established, but new species, some of which are also hazardous to public safety and health, are arriving constantly due to gaps in biosecurity. An article by Dr. Kelsey Brock and Dr. Curt Daehler published in 2021 found that 10 new non-native plant species become established and spread in Hawai'i every year on average, and new arrivals have the potential to increase fire fuel loads and exacerbate wildfire problems. To illustrate this point, a UH Mānoa graduate student, Kevin Faccenda recently surveyed along



roadsides across the state of Hawai'i and found a number of new records of grass species that were previously unrecorded. An article in the UH News published online in October 2023: "New invasive, weedy grasses discovered across Hawai'i, some pose major fire risk" says it all, along with this quote: "At least two of the newly reported grass species are considered highly flammable and have been discovered at multiple sites across the state."

Without adequate investment in prevention pre-border and at the borders, it is likely that the wildfire situation in Hawai'i will be worsened by new arrivals that increase hazard fuel loads, further challenging public health and safety. I highly recommend the committee consider having a section in the Recommendations portion on Biosecurity, Prevention, and Early Detection, Rapid Response (EDRR) so that the state can be more proactive and work to reduce future harm by reducing the number of non-native species that establish including non-native grass species that may increase wildfire risk. Decades of research and practice demonstrate that investment early on (pre-border, at the border, or just after arrival) is the most efficient and effective way of addressing invasive species issues.

Third, I would like to highlight the critical importance of this recommendation in the report under Community Engagement: "Modify existing emergency preparedness and disaster mitigation plans to incorporate Community Wildfire Protection Plans where necessary." There are gaps in state and county plans that need to be filled, including state hazard mitigation plans and climate action plans that do not adequately address invasive species issues that contribute to hazards or are exacerbated by climate change. A recent report by a Hawai'i Tree Canopy Viewer Fellow found that for Hawai'i Island, important plans such as the County of Hawai'i General Plan and Kona Community Development Plan did not adequately address the topic of wildfire exacerbated by land cover change or climate change, and the Hawai'i County Climate Action Plan did not adequately address wildfire adaptation initiatives such as fuels mitigation or Firewise communities. This is significant as an analysis done in 2020 found that 94.4% of the homes in Hawai'i are vulnerable to wildfire because they are built within the wildland-urban interface compared with 42.3% of structures in the conterminous U.S. As well, the Tree Canopy Viewer report found that the majority of new developments planned for Hawai'i County will be located in areas of high wildfire risk, including lands covered and surrounded by non-native grasses that increase wildfire risk. The committee could consider recommending that hazard mitigation plans, climate action plans, development plans, and general plans address invasive species, climate change, and wildfire risk.

Other ideas for the committee to consider include 1) creating a special fund to purchase properties in high wildfire-risk areas that are adjacent to communities. Once purchased, these areas could be managed to reduce wildfire risk and could also be used for parks, trails, golf courses, recreation areas, or other uses that provide public benefit or protection. 2) fund a full-time DLNR wildland firefighting team that can mobilize rapidly for wildfire suppression and also help with hazard fuel reduction. Currently, state wildfire staff are only dedicated to fighting wildfires part-time, but as conditions become hotter and dryer with climate change, a full-time dedicated crew will likely be needed. 3) make it easier for DLNR to use domestic cattle, goat, and sheep grazing as a tool for reducing fuel loads in dry leeward areas that have extensive coverage of fire-prone non-native grasslands. Currently, grazing permits are limited to 1 year in state forest reserve lands by statute, which limits the ability of grazing permittees to be able to invest in infrastructure. Cattle can provide a public benefit by doing the same vegetation management work that could cost taxpayers millions of dollars to accomplish (e.g., imagine hiring 1000 staff to weed-eat thousands of acres annually). The Hawai'i State Legislature could amend existing laws, statutes, or administrative rules to grant DLNR the ability to offer multiple-year (10-20-year) permits, leases, or licenses

to grazing permittees to reduce wildfire risk which could both protect communities and native ecosystems as well as expand the footprint of agriculture and increase food security, providing co-benefits across sectors.

Finally, I wholeheartedly agree with the recommendation to "Expand wildland fire training opportunities across all response agencies." As climate change continues to increase wildfire risk in the state, knowledge of how to reduce wildfire risk, navigate existing fires safely, and extinguish fires becomes increasingly important. Having all response agencies trained at the S130/190 level at a minimum (or more), would elevate this knowledge base and reduce risk for everyone as well as increase communication between response agencies.

In summary, the Wildfire Prevention Working Group has done an excellent job of creating a report that highlights the growing wildfire crisis in Hawai'i as well as the proximate causes of wildfire risk, with a solid set of recommendations that can help guide legislative action to increase public safety, health, and wellness. By strengthening sections on climate change biosecurity, and state and county planning documents, this report could be more comprehensive.

Thank you again for your hard and sustained work to protect the people and ecosystems of Hawai'i, and for the opportunity to comment on this critical effort.

Mahalo,

Elliott Parsons

## Wildfire Prevention Working Group

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**From:** samandias.skd@gmail.com  
**Sent:** Sunday, November 12, 2023 4:26 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** TESTIMONY - WFPWG Working Group's draft report public Input  
**Attachments:** Wildfire Prevention testimony.pdf

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Nov 12, 2023

Subject: Testimony - Inclusion of Emergency Evacuation Routes, with Emphasis on Cane Haul Roads, in Lahaina Wildfire Relief

Honorable House of Representative,

WILDFIRE PREVENTION WORKING GROUP

Rep. Linda Ichiyama, Co-Chair

Rep. Darius K. Kila, Co-Chair

Rep. Terez Amato Rep. Rose Martinez

Rep. Cory M. Chun Rep. Amy A. Perruso

Rep. Sonny Ganaden Rep. Mahina Poepoe

Rep. Cedric Asuega Gates Rep. Jackson D. Sayama

Rep. Natalia Hussey-Burdick Rep. David A. Tarnas

Rep. Kirstin Kahaloa Rep. Chris Todd

Rep. Lisa Marten Rep. Lauren Matsumoto

I trust this testimony reaches you as part of the dedicated individuals working on the Lahaina Wildfire Relief efforts. My name is Saman Dias, an engaged member of the Lahaina community. Having thoroughly reviewed the draft reports released by the Lahaina Wildfire Relief Six House Interim Working Groups, I wish to draw attention to a critical aspect that requires inclusion - the incorporation of designated emergency evacuation routes, with a specific emphasis on utilizing cane haul roads.

Key Points of Testimony:

1. **Critical Importance:** The recent Lahaina fire underscores the critical importance of having designated evacuation routes in place. I strongly urge the working groups to prioritize recommendations for the establishment of these routes, taking into account the unique advantages offered by existing cane haul roads.
2. **Utilization of Cane Haul Roads:** Cane haul roads present a valuable and existing infrastructure that can serve as efficient emergency evacuation routes. These roads are well-established and, if properly maintained and unlocked, could significantly enhance the community's ability to evacuate safely during emergencies.
3. **Inclusive Planning:** It is imperative that the relief efforts consider the needs of all members of our community. This includes ensuring that evacuation routes, especially those utilizing cane haul roads, are accessible and accommodating to special populations, such as residents in elderly homes and assisted living facilities.

4. **Urgency of Action:** Emphasize the urgency of immediate action in implementing these evacuation measures. The recent tragedy highlights the need for a proactive approach to prevent and mitigate the impact of future disasters.
5. **Community Awareness:** Recommend strategies for raising community awareness about the designated evacuation routes, specifically highlighting the use of cane haul roads. A well-informed community is better equipped to respond effectively during emergencies.
6. **Collaboration with Local Authorities:** Advocate for collaboration with local authorities, including the Maui County Council, to ensure that the proposed evacuation routes align with existing plans and regulations.

I firmly believe that incorporating these recommendations into the final Lahaina Wildfire Relief efforts, with a focus on utilizing cane haul roads, will significantly contribute to the safety and resilience of our community.

Thank you for your dedicated efforts in addressing the various needs arising from the Lahaina wildfire. I look forward to witnessing the positive impact of our collective endeavors.

Sincerely,

A handwritten signature in black ink, appearing to read 'Saman Dias', written in a cursive style.

Saman Dias

West Maui Community member

## Wildfire Prevention Working Group

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**From:** Jack Minassian <jackm@hawaii.edu>  
**Sent:** Monday, November 13, 2023 2:35 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Wildland Fire Testimony

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Aloha,

I have been a wildland firefighter for 35 years. I moved to Hawaii in 1988 and assumed the position of Pacific Island Fire Management Officer for the National Park Service. I retired in 2004 and in 2005 I started teaching Fire Science Courses at Hawaii Community College.

The natural fire regime for Hawaii was low frequency and low intensity fires. In the 1960s the Hawaii Fire Regime changed due to invasive fire adapted alien grasses such as broomsedge, beardgrass, fountain grass etc. These fire adapted grasses have increased fire frequency and fire intensity and have been replacing the Native Hawaiian plants.

The three main parameters affecting wildland fire behavior are topography, weather and fuels. We have no control over topography or weather, but we can control fuels.

My recommendation is that whenever possible there should be a united effort to replace the alien fire adapted grasses with the native Pili Grass. Pili grass will burn, but Pili tends to burn with a high fire intensity at around 40% relative humidity vs alien grasses which burn at a high intensity at around 60% relative humidity. We have fewer 40% RH days than 60% RH days. This could return the fire regime to a lower fire frequency. This can be done.

I hope this helps with future planning.

Sincerely,

Jack Minassian

--

*Jack M. Minassian  
Associate Professor  
Fire Science Program Coordinator  
Hawaii Community College  
1175 Manono St.  
Hilo, HI 96720-5096  
808-934-2617*

## Wildfire Prevention Working Group

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**From:** maui@hbl.org  
**Sent:** Monday, November 13, 2023 3:12 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Comprehensive Wildfire Prevention Strategies for Hawaii  
**Attachments:** Wildfire Prevention testimony\_MBL.pdf

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Nov 13, 2023

**Subject: Testimony - Inclusion of Emergency Evacuation Routes, with Emphasis on Cane Haul Roads, in Lahaina Wildfire Relief  
WILDFIRE PREVENTION WORKING GROUP**

Rep. Linda Ichiyama, Co-Chair  
Rep. Darius K. Kila, Co-Chair  
Rep. Terez Amato Rep. Rose Martinez  
Rep. Cory M. Chun Rep. Amy A. Perruso  
Rep. Sonny Ganaden Rep. Mahina Poepoe  
Rep. Cedric Asuega Gates Rep. Jackson D. Sayama  
Rep. Natalia Hussey-Burdick Rep. David A. Tarnas  
Rep. Kirstin Kahaloa Rep. Chris Todd  
Rep. Lisa Marten Rep. Lauren Matsumoto

**Subject: Testimony - Inclusion of Emergency Evacuation Routes, with Emphasis on Cane Haul Roads, in Lahaina Wildfire Relief**

Honorable House of Representatives,

I trust this testimony reaches you as part of the dedicated individuals working on the Lahaina Wildfire Relief efforts. My name is Saman Dias. I am Chair of Maui Bicycling League and engaged member of the Lahaina community. Having thoroughly reviewed the draft reports released by the Lahaina Wildfire Relief Six House Interim Working Groups, I wish to draw attention to a critical aspect that requires inclusion - the incorporation of designated emergency evacuation routes, with a specific emphasis on utilizing cane haul roads.

**Critical Importance:** The recent Lahaina fire underscores the critical importance of having designated evacuation routes in place. I strongly urge the working groups to prioritize

recommendations for the establishment of these routes, taking into account the unique advantages offered by existing cane haul roads.

**Utilization of Cane Haul Roads:** Cane haul roads present a valuable and existing infrastructure that can serve as efficient emergency evacuation routes. These roads are well-established and, if properly maintained and unlocked, could significantly enhance the community's ability to evacuate safely during emergencies.

**Existing West Maui Greenway Plan:** I draw your attention to the existing West Maui Greenway (WMG) plan, specifically page 20 of the master plan, which recommends the use of the greenway as an emergency evacuation route. Given Lahaina's geographical positioning and limited transportation options, having a comprehensive plan for evacuation is paramount to the safety of our community.

**Unique Opportunity for Multi-Use Trail Development:** This moment presents a unique opportunity to build the West Maui Greenway as a multi-use trail with key benefits focused on transportation and emergency evacuation. By integrating these elements into the greenway's design, we not only enhance community safety but also contribute to the fight against climate change and the creation of healthier communities.

**New Funding Sources and Resources:** The implementation of the West Maui Greenway as a multi-use trail aligns with current priorities and presents an opportune time to explore new funding sources and resources.

This forward-thinking approach could attract support from various sectors interested in promoting sustainable and resilient community development.

**Utilizing Arm Corp of Eng Support:** I recommend exploring the possibility of leveraging support from the Army Corps of Engineers to aid in the construction of the West Maui Greenway. Their expertise and resources could significantly contribute to the successful realization of this project.

**Urgency of Action:** Emphasize the urgency of immediate action in implementing these evacuation measures. The recent tragedy highlights the need for a proactive approach to prevent and mitigate the impact of future disasters.

**Community Awareness:** Recommend strategies for raising community awareness about the designated evacuation routes, specifically highlighting the use of cane haul roads and the existing WMG plan. A well-informed community is better equipped to respond effectively during emergencies.

**Collaboration with Local Authorities and Advocates:** I strongly recommend fostering collaboration not only with local authorities, including the Maui County Council, but also with

community advocates deeply invested in the safety and well-being of Lahaina. Engaging advocates will bring diverse perspectives and invaluable insights to the table, ensuring that the proposed evacuation routes, especially those utilizing cane haul roads and aligned with the West Maui Greenway plan, truly meet the specific needs of our community. This inclusive approach will foster a sense of shared ownership and commitment, enhancing the likelihood of successful implementation.

I firmly believe that incorporating these recommendations into the final Lahaina Wildfire Relief efforts, with a focus on utilizing cane haul roads and leveraging the existing WMG plan, will significantly contribute to the safety and resilience of our community.

Thank you for your dedicated efforts in addressing the various needs arising from the Lahaina wildfire. I look forward to witnessing the positive impact of our collective endeavors.

Sincerely,

Saman Dias

**Chair Maui Bicycling League**



808-209-2542

maui@hbl.org

[www.mauibike.org](http://www.mauibike.org)

<https://www.westmauigreenway.org>



Dear Wildfire Prevention Working Group:

Thank you for the opportunity to offer comments on your Wildfire Prevention Working Group's draft report. I am a retired DLNR/DOFAW Forester, and a former FEMA Reservist. My comments center on your Recommendations section, Item 5, Wildfire Suppression, and Item 6, Post-Fire Response.

### **5. Wildfire Suppression:**

Suggest deleting bullet:

- *Negotiate standing agreements to use privately-owned water storage, etc.* –

Comment - Suggest deleting this bullet, as agency emergency powers should already address this issue, E.G. HRS 185-3. If other agencies do not have those powers, I suggest they be addressed in law and rule, not an agreement process.

Suggest adding bullets:

- *Pre-negotiate state and county agreements and contracts for privately-owned heavy equipment, aircraft and support services.*

Comment – This is a standard federal agency practice on the mainland, which pre-establishes costs and hiring conditions, making resource ordering smoother and more responsive.

- *Expand wildland fire training opportunities across all response agencies, with emphasis on meeting NIMS (National Incident Management System) and NWCG (National Wildfire Coordinating Group) mandates, standards and qualifications.*

Comment – NIMS is *mandated* by Homeland Security Presidential Directive 5, so compliance should always be a goal. NWCG sets forth national standards for wildfire training and qualifications. Using these as requirements ensures our responders are trained and operate at the highest, most consistent standards. It also protects them from possible post-event qualification questions and challenges.

- *Ensure Federal and State mitigation and support programs are fully utilized.*

Comment – We should be on the lookout for grant and support opportunities.

Suggest re-wording following bullet to be more action-oriented:

- *Ensure counties' abilities to provide intrastate mutual firefighting aid.*

Incorporating the above, a complete suggested Section 5 would look like:

### **5. Wildfire Suppression**

- Increase response capacity, especially by state personnel.
- Support setting a state staffing standard ensuring all county fire companies maintain staffing levels that, at minimum, meet the national standard.
- Establish, maintain and update wildfire-specific equipment and wildfire-suppression infrastructure statewide (dip tank expansion, reservoir restoration).
- Pre-negotiate state and county agreements and contracts for privately-owned heavy equipment, aircraft and support services.
- Expand wildland fire training opportunities across all response agencies, with emphasis on meeting NIMS (National Incident Management Systems) and NWCG (National Wildfire Coordinating Group) mandates, standards and qualifications.
- Ensure counties' abilities to provide intrastate mutual firefighting aid.

- Authorize Hawaii's participation in a State Wildfire Compact to support efficiently moving and sharing firefighting resources statewide.
- Ensure Federal and State mitigation and support programs are fully utilized.

#### **6. Post-Fire Response:**

Suggest adding bullet:

- *Create policy to consider initial wildfire rehabilitation costs to be a part of suppression costs.*

Comment - Mainland agencies often factor in initial rehab costs as a part of their fire suppression costs. This inclusion ensures there are funds to cover those initial costs. Can this be established as policy in Hawaii?

Suggest editing bullet:

- *Establish protocols and provide resources for post-fire rehabilitation efforts, such as erosion control, planting appropriate species, and suppressing and managing weeds.*

Comment – Focus should be on “appropriate species” not limiting ourselves to “native” vegetation. Recovery may be in several stages, with natives coming later. Suggest the focus should be on immediate soil protection and ground cover stabilization efforts with non-invasive species.

Suggest deleting bullet:

- *Where appropriate, consider use of hydro-spray, etc.*

Comment – This is getting into micro-management, and I suggest the bullet be deleted.

Incorporating the above, a complete suggested Section 6 would look like:

#### **6. Post-Fire Response**

- Create policy to consider initial wildfire rehabilitation costs to be a part of suppression costs.
- Establish protocols and provide resources for post-fire rehabilitation efforts, such as erosion control, planting appropriate species, and suppressing and managing weeds.

Thank you for your consideration of my comments and suggestions.

Respectfully submitted,

Edwin Petteys  
Resident of Hawaii Island

## **Wildfire Prevention Working Group – Testimony/Recommendations**

Submitted by John Kikuyama ([jkikuyama@gmail.com](mailto:jkikuyama@gmail.com))

808-281-0770

My name is John Kikuyama. I am a retired Chief Master Sergeant that served 35 years in the military. I was born and raised in Lahaina. My grandparent's home was destroyed in the recent Lahaina fire. My best friend also lost his home and another friend lost his cousin. When the dust settles, I'll probably know dozens if not hundreds of people that lost their homes, jobs and trust that the government will do everything possible to prevent future wildfires.

During the later half of my military career, I served as an inspector for the Pacific Air Forces (PACAF) and Air Force Space Command (AFSPC) Inspector Generals (IG). All our IG inspections were compliance based so I knew the basis were the written/published regulations. I believe when we translate that to the civilian world, the basis for compliance would be the published laws/statutes.

The following are my recommendations to prevent future loss of life and property due to wildfires:

### **Initiate a State of Emergency (State and County level):**

- Initiate a State of Emergency declaring dry invasive grass (Guinea and Buffel) and abandoned sugarcane wildfire fuel thus, a safety hazard and source of imminent danger.
- This declaration could go a long way in cutting through the "red tape" in addressing these hazards.
- Continuously extend the State of Emergency indefinitely until the wildfire fuel issue has been properly managed.

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0127A/HRS\\_0127A-0014.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0127A/HRS_0127A-0014.htm)

### **Update the Noxious Weed List:**

- Update the List of "Plant Species Designated as Noxious Weeds for Eradication or Control Purposes" to include Guinea Grass and Buffel Grass.
- Expedite the process by tying it to the State of Emergency.

<https://casetext.com/regulation/hawaii-administrative-rules/title-4-department-of-agriculture/subtitle-6-department-of-agriculture/chapter-68-noxious-weed-rules/list-of-plant-species-designated-as-noxious-weeds-for-eradication-or-control-purposes-by-the-hawaii-department-of-agriculture>

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0152/HRS\\_0152-0004.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0152/HRS_0152-0004.htm)

### **Amend Hawaii Revised Statute (HRS) Chapter 132 to Identify a Fire Hazard Free Space:**

- Identify a fire hazard free space when communities are adjacent to wildland areas.
- This fire hazard free space would more than likely be within a large landowner's property.

- Utilize wildfire experts and Fire Chiefs to determine what the appropriate space/distance should be.
- Expedite the process by tying it to the State of Emergency.

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0132/HRS\\_0132-.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0132/HRS_0132-.htm)

**Amend (HRS) Chapter 132 to Identify Wildfire Fuel as a Fire Hazard:**

- Identify wildfire fuel, specifically dried Guinea Grass, dried Buffel Grass and abandoned sugar cane as a “Fire Hazard”.
- Expedite the process by tying it to the State of Emergency.

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0132/HRS\\_0132-.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0132/HRS_0132-.htm)

**Amend HRS Chapter 132 Section 7:**

- Amend section 7 from “as the case may be, at the expense of the owner or occupant” to “as the case shall be, at the expense of the owner or occupant”
- This change should hold landowners more accountable for removing fire hazards.
- Expedite the process by tying it to the State of Emergency.

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0132/HRS\\_0132-0007.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0132/HRS_0132-0007.htm)

**Amend (HRS) Chapter 132 to Restrict Outdoor Fire Ignition Sources During Red Flag Conditions with High Winds:**

- This initiative will more than likely get a lot of push back but this falls in-line with doing everything possible to prevent wildfires.
- Utilize wildfire experts and Fire Chiefs to determine which ignition sources should be restricted. Some possible examples are outdoor barbeques, parking vehicles on dried grass, and launching aerial fireworks.
- Expedite the process by tying it to the State of Emergency.

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0132/HRS\\_0132-.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0132/HRS_0132-.htm)

**Increase Funding to Support Removal of Fire Hazards:**

- This would allow funding to contract and remove fire hazards from land owner’s property.
- Expedite the process by tying it to the State of Emergency.

<https://www.civilbeat.org/2023/08/hawaii-has-long-shortchanged-wildfire-protection-we-could-have-saved-lives/>

**Increase County Funding to Hire Additional Fire Department Employees:**

- Additional employees would perform property inspections for fire hazards as well as track the removal of the identified fire hazards.
- Expedite the process by tying it to the State of Emergency.

[https://www.capitol.hawaii.gov/hrscurrent/Vol03\\_Ch0121-0200D/HRS0132/HRS\\_0132-0006.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0132/HRS_0132-0006.htm)

## Secondary Plan

### Utilize Eminent Domain:

- Utilize Eminent Domain to take (seize) wildland property adjacent to wildfire vulnerable residential communities.
- Utilize the National Weather Service Wildland Fire Maps and Drought Monitor Maps to determine the most wildfire vulnerable areas in Hawaii.
- Expedite the process by tying it to the State of Emergency.

[https://www.capitol.hawaii.gov/hrscurrent/Vol02\\_Ch0046-0115/HRS0101/HRS\\_0101-0002.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol02_Ch0046-0115/HRS0101/HRS_0101-0002.htm)

### Build Public Green Breaks on Seized Property:

- Green Breaks can drastically reduce fire risks.
- Example of Green Breaks are parks, practice fields, and driving ranges.
- Strive for lower maintenance Green Breaks.
- Utilize wildfire experts and Fire Chiefs to determine the size of these Green Breaks.
- Lobby for Federal Funds to build the Green Breaks.
- Expedite the process by tying it to the State of Emergency.

<https://www.mauicounty.gov/DocumentCenter/View/129491/Report-on-Wildfire-Prevention--Cost-Recovery-on-Maui---Part-4-Exhibit-D-25-MB>

### Utilize Recycled Water to Irrigate the Green Breaks:

- West Maui and South Maui are the two most wildfire vulnerable areas on the island.
- West Maui and South Maui are also the two areas most prone to drought on the island.
- West Maui and South Maui also have waste water treatment plants that inject millions of gallons of treated water each day into the water table.
- Recycled water can be used for fire protection and landscape irrigation.
- Lobby for Federal Funds to build pipelines from Wastewater Treatment plants and irrigation systems.
- Consider installing fire hydrants that use the same treated water on or around the Green Breaks.
- Expedite the process by tying it to the State of Emergency.

[https://files.hawaii.gov/dbedt/erp/Doc\\_Library/2021-06-23-MA-FEA-West-Maui-Recycled-Water-System.pdf](https://files.hawaii.gov/dbedt/erp/Doc_Library/2021-06-23-MA-FEA-West-Maui-Recycled-Water-System.pdf)

<https://scadata.net/can-recycled-water-used/#:~:text=Fire%20protection%3A%20Containing%20a%20fire,clean%20water%20for%20drinking%20purposes.>

## Wildfire Prevention Working Group

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**From:** stevegoldsmit77@gmail.com  
**Sent:** Tuesday, November 14, 2023 10:21 AM  
**To:** Wildfire Prevention Working Group  
**Cc:** Rep. Linda Ichiyama; Sheldon Galdeira; Rep. Darius K. Kila  
**Subject:** Testimony for the draft Wildfire Prevention draft report's public hearing on Friday, November 17th, 2023

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Wildfire Prevention public hearing:

Please accept my testimony in my below emails in support of Wildfire cameras with AI monitoring.

I have no financial interest in any companies related to this issue.

Aloha,  
Steve

Stephen E. Goldsmith  
44 Kanani Rd #3-304  
Kihei, HI 96753  
808-879-7576 Home  
808-283-3166 Cell  
[SteveGoldsmith77@gmail.com](mailto:SteveGoldsmith77@gmail.com)

---

**From:** Dorene Eddy <d.eddy@capitol.hawaii.gov> **On Behalf Of** Rep. Darius K. Kila  
**Sent:** Tuesday, November 14, 2023 8:23 AM  
**To:** stevegoldsmit77@gmail.com  
**Cc:** Rep. Darius K. Kila <repkila@capitol.hawaii.gov>; Rep. Linda Ichiyama <repichiyama@capitol.hawaii.gov>; Sheldon Galdeira <s.galdeira@capitol.hawaii.gov>  
**Subject:** RE: A SOLUTION for future Maui Fires

Good Morning, Mr. Goldsmith:

Thank you for your email regarding the wildfire report. Could you please redirect your email to [wfpwg@capitol.hawaii.gov](mailto:wfpwg@capitol.hawaii.gov), which is the email accepting testimony for the draft Wildfire Prevention draft report's public hearing on Friday, November 17<sup>th</sup>, 2023. Redirecting your testimony to this email address will allow us to make your testimony apart of the record and distribute your testimony to all of the committee members and other relevant agencies at the Capitol.

Thank you for your assistance regarding this matter.



**Dorene W. Eddy**

Office Manager for Representative Darius K. Kila  
House District 44  
Honokai Hale, Nānākuli, Māʻili

p: (808) 586-9480  
e: [d.eddy@capitol.hawaii.gov](mailto:d.eddy@capitol.hawaii.gov)  
a: 415 S. Beretania St. Room #322  
Honolulu HI, 96813

**From:** [stevegoldsmith77@gmail.com](mailto:stevegoldsmith77@gmail.com) <[stevegoldsmith77@gmail.com](mailto:stevegoldsmith77@gmail.com)>

**Sent:** Tuesday, November 14, 2023 4:09 AM

**To:** [RepIchiyama@gmail.com](mailto:RepIchiyama@gmail.com); Rep. Linda Ichiyama <[repichiyama@capitol.hawaii.gov](mailto:repichiyama@capitol.hawaii.gov)>; [darius@dariuskila.com](mailto:darius@dariuskila.com); Rep. Darius K. Kila <[repkila@capitol.hawaii.gov](mailto:repkila@capitol.hawaii.gov)>

**Cc:** Rep. Terez Amato <[repamato@capitol.hawaii.gov](mailto:repamato@capitol.hawaii.gov)>; Rep. Cory M. Chun <[repchun@capitol.hawaii.gov](mailto:repchun@capitol.hawaii.gov)>; Rep. Sonny Ganaden <[repganaden@capitol.hawaii.gov](mailto:repganaden@capitol.hawaii.gov)>; Rep. Cedric Asuega Gates <[repgates@capitol.hawaii.gov](mailto:repgates@capitol.hawaii.gov)>; Rep. Natalia Hussey-Burdick <[rephusseyburdick@capitol.hawaii.gov](mailto:rephusseyburdick@capitol.hawaii.gov)>; Rep. Kirstin Kahaloa <[repkahaloa@capitol.hawaii.gov](mailto:repkahaloa@capitol.hawaii.gov)>; Rep. Lisa Marten <[repmarten@capitol.hawaii.gov](mailto:repmarten@capitol.hawaii.gov)>; Rep. Rose Martinez <[repmartinez@capitol.hawaii.gov](mailto:repmartinez@capitol.hawaii.gov)>; Rep. Lauren Matsumoto <[repmatsumoto@capitol.hawaii.gov](mailto:repmatsumoto@capitol.hawaii.gov)>; Rep. Amy A. Perruso <[repperruso@capitol.hawaii.gov](mailto:repperruso@capitol.hawaii.gov)>; Rep. Mahina Poepoe <[reppoepoe@capitol.hawaii.gov](mailto:reppoepoe@capitol.hawaii.gov)>; Rep. Jackson D. Sayama <[repsayama@capitol.hawaii.gov](mailto:repsayama@capitol.hawaii.gov)>; Rep. David A. Tarnas <[reptarnas@capitol.hawaii.gov](mailto:reptarnas@capitol.hawaii.gov)>; Rep. Chris Todd <[reptodd@capitol.hawaii.gov](mailto:reptodd@capitol.hawaii.gov)>

**Subject:** RE: A SOLUTION for future Maui Fires

Some people who received this message don't often get email from [stevegoldsmith77@gmail.com](mailto:stevegoldsmith77@gmail.com). [Learn why this is important](#)

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Since my last email, Hawaii continues to fall behind other states in wildfire early detection through cameras monitored by AI. After California expanded their “test” program statewide due to its amazing results for early wildfire detection, Colorado has now followed suit:

**XCEL ENERGY TO UTILIZE AI FOR WILDFIRE PREVENTION SYSTEM**

Xcel Energy Colorado expects to spend about \$180 million on wildfire prevention this year and Colorado's largest utility will be adding artificial intelligence to its arsenal to fight what has become a year-round battle. Xcel is expanding its work with Pano AI, a San Francisco-based company that will install 21 camera systems by the end of the year on more than 1.5 million acres across the utility’s territory. The objective is to quickly alert Xcel and first responders when smoke is detected. Pano uses artificial intelligence, or AI, to interpret images from its high-definition cameras that capture 360-degree views, adding data from satellite feeds and other sources to assess the weather and conditions on the ground. The company staffs a center 24/7 where people review information. Pano AI is working with local agencies in western Colorado and has deployed its technology in seven other states, as well as in Canada and Australia.

- [Denver Post](#), 11.10.23

Aloha,  
Steve

Stephen E. Goldsmith  
44 Kanani Rd #3-304  
Kihei, HI 96753  
808-879-7576 Home  
808-283-3166 Cell

[SteveGoldsmith77@gmail.com](mailto:SteveGoldsmith77@gmail.com)

---

**From:** [stevegoldsmit77@gmail.com](mailto:stevegoldsmit77@gmail.com) <[stevegoldsmit77@gmail.com](mailto:stevegoldsmit77@gmail.com)>

**Sent:** Thursday, September 7, 2023 4:29 AM

**To:** [RepIchiyama@gmail.com](mailto:RepIchiyama@gmail.com); [repichiyama@capitol.hawaii.gov](mailto:repichiyama@capitol.hawaii.gov); [darius@dariuskila.com](mailto:darius@dariuskila.com); [repkila@capitol.hawaii.gov](mailto:repkila@capitol.hawaii.gov)

**Cc:** [repamato@capitol.hawaii.gov](mailto:repamato@capitol.hawaii.gov); [repchun@capitol.hawaii.gov](mailto:repchun@capitol.hawaii.gov); [repganaden@capitol.hawaii.gov](mailto:repganaden@capitol.hawaii.gov); [repgates@capitol.hawaii.gov](mailto:repgates@capitol.hawaii.gov); [rephusseyburdick@capitol.hawaii.gov](mailto:rephusseyburdick@capitol.hawaii.gov); [repkahaloa@capitol.hawaii.gov](mailto:repkahaloa@capitol.hawaii.gov); [repmarten@capitol.hawaii.gov](mailto:repmarten@capitol.hawaii.gov); [repmartinez@capitol.hawaii.gov](mailto:repmartinez@capitol.hawaii.gov); [repmatsumoto@capitol.hawaii.gov](mailto:repmatsumoto@capitol.hawaii.gov); [repperruso@capitol.hawaii.gov](mailto:repperruso@capitol.hawaii.gov); [reppoepoe@capitol.hawaii.gov](mailto:reppoepoe@capitol.hawaii.gov); [repsayama@capitol.hawaii.gov](mailto:repsayama@capitol.hawaii.gov); [reptarnas@capitol.hawaii.gov](mailto:reptarnas@capitol.hawaii.gov); [reptodd@capitol.hawaii.gov](mailto:reptodd@capitol.hawaii.gov)

**Subject:** FW: A SOLUTION for future Maui Fires

Dear Wildfire Prevention Committee,

Please consider paying for cameras with AI monitoring for Maui County and then across the state. This new technology really works. See email stream below.

Mahalo for your consideration and action.

#### Wildfire Prevention

- Co-Chairs: Linda Ichiyama and Darius K. Kila
- Members: Terez Amato, Cory M. Chun, Sonny Ganaden, Cedric Asuega Gates, Natalia Hussey-Burdick, Kirstin Kahaloa, Lisa Marten. Rose Martinez, Lauren Matsumoto, Amy A. Perruso, Mahina Poepoe, Jackson D. Sayama, David A. Tarnas and Chris Todd
- Purpose: To identify the causes of wildfires and preventative action that may be taken to reduce the risk of wildfires throughout the state, and prepare recommendations for appropriate legislative action.

Aloha,  
Steve

Stephen E. Goldsmith  
44 Kanani Rd #3-304  
Kihei, HI 96753  
808-879-7576 Home  
808-283-3166 Cell  
[SteveGoldsmith77@gmail.com](mailto:SteveGoldsmith77@gmail.com)

---

**From:** [stevegoldsmit77@gmail.com](mailto:stevegoldsmit77@gmail.com) <[stevegoldsmit77@gmail.com](mailto:stevegoldsmit77@gmail.com)>

**Sent:** Tuesday, September 5, 2023 7:25 AM

**To:** 'Alice L. Lee' <[Alice.Lee@mauicounty.us](mailto:Alice.Lee@mauicounty.us)>; 'Thomas M. Cook' <[Thomas.Cook@mauicounty.us](mailto:Thomas.Cook@mauicounty.us)>; 'Gabe Johnson' <[Gabe.Johnson@mauicounty.us](mailto:Gabe.Johnson@mauicounty.us)>; 'Tasha A. Kama' <[Tasha.Kama@mauicounty.us](mailto:Tasha.Kama@mauicounty.us)>; 'Tamara A. Paltin' <[Tamara.Paltin@mauicounty.us](mailto:Tamara.Paltin@mauicounty.us)>; 'Keani N. Rawlins' <[Keani.Rawlins@mauicounty.us](mailto:Keani.Rawlins@mauicounty.us)>; 'Nohe M. Uu-Hodgins' <[Nohe.Uu-Hodgins@mauicounty.us](mailto:Nohe.Uu-Hodgins@mauicounty.us)>; 'Yukilei Sugimura' <[Yukilei.Sugimura@mauicounty.us](mailto:Yukilei.Sugimura@mauicounty.us)>; 'Hana' <[Council.Hana@mauicounty.us](mailto:Council.Hana@mauicounty.us)>; 'Shane M. Sinenci' <[Shane.Sinenci@mauicounty.us](mailto:Shane.Sinenci@mauicounty.us)>

**Cc:** [Mayors.Office@co.maui.hi.us](mailto:Mayors.Office@co.maui.hi.us); [fire.dept@mauicounty.gov](mailto:fire.dept@mauicounty.gov); [Fire.Prevention@mauicounty.gov](mailto:Fire.Prevention@mauicounty.gov)

**Subject:** RE: A SOLUTION for future Maui Fires

P.S. And other small departments are already getting fire cameras with AI monitoring:

## CARBONDALE FIRE DISTRICT GETS AI CAMS



The Carbondale & Rural Fire Protection District installed their “eye in the sky” to help detect fires before they evolve into roaring infernos. After delays in securing a helicopter, Pano AI cameras were installed atop a Pitkin County telecom tower on Elephant Mountain on Tuesday. The cameras provide a 360-degree view of a 15-mile radius. Artificial intelligence scans live images for signs of smoke and alerts a Pano AI team of analysts if smoke appears. The Aspen Fire Dept. has four cameras within its district and was the first Colorado fire department to work with Pano AI.

- [Aspen Times](#), 09.02.23

<https://www.aspentimes.com/news/carbondale-fire-gets-ai-cameras-installed-for-early-fire-detection/>

<https://www.pano.ai/>

Aloha,  
Steve

---

**From:** [stevegoldsmith77@gmail.com](mailto:stevegoldsmith77@gmail.com) <[stevegoldsmith77@gmail.com](mailto:stevegoldsmith77@gmail.com)>

**Sent:** Saturday, September 2, 2023 10:19 AM

**To:** 'Alice L. Lee' <[Alice.Lee@mauicounty.us](mailto:Alice.Lee@mauicounty.us)>; 'Thomas M. Cook' <[Thomas.Cook@mauicounty.us](mailto:Thomas.Cook@mauicounty.us)>; 'Gabe Johnson' <[Gabe.Johnson@mauicounty.us](mailto:Gabe.Johnson@mauicounty.us)>; 'Tasha A. Kama' <[Tasha.Kama@mauicounty.us](mailto:Tasha.Kama@mauicounty.us)>; 'Tamara A. Paltin' <[Tamara.Paltin@mauicounty.us](mailto:Tamara.Paltin@mauicounty.us)>; 'Keani N. Rawlins' <[Keani.Rawlins@mauicounty.us](mailto:Keani.Rawlins@mauicounty.us)>; 'Nohe M. Uu-Hodgins' <[Nohe.Uu-Hodgins@mauicounty.us](mailto:Nohe.Uu-Hodgins@mauicounty.us)>; 'Yukilei Sugimura' <[Yukilei.Sugimura@mauicounty.us](mailto:Yukilei.Sugimura@mauicounty.us)>; 'Hana' <[Council.Hana@mauicounty.us](mailto:Council.Hana@mauicounty.us)>; 'Shane M. Sinenci' <[Shane.Sinenci@mauicounty.us](mailto:Shane.Sinenci@mauicounty.us)>

**Subject:** RE: A SOLUTION for future Maui Fires

Thank you Alice and the entire Council for moving forward on AI fire solutions.

Aloha,  
Steve

---

**From:** Alice L. Lee <[Alice.Lee@mauicounty.us](mailto:Alice.Lee@mauicounty.us)>

**Sent:** Saturday, September 2, 2023 9:45 AM

**To:** [stevegoldsmith77@gmail.com](mailto:stevegoldsmith77@gmail.com); Thomas M. Cook <[Thomas.Cook@mauicounty.us](mailto:Thomas.Cook@mauicounty.us)>; Gabe Johnson <[Gabe.Johnson@mauicounty.us](mailto:Gabe.Johnson@mauicounty.us)>; Tasha A. Kama <[Tasha.Kama@mauicounty.us](mailto:Tasha.Kama@mauicounty.us)>; Tamara A. Paltin <[Tamara.Paltin@mauicounty.us](mailto:Tamara.Paltin@mauicounty.us)>; Keani N. Rawlins <[Keani.Rawlins@mauicounty.us](mailto:Keani.Rawlins@mauicounty.us)>; Nohe M. Uu-Hodgins <[Nohe.Uu-Hodgins@mauicounty.us](mailto:Nohe.Uu-Hodgins@mauicounty.us)>; Yukilei Sugimura <[Yukilei.Sugimura@mauicounty.us](mailto:Yukilei.Sugimura@mauicounty.us)>; Hana <[Council.Hana@mauicounty.us](mailto:Council.Hana@mauicounty.us)>; Shane M. Sinenci <[Shane.Sinenci@mauicounty.us](mailto:Shane.Sinenci@mauicounty.us)>

**Subject:** RE: A SOLUTION for future Maui Fires

Aloha Steve,

Thank you for the very helpful information.

One of my staff is already looking into an AI solution.....wave of the future.

Chair Lee

---

**From:** [stevegoldsmith77@gmail.com](mailto:stevegoldsmith77@gmail.com) <[stevegoldsmith77@gmail.com](mailto:stevegoldsmith77@gmail.com)>

**Sent:** Friday, September 1, 2023 7:57 PM

**To:** Alice L. Lee <[Alice.Lee@mauicounty.us](mailto:Alice.Lee@mauicounty.us)>; Thomas M. Cook <[Thomas.Cook@mauicounty.us](mailto:Thomas.Cook@mauicounty.us)>; Gabe Johnson <[Gabe.Johnson@mauicounty.us](mailto:Gabe.Johnson@mauicounty.us)>; Tasha A. Kama <[Tasha.Kama@mauicounty.us](mailto:Tasha.Kama@mauicounty.us)>; Tamara A. Paltin <[Tamara.Paltin@mauicounty.us](mailto:Tamara.Paltin@mauicounty.us)>; Keani N. Rawlins <[Keani.Rawlins@mauicounty.us](mailto:Keani.Rawlins@mauicounty.us)>; Nohe M. Uu-Hodgins <[4](mailto:Nohe.Uu-</a></p></div><div data-bbox=)

[Hodgins@mauicounty.us](mailto:Hodgins@mauicounty.us); Yukilei Sugimura <[Yukilei.Sugimura@mauicounty.us](mailto:Yukilei.Sugimura@mauicounty.us)>; Hana <[Council.Hana@mauicounty.us](mailto:Council.Hana@mauicounty.us)>; Shane M. Sinenci <[Shane.Sinenci@mauicounty.us](mailto:Shane.Sinenci@mauicounty.us)>

**Subject:** A SOLUTION for future Maui Fires

Some people who received this message don't often get email from [stevegoldsmith77@gmail.com](mailto:stevegoldsmith77@gmail.com). [Learn why this is important](#)

Maui County Council Members,

I read a great article in the LA Times on 8/24/23 and wrote the author.

“As California fires worsen, can AI come to the rescue?”

<https://www.latimes.com/california/story/2023-08-24/can-ai-fight-wildfires-california-is-counting-on-it>

Her response is below.

PLEASE read the article and her email and then **purchase cameras monitored by AI that can spot wildfires early, BEFORE** the first 911 call!

<https://alertcalifornia.org/>

The Feds are giving \$95 Million to Maui from the Bipartisan Infrastructure Law. Several million dollars should be spent on covering the county with cameras and using the UC San Diego Artificial Intelligence to monitor it.

20<sup>th</sup> Century solution: Have the National Guard watch for fires like they did this week with the high winds.

21<sup>st</sup> Century solution: Cameras monitored by smart AI that can detect fires BEFORE the first 911 call while it is still small.

Mahalo for your consideration and action.

Aloha,  
Steve

Stephen E. Goldsmith  
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808-283-3166 Cell  
[SteveGoldsmith77@gmail.com](mailto:SteveGoldsmith77@gmail.com)

**From:** Smith, Hayley <[hayley.smith@latimes.com](mailto:hayley.smith@latimes.com)>

**Sent:** Friday, September 1, 2023 7:24 AM

**To:** [stevegoldsmith77@gmail.com](mailto:stevegoldsmith77@gmail.com)

**Cc:** Mark Hyde <[markghyde@gmail.com](mailto:markghyde@gmail.com)>

**Subject:** Re: AI Cameras for Maui

Hi Steve,

Thank you for your message. I hope you are doing OK after everything you've been through.

I would recommend reaching out to Alert California, which operates the cameras and is developing the AI in hopes of sharing it with other states and fire agencies. Here is some contact info for Neal Driscoll, the program's director:

<https://ndriscoll.scrippsprofiles.ucsd.edu/>

The program also has a general contact form here: <https://alertcalifornia.org/contact/>

I would hope that Maui Fire is already looking into some of these solutions. However, if you have a contact there, feel free to pass along my article or this Cal Fire press release which has more information about the program: <https://alertcalifornia.org/alertcalifornia-launches-to-provide-essential-tools-to-understand-and-adapt-to-wildfires-and-natural-disasters-in-the-golden-state-2/>

All the best,

Hayley

On Wed, Aug 30, 2023 at 1:03 PM <[stevegoldsmit77@gmail.com](mailto:stevegoldsmit77@gmail.com)> wrote:

Hi Haley,

I live on Maui and can use your help. I read your great August 24<sup>th</sup> article in the LA Times, "As California fires worsen, can AI come to the rescue?" I have lived in Kihei/South Maui for over 20 years and try to push the County into the 21<sup>st</sup> century when I can.

I would like to make Maui Fire aware of the cameras and AI, but first I would love any contact information you have for Cal Fire that Maui Fire can contact to learn more about California's system.

Perhaps Phillip SeLegue, staff chief of fire intelligence with Cal Fire or UCSD contacts or anyone you believe would want to help Maui with information and SOLUTIONS to our continuing high wind fires.

My goal is to make it easy for Maui Fire to research, request funding, and move forward on installing cameras and using AI to monitor fires when they first start.

Feel free to also forward this email to anyone that you think can help me/Maui county on this topic.

Thank you in advance.

Aloha,  
Steve

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808-879-7576 Home  
808-283-3166 Cell  
[SteveGoldsmith77@gmail.com](mailto:SteveGoldsmith77@gmail.com)

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Hayley Smith  
Staff Writer, Metro  
[hayley.smith@latimes.com](mailto:hayley.smith@latimes.com)  
m: (424) 367-9671

## Wildfire Prevention Working Group

---

**From:** Elizabeth Pickett <elizabeth@hawaiiwildfire.org>  
**Sent:** Tuesday, November 14, 2023 1:51 PM  
**To:** Wildfire Prevention Working Group  
**Cc:** Nani Barretto  
**Subject:** Testimony for Wildfire Prevention Working Group Draft Report

You don't often get email from elizabeth@hawaiiwildfire.org. [Learn why this is important](#)

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

The Hawaii Wildfire Management Organization, a 501(c)(3) nonprofit founded in 2000, is Hawaii's hub for wildfire preparedness programs for communities and land managers, as well as wildfire-related research, mitigation, planning, and technical support. We strongly support the findings in the report produced by the wildfire prevention working group and have the following recommendations for actionable legislation moving forward. Some additional information is provided as context and discussion.

### RECOMMENDED ACTIONABLE LEGISLATION:

**1. We recommend changing HRS 132-13.** It is currently limiting some of our fire departments' ability to adequately enforce code violations. It would better serve county fire department enforcement needs to leave the fine amounts up to each county to determine for itself, or to raise it to a much higher amount, such as fines up to \$10k, as the current \$500 max is creating challenges that cascade into the rest of the code enforcement systems.

**2. All new developments need to be designed wildfire-safe from the start, with adequate ingress/egress, firefighting access, ignition-resistant building materials.** Currently, I am aware of only Kauai County moving forward to address this at the county planning department level. It is a huge life and safety concern for residents and firefighters to inherit the risk from unsafe development/design and building materials. Eventually, we need to also figure out how to retrofit unsafely designed communities, too, but requiring wildfire-safe new developments is an important start.

**3. All counties MUST adopt a code that identifies high wildfire-risk areas and establishes specific codes to mitigate wildfire risk in those areas.** While the specifics of these codes are best left to experts on fire behavior and wildfire mitigation best practices, it is essential to mandate that each county, at minimum:

- *Identify areas at high risk of wildfire* (including a map), with flexibility to update over time;
- *Establish specific codes to ensure vegetation and other hazards are managed* to adequately reduce the wildfire risk in those identified areas; and
- *Define what constitutes low-high wildfire risk conditions*, in order to establish a standard that will allow for extending/modifying the 'areas at risk' as needed over time.

**4. Hawaii needs a fully funded system for wildfire-related defensible space inspection and code enforcement that takes place proactively.** This includes funding a whole process for inspection, notices of violation, vendor-based removal of fire hazards when noncompliance is persistent, and a system for recovery fees and fines collection. Some counties have parts of this, some have none, and all are inspected/enforced by complaint only. Most counties have personnel and funding limitations that limit their ability to enforce code. There are a lot of non-wildfire parts of the fire code, but the gap we are addressing here is specifically for wildfire-related hazards, such as hazardous/overgrown vegetation, abandoned cars, and other hazards that contribute to wildfire risk. A primary goal would be for unmanaged, overgrown

parcels to become better managed, especially those with large acreage and a prevalence of overgrown, fire-prone vegetation that may contribute to wildfire spread.

*Please also note that this is only one part of the equation. Tax incentives for active land use/management or increased tax rates for unmanaged lands are an additional approach, and a concurrent recommendation we present, to ensure owners of large lands that remain unmanaged are incentivized and/or held accountable for the fire danger their unmanaged lands may pose to communities, municipal infrastructure, and watershed forests/sensitive natural resources. It is essential that we de-incentivize land banking, and incentivize active land use.*

**5. Hawaii’s preparedness and mitigation programs (including the Firewise Communities program, landowner wildfire education and technical support, and multi-partner wildfire risk reduction planning) need permanent funding.** Without permanent government funding for these critical programs (the only in the state), communities and land managers across Hawaii are vulnerable to ebbs and flows in support for their safety and preparedness education and technical support. Leaving this work up to a nonprofit to self-support subjects them to the ebbs and flows of funding raised through fundraisers and competitive national grant competitions. These programs can be funded is by ensuring DLNR-Division of Forestry and Wildlife receives the funding it is requesting, with funds for these wildfire preparedness programs specified.

Thank you for your assistance with these matters— they are foundational to wildfire preparedness and safety. We appreciate your involvement, commitment, and assistance toward a wildfire-ready and wildfire-resilient Hawaii.

**Note: there is a schedule conflict for the hearings:**

FYI, there is a significant conflict for the date and times for the wildfire-related hearings that may limit how much fire expertise testimony you receive. It is the annual Hawaii Fire Chiefs Association Conference and Business Meeting. HWMO and all of Hawaii’s fire leadership (leadership personnel from county, state, and federal fire agencies, including the State Fire Council) will be in attendance at the conference on Thursday Nov 16- Saturday Nov 18.

Elizabeth Pickett  
Co-Executive Director  
Hawaii Wildfire Management Organization  
65-1279 Kawaihae Rd. Ste 211  
Kamuela, HI 96743  
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Cell (808) 443-8303  
[hawaiiwildfire.org](http://hawaiiwildfire.org)



November 17, 2023

Dear Co-Chairs Ichiyama, Kila, and members of the Wildfire Prevention Working Group,

My name is Alani, I reside in Waikiki and I serve the Hawai'i State Coalition Against Domestic Violence (HSCADV) which addresses the social, political, and economic impacts of domestic violence on individuals, families, and communities. We are a statewide partnership of domestic violence programs and shelters.

On behalf of HSCADV and our 28 member programs statewide, I respectfully submit testimony commenting on the November 1, 2023 Draft Report of the Wildfire Prevention Working Group. We are grateful to the working group and appreciate all of your work to identify the causes of wildfires and preventative action to reduce the risk of wildfires through the state, as well as the short and long-term solutions offered.

However, we are deeply concerned that the impacts and prevention of gender-based violence were not addressed within the report. I respectfully request:

1. The creation of a gender-based violence disaster response and emergency preparedness group;
2. Recognition of the "[2023 U.S. National Plan to End Gender-Based Violence](#)" specifically **Pillar 6: Emergency Preparedness and Crisis Response** to inform the working group and future state response plans

Rationale:

There is a direct link between [disasters and gender-based violence](#). External factors that add stress and financial strain negatively impact survivors and create circumstances where their safety is further compromised. Their environments become more dangerous and isolation increases as support and local services are overwhelmed. **Natural disasters do not cause domestic violence, but the physical, mental, and socioeconomic effects of disaster can escalate abusive tactics.** 1 in 3 women and 1 in 4 men, among gender expansive folks, are



survivors of domestic violence in Hawai'i. According to Hawai'i Department of Health data, Maui county has the highest prevalence of domestic violence in the state at 17.8%<sup>1</sup>.

I'd like to uplift the importance of establishing a response group that addresses the impact of disasters on survivors and the specific needs that survivors and their children face to ensure opportunity for the state to designate an appropriate amount of resources to assist them in the long-term.

Under "Findings 3. Current Challenges to Wildfire Prevention and Response" on page 6, the report states:

*"Most of Hawaii's communities do not yet have well-developed and comprehensive emergency preparedness and disaster response plans. Many of those communities that have Firewise plans have not necessarily integrated those Firewise plans into broader and more holistic emergency preparedness and disaster response plans."*

To this point, our communities are in need of structured approaches to realistic preparedness and implementation plans moving forward. Hawai'i would benefit from pulling from existing resources such as the Biden Administrations [2023 U.S. National Plan to End Gender-Based Violence](#).

Under "Pillar 6: Emergency Preparedness and Crisis Response" the plan addresses the following goals and strategic action items:

1. Address Gender-Based Violence (GBV) and associated risks in federal emergency response and recovery efforts;
2. Update training programs for first responders that address crisis- or disaster-related GBV and trauma-informed care for GBV survivors;
3. Deepend the research base on the links between climate-related disasters and heightened risk for GBV, particularly for historically marginalized and underserved populations.

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<sup>1</sup> Vergara R, Hayes D, Higashi J, Liang S, Kaiwi H, Arakaki K. (2018). "Violence Between Intimate Partners in Hawaii Across the Life Span. Data from BFRSS, PRAMS and YRBS" Honolulu, HI: Hawaii State Department of Health, Family Health Services Division. [https://health.hawaii.gov/fhsd/files/2019/02/IPVFact-Sheet\\_2018\\_FINAL\\_01-29-19-1.pdf](https://health.hawaii.gov/fhsd/files/2019/02/IPVFact-Sheet_2018_FINAL_01-29-19-1.pdf)



HAWAI'I STATE  
**COALITION AGAINST  
DOMESTIC VIOLENCE**

We believe this national plan can be used as a tool to leverage the state's emergency preparedness and crisis response plan, due to the prevalence of GBV it is vital that the state centers the domestic violence survivor community in response plans moving forward.

We urge you to please review the national plan listed above as well as establish a gender-based violence disaster response and emergency preparedness group.

Thank you for your consideration of our recommendations.

Sincerely,

Alani Bagcal, COVID-19 Response Coordinator  
[abagcal@hscadv.org](mailto:abagcal@hscadv.org)



## Wildfire Prevention Working Group

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**From:** Micah-Seth Munekata <mmunekata@ulupono.com>  
**Sent:** Tuesday, November 14, 2023 7:35 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Public Testimony  
**Attachments:** WFPWG Draft Report\_Ulupono Comments\_11-17-23.pdf; Untitled attachment 00003.htm; signature.asc

Aloha -

Please see the attached written Ulupono Initiative comments for the WFPWG Draft Report.

Mahalo,

**Micah Munekata**  
*Director of Government Affairs*

**Ulupono Initiative**  
Direct: 808.544.8967  
999 Bishop St., Suite 1202 | Honolulu, HI 96813  
Connect with us: [Website](#) | [LinkedIn](#) | [Facebook](#) | [Instagram](#)

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Email: [communications@ulupono.com](mailto:communications@ulupono.com)

HOUSE OF REPRESENTATIVES INTERIM WILDFIRE PREVENTION WORKING GROUP  
Friday, November 17, 2023 — 10:00 a.m.

**Ulupono Initiative offers comments on the draft report by the House Interim Wildfire Prevention Working Group (WFPWG).**

Dear Co-Chair Ichiyama, Co-Chair Kila, and Members of the Working Group:

My name is Micah Munekata, and I am the Director of Government Affairs at Ulupono Initiative. We are a Hawai'i-focused impact investment firm that strives to improve the quality of life throughout the islands by helping our communities become more resilient and self-sufficient through locally produced food, renewable energy and clean transportation choices, and better management of freshwater resources.

Ulupono appreciates the time and effort of the WFPWG to compile its draft report for public comment. There are many great recommendations listed in the report, and we hope our comments here can be helpful for the upcoming 2024 State Legislative Session. While Ulupono supports the recommendations made in the draft report, we believe that **local food production and its significance to disaster response and resilience** should be a central theme in the final report. We also believe that the recommendations should include the prioritization of identifying and securing of federal funding that supports wildfire prevention activities.

Local food production not only addresses our long-term food security needs, but also supports wildfire prevention through active land management and ecosystem services. According to the University of Hawai'i Economic Research Organization (UHERO), nearly 40% of agricultural lands are considered fallow and can lead to "unmanaged grassland fuels and absence of boots on the ground to detect and respond to fire."<sup>1</sup> Active land management becomes an economic opportunity for the state while also promoting local agricultural production, an effort touted by both the Legislature and the general public. In an October 2023 piece titled "Reducing fire risk and restoring value to fallow agricultural lands," UHERO mentions:

- Reducing the costs of land management and locally produced food can and should be coupled with large-scale fire prevention costs.
- This can be done by incentivizing active land management, such as by farmers and ranchers, to provide upkeep and maintain agricultural lands. For example, the State

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<sup>1</sup> <https://uhero.hawaii.edu/reducing-fire-risk-and-restoring-value-to-fallow-agricultural-lands/>

should consider expansion of favorable lease rates and payment for fire prevention services to support our local food producers.

- With expanded agricultural production on once fallow lands, and fire risks reduced as a result, farmers and ranchers can support Hawai'i's economy.

Hawai'i has committed to doubling local food production by 2030. It is extremely important that we as a state ensure that agricultural lands remain available for agricultural production. This report may inadvertently present potential challenges to this sustainability goal by providing incentives of the development of inactive agricultural land.<sup>2</sup> In order to ensure our previous commitments, while also tackling wildfire risks, the state should look to actively manage these lands with local farmers and ranchers by intentionally prioritizing incentives for local producers in the upcoming 2024 legislative session.

We must not forget the importance of local food producers across our state and the vital role they play when supply disruptions occur or natural disasters strike. In addition, our farmers and ranchers provide fuel (grass) reduction and land management, which increases Hawai'i's resilience to wildfires. These hard-working folks continue to answer the call during tough times, and we should seek to develop and support them with consistent funding and opportunities.

Regarding federal funding programs, it is essential that State resources and capacity are in place to ensure Hawai'i is able to secure significant federal dollars that are available now. After the Lahaina wildfire, UluPono researched federal programs/grants that could fund mid-term and long-term wildfire prevention strategies, and we identified the USDA Forest Service's Community Wildfire Defense Grant (CWDG) as a very promising funding option for Hawai'i agencies and organizations. The CWDG program is new and received \$1 billion in funding from the Infrastructure Investment and Jobs Act. In the program's first year, a total of \$200 million in grant funding was released. Projects in California projects received a total of about \$93 million in CWDG funding, while Hawai'i projects received only about \$400,000. We believe Hawai'i can and should be more proactive in going after federal funding, especially when lives are at stake.

We hope that the WFPWG final report can reflect this perspective by recommending incentives for local food production in the upcoming legislative session.

Thank you for the opportunity to submit our comments.

Respectfully,

Micah Munekata  
Director of Government Affairs

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<sup>2</sup> Wildfire Prevention Working Group Draft Report, November 1, 2023. Recommendation 2 on p. 8, "Additional resources, incentives, and policies to encourage mitigation actions, especially where land use is changing (for example, developments on former or inactive agricultural land)."

## Wildfire Prevention Working Group

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**From:** Cindy McCaffrey <cindym@gmail.com>  
**Sent:** Wednesday, November 15, 2023 2:08 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Inclusion of Emergency Evacuation Routes in Lahaina Wildfire Relief

You don't often get email from cindym@gmail.com. [Learn why this is important](#)

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We are writing in support of prioritizing the West Maui Greenway as an important emergency evacuation route, per Saman Dias' written testimony, below.

Thank you,  
Mick & Cindy McCaffrey  
Kihei, HI  
808 891 0674

Nov 13, 2023

Subject: Testimony - Inclusion of Emergency Evacuation Routes, with Emphasis on Cane Haul Roads, in Lahaina Wildfire Relief

WILDFIRE PREVENTION WORKING GROUP  
Rep. Linda Ichiyama, Co-Chair  
Rep. Darius K. Kila, Co-Chair  
Rep. Terez Amato Rep. Rose Martinez  
Rep. Cory M. Chun Rep. Amy A. Perruso  
Rep. Sonny Ganaden Rep. Mahina Poepoe  
Rep. Cedric Asuega Gates Rep. Jackson D. Sayama  
Rep. Natalia Hussey-Burdick Rep. David A. Tarnas  
Rep. Kirstin Kahaloa Rep. Chris Todd  
Rep. Lisa Marten Rep. Lauren Matsumoto

Subject: Testimony - Inclusion of Emergency Evacuation Routes, with Emphasis on Cane Haul Roads, in Lahaina Wildfire Relief

Honorable House of Representatives,

I trust this testimony reaches you as part of the dedicated individuals working on the Lahaina Wildfire Relief efforts. My name is Saman Dias. I am Chair of Maui Bicycling League and engaged member of the Lahaina community. Having thoroughly reviewed the draft reports released by the Lahaina Wildfire Relief Six House Interim Working Groups, I wish to draw attention to a critical aspect that requires inclusion - the incorporation of designated emergency evacuation routes, with a specific emphasis on utilizing cane haul roads.

**Critical Importance:** The recent Lahaina fire underscores the critical importance of having designated evacuation routes in place. I strongly urge the working groups to prioritize recommendations for the establishment of these routes, taking into account the unique advantages offered by existing cane haul roads.

**Utilization of Cane Haul Roads:** Cane haul roads present a valuable and existing infrastructure that can serve

as efficient emergency evacuation routes. These roads are well-established and, if properly maintained and unlocked, could significantly enhance the community's ability to evacuate safely during emergencies.

Existing West Maui Greenway Plan: I draw your attention to the existing West Maui Greenway (WMG) plan, specifically page 20 of the master plan, which recommends the use of the greenway as an emergency evacuation route. Given Lahaina's geographical positioning and limited transportation options, having a comprehensive plan for evacuation is paramount to the safety of our community.

Unique Opportunity for Multi-Use Trail Development: This moment presents a unique opportunity to build the West Maui Greenway as a multi-use trail with key benefits focused on transportation and emergency evacuation. By integrating these elements into the greenway's design, we not only enhance community safety but also contribute to the fight against climate change and the creation of healthier communities. New Funding Sources and Resources: The implementation of the West Maui Greenway as a multi-use trail aligns with current priorities and presents an opportune time to explore new funding sources and resources.

This forward-thinking approach could attract support from various sectors interested in promoting sustainable and resilient community development.

Utilizing Army Corp of Eng Support: I recommend exploring the possibility of leveraging support from the Army Corps of Engineers to aid in the construction of the West Maui Greenway. Their expertise and resources could significantly contribute to the successful realization of this project.

Urgency of Action: Emphasize the urgency of immediate action in implementing these evacuation measures. The recent tragedy highlights the need for a proactive approach to prevent and mitigate the impact of future disasters.

Community Awareness: Recommend strategies for raising community awareness about the designated evacuation routes, specifically highlighting the use of cane haul roads and the existing WMG plan. A well-informed community is better equipped to respond effectively during emergencies.

Collaboration with Local Authorities and Advocates: I strongly recommend fostering collaboration not only with local authorities, including the Maui County Council, but also with community advocates deeply invested in the safety and well-being of Lahaina. Engaging advocates will bring diverse perspectives and invaluable insights to the table, ensuring that the proposed evacuation routes, especially those utilizing cane haul roads and aligned with the West Maui Greenway plan, truly meet the specific needs of our community. This inclusive approach will foster a sense of shared ownership and commitment, enhancing the likelihood of successful implementation.

I firmly believe that incorporating these recommendations into the final Lahaina Wildfire Relief efforts, with a focus on utilizing cane haul roads and leveraging the existing WMG plan, will significantly contribute to the safety and resilience of our community.

Thank you for your dedicated efforts in addressing the various needs arising from the Lahaina wildfire. I look forward to witnessing the positive impact of our collective endeavors.

Sincerely,

Saman Dias  
Chair Maui Bicycling League

808-209-2542  
[maui@hbl.org](mailto:maui@hbl.org)

[www.mauibike.org](http://www.mauibike.org)

<https://www.westmauigreenway.org>

## Wildfire Prevention Working Group

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**From:** Tristin Manuel <blacktahoe711@gmail.com>  
**Sent:** Wednesday, November 15, 2023 2:59 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** FIRE PREVENTION MEASURES FOR PRIVATE LANDOWNERS

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Aloha hoaloha,

O wau Tristin, o kou oihana o Maoli Farms LLC no Kailua, Oahu e na Kukaniloko, Oahu. No Kailua mai au.

Fire prevention has been one of those things that didn't seem to have any urgency, Even after the 2018 Maui Fire.....what about now?!

A lot of focus is on water rights, WHICH I 100% support, however, for RIGHT NOW, there are native plants that DO NOT NEED irrigation / water to grow, and makes an exceptional fire retardant groundcover. Aweoweo, naio papa, pohinahina, ilima, and others were tested in Maui by Susan Cordell, a research ecologist with the US Forest Service and director of the Pacific Fire Exchange. Aweoweo & Naio papa was the BEST FIRE RETARDANT, rated the best in her 2018 study

We flew to Maui, in Aug of 2022 just for the purpose of connecting with native groups, nurseries, farmers, and other landowners who want to use native plants and / or fire retardant native plants as a "green strips". Green strips are strategic planting of natives/or combination there of, in rows along borders or wind facing locations, which can help slow the spread and/or prevent wildfires. We use native plants that are drought tolerant & require little to NO maintenance. Just plant & let it go. Easy kine tings.

I strongly believe that a law must be passed, requiring vacant lands(private lands) located in drought/fire prone areas have an active fire prevention plan and maintain measures throughout ownership, if the land is going to be vacant and/or unused and have no plans for development within a period of 5 years they must plant trees/groundcover. If there is no "development plans" in progress, they must plant native groundcover, a windbreaker tree row, and maintain a firebreak at all of their boundary boarders.

If the law to require fire prevention measures is passed here are some offering suggestions to private landowners as incentives, (food for thought), and some potential benefits (economic, cultural & social) for surrounding communities.

1) USDA already offers FREE to low cost fire prevention planning, subsidized tree purchases, and reimbursement of maintenance. Provide a streamlined service for large land owners, making the process quicker for them, offer recommendation expeditious review, etc.

2) provide similar Fire Prevention programs at a state level, maybe provide tax Incentives for planting natives and implementing green strips.

3) MANY ORGANIZATIONS, such as ourselves, would be willing to be of service, such as providing plans, plants and could host a safe community planting day for FREE, or native seed bombing to establish fire retardant groundcover which prevents ignition. Create a hub, simple telephone listing of available organizations for these landowners to connect with.

I'm on Oahu, and working directly with the Waianae community. It's important to choose organizations that are in the same Moku as the vacant lands.

Offer incentives if the landowner assigns a Steward.

Also you could offer incentives to the organizations for helping. Since Maui fire, over 8000 people reached out on IG asking to help with replanting, and the residents have seeds!!!! There was an article stating SHORTAGE OF NATIVE SEEDS SPARKS NEW FEDERAL CONTINGENCY PLAN, that's BS. The residents of Maui have seeds and want to donate them. So i helped facilitate small seeds banks across maui & found people who will host a seed bank, and/or forwarded them to MBG , mehea and other groups actively planting.

It would be nice , but not required, if these planting organizations be compensated, but honestly simple things like to have access to city woodchips lol would be fricken awesome! Or tax incentives for , for-profits would be a nice gesture on behalf of the state. And provide resources for kua replanting movements. Anyway that's another story. K aloha!

Tris Manuel  
@MAOLIFARMS





# HAWAII STATE ENERGY OFFICE STATE OF HAWAII

JOSH GREEN, M.D.  
GOVERNOR

SYLVIA LUKE  
LT. GOVERNOR

MARK B. GLICK  
CHIEF ENERGY OFFICER

235 South Beretania Street, 5th Floor, Honolulu, Hawaii 96813  
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Telephone:  
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(808) 587-3807  
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## Testimony of **MARK B. GLICK, Chief Energy Officer**

### before the **HOUSE WILDFIRE PREVENTION WORKING GROUP**

Friday, November 17, 2023  
10:00 AM  
State Capitol, Conference Room 325 and Videoconference

### With COMMENTS on **HOUSE WILDFIRE PREVENTION WORKING GROUP DRAFT REPORT**

Co-Chairs Ichiyama and Kila and Members of the Committee, the Hawaii State Energy Office (HSEO) commends the evaluation provided by the Wildfire Prevention Working Group to improve community resilience to wildfires under a compressed timeline and appreciates the meaningful recommendations put forth. In particular, the synergy between the Wildfire Prevention Working Group's recommendations and ongoing efforts within the energy sector is of great significance. The alignment of these efforts speaks to the cohesive approach being taken to address wildfire risks comprehensively and reflects a unified commitment to safeguarding communities.

Starting in mid-2022, HSEO undertook a project to understand energy sector risk from various threats and hazards and formulated a mitigation implementation plan for O'ahu under a FEMA Hazard Mitigation Advanced Assistance Grant. The study's risk assessment determined wildfire to be the second largest total risk to the energy sector on O'ahu. The project cataloged the status of present mitigation activities related to wildfire and other hazards and prioritized future mitigation measures to further reduce the risk to energy infrastructure on O'ahu. The Resilience Working Group Report for Integrated Grid Planning from 2020 also focused on the increasing threat of wildfire, especially for O'ahu and Maui. The following comments highlight some of the overlap of the reports and additional points to consider.

## 1. Reducing Ignitions

HSEO produced a recommendation for energy asset owners to evaluate wildfire protection needs at specific assets, including monitoring equipment to support power safety shut offs. The WFPWG recommendation to develop “best practices regarding downed power lines and electrical power supplies during times of possible ignition,” which builds on HSEO’s call for the technical ability for shut-offs to prevent ignition, additionally indicates that a process should be established, with utilities and stakeholder collaboration, to make preventative shut-off decisions weighing the pros and cons.

As the WFPWG recommends, underground transmission and distribution lines reduce the potential for lines to ignite a fire or cause health and safety issues. They additionally decrease the potential for damage and service disruption due to wildfire impacts and other hazards. HECO is currently operating a program to underground transmission and distribution lines, and HSEO’s implementation plan continues to seek funding and work with utilities and the PUC to determine which lines need to be undergrounded, with a focus on natural hazard risk reduction, equity for disadvantaged communities, and cost effectiveness.

To complement the strategic undergrounding identified in the report, other technologies can also mitigate the risks posed by downed power lines, such as covered conductors. Modern monitoring, sensitive ground fault detection and line-to-ground fault neutralizer equipment can also be deployed to rapidly identify fault locations, eliminate the power available to cause ignition, and enable rapid repairs. These technologies can reduce the overall cost of wildfire mitigation and could be critical safety investments where undergrounding is technically infeasible or cost prohibitive. HSEO’s Implementation Plan includes a continued pursuit of installing this equipment and is a part of HECO’s Integrated Grid Plan.

## 2. Reducing Fuel Loads

The WFPWG recommendations echo a focus on defensible space practices and vegetation management that was highlighted in HSEO’s Implementation Plan. These

practices can potentially reduce exposure and physical damage to energy infrastructure expected from wildfires, especially those in more remote areas. The current practices should be evaluated, and Hawaii should consider establishing higher standards to lower risk. HSEO will look for funding for defensible space studies and implementation projects as part of the 5-year plan.

### 3. Community Engagement

There is significant value in more granular wildfire protection plans, down to the community or infrastructure site level, and community engagement in these planning efforts is important for success.

HSEO's plan intends to leverage an existing program, the HSEO Wayfinders Program, to engage community organizations, Community Emergency Response Team Training (CERT), and utilities on building community capacity and understanding of grid resilience among other topics. HSEO recognizes the importance of marketing and providing outreach to motivate customer interest, investment, and knowledge of wildfire risks and possible mitigation options to assure energy supply during a wildfire event.

### 4. Protecting Communities

The WFPWG's recommendations appear to focus on the imminent life and safety risk of wildfire to people and homes, which certainly is a primary focus. But HSEO would note that protecting communities should include an additional focus on the continuation of critical lifeline services like police, fire, medical facilities, etc. Most of these critical lifeline services depend on energy, primarily electricity, to provide service and the dependency linkages were a focus of HSEO's Energy Hazard Mitigation study.

Protecting energy infrastructure to prevent or reduce damage by hardening infrastructure like reinforcing or replacing poles, towers, conductors, and associated hardware was a high priority measure identified in the study. The HSEO Implementation Plan also honed in on multiple ways to absorb impacts when wildfires have damaged energy infrastructure, allowing the energy system to provide some level of service despite

the damage. Examples include engaging the critical lifeline assets with no or inadequate back-up power capabilities to pursue grant funding to implement energy redundancy, microgrid or grid sectionalization projects, and installation of smart technologies like smart switches, fuses, and reclosers to reduce the extent of outages and improve restoration times.

For another specific example, the HSEO study found that there was high wildfire risk around the Campbell Industrial Park where a large quantity of critical energy infrastructure resides in close proximity. The implementation plan includes conducting a site-specific vulnerability study of the area to identify mitigation measures, evacuation options, and potential redundancies and specific protections that address multiple hazards.

#### 5. Wildfire Suppression and 6. Post-Fire Response

HSEO commends the Working Group's efforts on formulating recommendations for wildfire suppression and post-fire response best practices and welcomes any input on how the energy sector may actively contribute to and bolster these efforts.

#### 7. Wildfire Research

HSEO concurs that more analysis needs to be done for Hawaii to understand "the complex impacts of climate change on wildfire regimes, especially the risks of compounding hazards associated with extreme weather events." The implementation plan mirrors this sentiment with a measure to monitor new climate change modeling to understand future risks to the energy system scheduled to be coordinated in the first few years of the plan.

Another important finding and recommendation from the HSEO study was that resiliency metrics and performance criteria should be developed, underway through the Energy and Equity Justice Docket and the Performance-Based Regulation Framework, to make determinations on the cost-effectiveness of resiliency projects. This will help set-

up a standardized structure for utilities proposing wildfire mitigation measures to analyze benefits vs. costs.

HSEO recognizes the collaborative spirit embodied in the recommendations and is enthusiastic about the potential for synergies that can be leveraged to maximize the impact of wildfire prevention measures. As we move forward, HSEO is dedicated to supporting the implementation of these recommendations and working in tandem with the Wildfire Prevention Working Group and other stakeholders. By pooling collective expertise and resources, we can build upon the momentum generated by these recommendations and make significant strides in fortifying our communities against the threat of wildfires.

Thank you for the opportunity to testify.



**November 15, 2023**

**Aloha Co-Chairs Ichiyama, Kila, and members of the Wildfire Prevention Working Group,**

My name is Renaé Hamilton-Cambeilh, I reside in Kapa'a and I am the Executive Director of YWCA Kaua'i. YWCA of Kaua'i, established in 1921, is dedicated to eliminating racism, empowering women, and fostering peace, justice, freedom, and dignity for all. We serve as the primary provider of domestic violence and sexual assault services on Kaua'i. Our multifaceted approach includes crisis intervention, family violence shelter, clinical services, offender services, financial empowerment, prevention education and community outreach, and racial and social justice advocacy. Over the last 100+ years, YWCA Kaua'i has continuously adapted to meet the evolving needs of our community.

I appreciate your dedicated work on the Draft Report of the Wildfire Prevention Working Group, dated November 1, 2023. This is a crucial step towards safeguarding Hawai'i's residents from environmental crises. The report commendably acknowledges the value of local and Indigenous knowledge in both preventing and responding to wildfires, emphasizing the inherent connection between social and environmental justice.

However, I respectfully wish to draw attention to a significant oversight within the report—in spite of its interconnectivity with disaster preparedness, this report makes no mention of Gender-Based Violence (GBV). Thus, I propose the following suggestions:

1. Expand the working group's objectives to explicitly recognize the way in which disasters increase the risk for and negative impacts of GBV, aligning with [Pillar 6 of the 2023 U.S. National Plan to Address Gender-Based Violence](#), which focuses on Emergency Preparedness and Crisis Response.
2. *If beyond the current scope of this working group*, it may be necessary to establish an additional working group that is dedicated to gender-based violence disaster response and emergency preparedness.

The link between gender-based violence and our changing environment is undeniable. As we confront climate change, it is crucial to consider those most vulnerable. The risk of GBV is heightened during emergencies, including those arising from natural disasters, public health crises, or climate change ([Camey et al., 2020](#)). Connecting the efforts to end GBV, advocate for gender equality, and protect the environment can create positive synergies that contribute to ensuring a secure, sustainable, and equitable future.

Mahalo nui loa for your commitment to reduce the risk of wildfires in Hawai'i. I trust you will consider these recommendations for the benefit of all Hawai'i residents, particularly survivors of GBV.

Sincerely,

A handwritten signature in blue ink, appearing to read "Renaé Hamilton-Cambeilh".

Renaé Hamilton-Cambeilh  
Executive Director, YWCA of Kaua'i

## Wildfire Prevention Working Group

---

**From:** Gordon Firestein <gfirestein@seapact.com>  
**Sent:** Wednesday, November 15, 2023 6:13 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** PUBLIC TESTIMONY

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Aloha, Members of the Wildfire Prevention Working Group,

My name is Gordon Firestein and I am co-chair of the Launiupoko Firewise Committee. Launiupoko is the neighborhood just south of Lahaina. The following comments are my own and do not necessarily reflect the positions of the Firewise program or the Hawaii Wildfire Management Organization that oversees it.

My suggestions pertain to some of the recommendations listed in your Draft Report of November 1, 2023. I fully support ALL of the recommendations listed, but would like to focus on selected ones to emphasize their relevance to and urgency for West Maui.

1. "Development of best practices regarding downed power lines and electrical power supplies during times of possible ignition."

HECO recently released its Wildfire Safety Strategy (<https://www.hawaiianelectric.com/hawaiian-electric-advances-wildfire-safety-strategy-expands-grid-resilience-work>). It lists specific actions HECO would take in each of three phases. Only after all three phases are completed, presumably after an unspecified number of years, would HECO consider a Public Safety Power Shutoff program. The last line of this strategy states "As the phases of Hawaiian Electric's Wildfire Safety Strategy are successfully executed, PSPS could become the tool of last resort, not the first option."

Given the obvious danger of power lines located in extremely windy, densely vegetated areas, I don't believe we can wait years for HECO to adopt a PSPS program if it chooses to do so at all. It seems apparent that HECO will not adopt such a program quickly, or voluntarily. I would urge you to **consider legislation, if this is possible, to incentivize or if necessary to compel HECO to de-energize lines before they start the next fire.**

2. "Additional resources, incentives, and policies to encourage mitigation actions, especially where land use is changing (for example development on former or inactive agricultural land)."

Two points here. First, with respect to large landowners: this recommendation is critically important. Large landowners in our area have not done nearly enough, if they've done anything at all, to reduce the vegetative fuels on their properties. If incentives can be found to encourage them to do so, that would be preferred. But if not, then **large landowners must be compelled to reduce the hazardous vegetation that threatens nearby communities.** I would encourage you to adopt legislation that confronts this issue head on. The stakes are obviously just too high to do otherwise.

Second, **we urgently need investment in large-scale green-waste processing facilities** located within easy reach of property owners and landscape contractors. If it is a priority to have property owners reduce their vegetation, they need a place nearby to take it at zero-to-minimal cost to them. The compost produced at these facilities should be made available to the public for purchase. This is an essential part of an integrated program to deal with reducing fuel loads.

3. "New requirements to promote the creation and maintenance of "defensible space" by both public and private property owners, with legal consequences for violations."

**There are successful models on the mainland, especially in California, for requiring defensible space in high risk zones.** No need to re-invent the wheel. I would encourage you to study the existing models, pick the best one, modify it as needed for our unique circumstances, and implement it without delay. Enforcement is essential, and should include a provision for responsible authorities to arrange for mitigation work to be done at the owner's expense should the owner fail to do the work within the statutory amount of time, with unpaid costs added to the owner's property tax bill.

4. "Encourage Firewise Communities."

Yes, absolutely! I have been a leader of our Firewise Community since its inception in 2016, and have seen significant improvements in our neighborhood over that time which I believe are at least partly a direct result of that program. I would urge you to **consider incentivizing property owners to get a Home Fire Risk Assessment**, a benefit of the Firewise program. The assessment engages residents one-on-one with detailed recommendations for improving their property's ability to withstand a wildfire.

5. "Incorporate fire hazard mitigation standards for community planning, design and engineering..."

Every existing community could benefit from becoming Firewise. **Firewise principles should be required in the planning, design and engineering of every new development.** I hope the new Lahaina will be rebuilt from the start with Firewise principles in mind.

6. "Disincentivize land banking through increased taxation of lands not being used for public purposes..."

Yes, absolutely, but the flip side is important too. I would encourage you to consider ways to **incentivize landowners to make their property available to small-scale regenerative farmers.** Such farms should have priority access to the limited water resources in the area.

7. "Expand the network of HEMA sirens and upgrade capacity with cameras..."

In Launiupoko, we have created the Launiupoko Firespotting Network of video cameras with pan-tilt-zoom capability overlooking the landscape and streaming to the web 24/7 so that residents can have better situational awareness of fires. It's a prototype based on the AlertWildfire system in place in California. **Alertwildfire.org currently has over 700 cameras installed in 6 western states. I urge you to use the means available to you to make Hawaii the 7th state with this incredibly valuable state-of-the-art system.**

8. "Increase response capacity, especially by state personnel."

**Please consider authorizing the creation of volunteer fire departments in areas where they do not currently exist.** Our neighborhood, for example, is about 6 miles from the Lahaina Fire Station. A new station, funded by private donations, is proposed for Olowalu, but that station would be about 4 miles away. Volunteer firefighters in our neighborhood with the appropriate training and a minimum of equipment (e.g. a water tanker) could offer a much quicker response to a fire that could potentially keep it from getting out of control on a windy day before the professional firefighters arrive and take over.

Finally, I would like to call to your attention a report prepared by the Maui County Cost of Government Commission dated July 2021 entitled "**Wildfire Prevention and Cost Recovery on Maui.**" It covers a lot of the same territory as your own draft report, and makes a set of recommendations specific to Maui but certainly applicable to the entire state. <https://www.mauicounty.gov/DocumentCenter/View/129493/Report-on-Wildfire-Prevention--Cost-Recovery-on-Maui--Part-1-Report--Exhibits-A-B-33-MB> I don't know if the report's recommendations were acted upon. What has happened since it was published poignantly underscores the importance of your own recommendations becoming law before there is a tragic need for another commission or working group on this topic.

Thank you for considering these issues and for the work you are doing to make all of us safer.

Gordon Firestein



186 Paia Pohaku Pl.  
LAHAINA HI 96761

## Wildfire Prevention Working Group

---

**From:** Jerome Kellner <jerome.kellner@gmail.com>  
**Sent:** Wednesday, November 15, 2023 6:23 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** I support West Maui Greenway

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I am in favor of the West Maui Greenway. Maui needs and deserves transportation corridors that don't include motor vehicles -- we have far too many cars, trucks, and buses already and it is getting worse every year. Please give the people of Maui more greenways where families and individuals can safely walk, ride bikes and otherwise enjoy the outdoors without motor vehicles.

Jerome Kellner  
Kahului

## Wildfire Prevention Working Group

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**From:** Richard m <rmcginty100@gmail.com>  
**Sent:** Wednesday, November 15, 2023 6:57 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** BA HPU Environmental Management

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#1). Bury all the power lines! Hawaii is a State that is 50+ years behind most other states. I am originally from New York and remember every time there was "Roadwork" the HWY Department joined The Civil Engineers in digging trenches on either side of roads to bury all the power lines. It's well worth it because work is being done on the roads anyway!

#2) Invasive Albizia Trees are the perfect dried "TINDER BOX" for Massive amounts of fuel to any fire that erupts on Oahu! Those Trees are literally EVERYWHERE! Remove them! Use Incarcerated Labor with work incentives & hire a separate Invasive Species Removal Army to finally rid Oahu of most of these Fire Hazardous Tinder Boxes!

#3) Have Fire & Local Law Enforcement train in situations where Power Lines are DOWN blocking exits for residents and figure out a way to allow them to exit the area ... "WITHOUT SENDING THEM INTO "HARMS WAY" INTO THE WILD FIRE..."I was just following orders" ...IS NO EXCUSE FOR SENDING RESIDENTS BACK INTO A WILDFIRE AND CERTAIN DEATH!!!"

sincerely, Richard McGinty

Environmental BA HPU 2007

## Wildfire Prevention Working Group

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**From:** Ronald Mahtesian <r\_mahtesian@hotmail.com>  
**Sent:** Wednesday, November 15, 2023 8:09 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Comments on November 1, 2023 WFPWG Draft Report

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Thank you for the opportunity to comment on the Wildfire Prevention Working Group (WFPWG) Draft Report. The Report was very informative regarding the current challenges to wildfire prevention in Hawaii. Given the problems that Hawaii currently faces, I agree with the Recommendations articulated in the Report, and I agree that “**bold action**” is required. To that end, I make the following additional recommendations:

1. Increase criminal penalties for all degrees of arson to a felony with mandatory jail time and not just during red flag warnings.
2. Enact legislation to prohibit consumer fireworks. Fireworks should be allowed only by authorized state, county, or municipal employees. A permit should be required, and fireworks should only be allowed to be ignited on offshore barges over water.
3. Enact legislation to prohibit all campfires, open fires, and barbeques during red flag warnings.
4. Enact legislation to require the creation and maintenance of “defensible space” for both public and private property owners. These laws should include the requirement that all burnable plant materials be promptly removed and that all trees and shrubs not exceed the height of a homeowner’s house. There is no need for any trees or shrubs to exceed the height of a homeowner’s house in order to provide both shade and privacy. Allowing homeowners to let their trees and shrubs grow above their roof lines puts neighboring properties at risk for the spread of fires. In addition, all plants, shrubs, and trees that have medium to high flammability ratings should be prohibited in residential communities. Compliance with these laws should be done by state, city, or county fire inspectors. If a property owner does not comply with these laws, the state, city, or county can hire a contractor to do the work and then put a lien on the property to recoup the costs.
5. Fire researchers have documented that embers can get caught on wood-shingled roofs and siding and fall into gutters and even get blown into attic vents igniting the building from the inside. Enact legislation to require new homes and buildings to use fire resistant materials including roofs, siding, windows, and ventilation. Require all attic and other vents to be protected by fine mesh screen covers.
6. Enact legislation to require the installation of a new siren network that can broadcast voice messages in all communities. The sirens can play a pre-recorded message to tell residents about the kind of threat, such as wildfire, volcano, tsumani, storms, etc. and then instruct residents to tune into the radio for more information.
7. Require authorities to alert residents of any threats including wildfires, volcano, tsunami, storms, etc. via cell phones. Back-up generators for cell phone towers and other communication systems should be mandatory.

8. Enact legislation to give tax breaks to homeowners and communities who meet firewise standards.
9. Communities in this State cannot wait for these laws to be enacted. In the meantime, the State through its Fire Authorities should strongly encourage communities to adopt the Recommendations in the Draft Report and the above-suggested additional recommendations. Communities with Homeowners Associations should be strongly encouraged to amend their Covenants, Conditions, and Restrictions (CC&Rs) to adopt these Recommendations.

Ronald G. Mahtesian

Waikoloa, HI

## Wildfire Prevention Working Group

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**From:** Constantine Mittendorf <cmittendorf@gmail.com>  
**Sent:** Thursday, November 16, 2023 1:01 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** Testimony - Inclusion of Emergency Evacuation Routes, with Emphasis on Cane Haul Roads, in Lahaina Wildfire Relief

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### WILDFIRE PREVENTION WORKING GROUP

Subject: Testimony - Inclusion of Emergency Evacuation Routes, with Emphasis on Cane Haul Roads, in Lahaina Wildfire Relief

To whom it may concern,

Mahalo for working on the Lahaina Wildfire Relief efforts. My name is Connie Mittendorf. I am a member of the Lahaina community. I reviewed the draft reports released by the Lahaina Wildfire Relief Six House Interim Working Groups, I wish to draw attention to a critical aspect that requires inclusion - the incorporation of designated emergency evacuation routes, with a emphasis on utilizing cane haul roads.

I strongly urge the working groups to prioritize establishment of these routes, taking into account the unique advantages offered by existing cane haul roads. They present a valuable and existing infrastructure that can serve as efficient emergency evacuation routes. These roads are well-established and, if properly maintained and unlocked for limited bicycle and foot traffic, could significantly enhance the community's ability to evacuate safely during emergencies.

The existing West Maui Greenway (WMG) plan also recommends the use of the greenway as an emergency evacuation route. It's very important for the safety of our community.

Now we have THE opportunity to build a West Maui Greenway as a multi-use trail with benefits focused on transportation and emergency evacuation. By integrating these elements into the greenway's design, we not only enhance community safety but also contribute to the fight against climate change and the creation of healthier communities.

The implementation of the West Maui Greenway as a multi-use trail aligns with current priorities and presents an opportune time to explore new funding sources and resources. This forward-thinking approach could attract support from various sectors interested in promoting sustainable and resilient community development.

Please also consider leveraging support from the Army Corps of Engineers to aid in the construction of the West Maui Greenway. Their expertise and resources could significantly contribute to the successful realization of this project.

Immediate action is the right path.

I strongly believe that incorporating these recommendations into the final Lahaina Wildfire Relief efforts, with a focus on utilizing cane haul roads and implementing the WMG plan, will significantly contribute to the safety and well being of our community.

Mahalo for your sincere help with the various needs regarding the Lahaina wildfire. Again, please prioritize the West Maui Greenway and cane haul roads.

## Wildfire Prevention Working Group

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**From:** Laurie Makaneole <makaneole@yahoo.com>  
**Sent:** Thursday, November 16, 2023 5:55 AM  
**To:** Wildfire Prevention Working Group  
**Cc:** Rep. Dee Morikawa; Rep. Luke A. Evslin; Rep. Nadine K. Nakamura; Rep. Darius K. Kila; Rep. Linda Ichiyama  
**Subject:** State of Hawaii legislators need to "create a comprehensive property assessment program to identify poorly maintained and fire-prone properties and directing corrective measures"...

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**State of Hawaii legislators need to "create a comprehensive property assessment program to identify poorly maintained and fire-prone properties and directing corrective measures"...**

**Kauai has multiple reports identifying High Risk Fire Zones and these same studies document that these areas need to have "Vegetation Management" to decrease wildfire risks-but WE NEED SPECIFIC CODES/PROTOCOLS HOW TO DO THIS FOR IDENTIFIED HIGH RISK LARGE LAND OWNERS!!!!!!**

**Poipu Kauai area was designated in the 2016 Community Wildfire Protection Plan as a "High Risk Wildfire area" due to "Vegetation Hazard for Developed Areas". It is also considered a "Wildland-Urban Interface" [WUI] area where acres of "wildland" are located next to houses and hotels. Reports also state the unmanaged vegetation in Poipu has "Invasive grasses such as guinea and fountain grass that grow rapidly when un-managed and can dry out very quickly, creating a major fire Hazard". This area needs landowners to "Weed them often and consider replanting with low-lying, drought-tolerant, native ground cover."**

**The 2016 CWPP and the 2018-2019 Vegetation Management Kauai Report clearly states Poipu is high risk for wildfires and states it is due to unmanaged vegetation, it presents basic information regarding what needs to be done for prevention. However at this time the Kauai Fire Dept. Prevention Bureau state- they have no specific codes or protocols to work with Grove Farm or other large landowners to address this identified extreme fire hazard.**

**Please work with Hawaii Legislators / Kauai Fire Dept / NFPA / Hawaii Wildfire Management Organization and others to develop specific codes and protocols regarding- what needs to occur to decrease wildfire risks on large landowners acres in High Risk Wildfire areas and how to get this done.**

**Poipu Kauai, Recent FIRES- [ information from the Garden Island ]**

9/20/2009-  
100 acres brush fire -Poipu -East of Ala Kinoiki Road - -Grove Farm land

8/17/2011-  
50 acre brush fire-Poipu, Joe Grace house burned down at Weliweli track -



fire came from area- East of Ala Kinoiki Road , Grove Farm Land

3/31/2015-

100 acres brush fire Poipu- started west of CJM Ranch- and East of Ala Kinoiki Road Poipu - Grove Farm land-

9/24/2017-

215 acres brush fire in Poipu- started East of Ala Kinoiki road - Grove Farm land

6/11/2019-

500 Acre brush fire- Poipu-East of Ala Kinoiki road- Grove Farm land

Submitted by Laurie Makaneole

## Wildfire Prevention Working Group

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**From:** Roann Vioria <roannqv@gmail.com>  
**Sent:** Thursday, November 16, 2023 6:32 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** West Maui Greenway Testimony - In Support

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Hello,

I am writing to share a firsthand account of the indispensable role that opening old cane haul roads played during the Lahaina wildfires, emphasizing the urgent need to maintain and enhance these routes as crucial elements in West Maui Greenway's fire prevention and emergency evacuation strategy.

Having heard accounts of various individuals and families from Lahaina, they can attest to the **life-saving impact** of utilizing the old cane haul roads as effective evacuation routes. These roads proved instrumental in facilitating the swift and orderly evacuation of residents and visitors, minimizing the risk to human lives and property. The strategic use of these routes during the wildfires underscored their importance as vital pathways in times of crisis.

Given the unpredictable nature of wildfires and the potential for future emergencies, it is imperative that we recognize the old cane haul roads as invaluable assets for the safety and well-being of our community. Opening and maintaining these routes not only enhances our preparedness but also provides a tangible and proven solution to the challenges posed by wildfires.

Moreover, the successful utilization of these roads during the Lahaina wildfires demonstrates the practicality of incorporating them into a comprehensive fire prevention and emergency response plan for West Maui Greenway. By doing so, we can proactively address the inherent risks of living in a fire-prone region and ensure the continued safety of our community members.

In light of the tangible benefits observed during the Lahaina wildfires, I strongly advocate for the continued support and prioritization of initiatives aimed at opening old cane haul roads. These routes are not just paths through the landscape; they are lifelines that have proven their efficacy in preserving lives and protecting our community.

Thank you for your attention to this matter, and I urge you to consider the profound impact that maintaining and enhancing these old cane haul roads can have on the overall safety and resilience of West Maui Greenway.

Sincerely,  
RoAnn Vioria



**Hawaii Solar Energy Association**  
*Serving Hawaii Since 1977*

**Testimony Before the Wildfire Prevention Working Group of the Hawaii State Legislature in  
Response to the Lahaina and Maui Wildfires**

**Friday, November 17, 2023**

Dear Co-Chairs Ichiyama and Kila, and Working Group Members:

As we continue to mourn the shocking and tragic loss of life and property caused by the Maui wildfires, and plan for the challenging and complex task of healing and rebuilding ahead; we are grateful for the leadership of the Legislature and this Working Group.

HSEA members include the majority of locally owned and operated solar and energy storage companies doing business in the state of Hawaii along with leading global cleantech manufacturers and service providers that invest and sell in our market. We employ thousands of residents in diverse green economy jobs that are innovating, designing, and building Hawaii's pathway to a renewable energy future. Since 1977, we've been advocating for policies that help Hawaii achieve critical climate and resilience goals by enabling residents and businesses to invest in and benefit from the transition to clean energy. These investments provide reliable and affordable power that reduces energy cost burden and contributes to Hawaii's energy security as we decarbonize our economy and electric grid.

In response to the failure of West Maui's electric grid in the immediate aftermath of the catastrophic fires of August 8th, the solar industry rapidly mobilized and went to work. Our members, many of them Maui and Lahaina residents, donated their time, boots-on-the-ground, equipment, and financial resources to stand up emergency microgrids powered by solar panels and battery storage. Within days, resilient power systems were set up at ad hoc or planned distribution hubs at Napili Park, Pohaku Park (S-turns) and numerous other locations. These systems provided (and still provide) vital sources of electricity to serve the people of West Maui. They powered starlink communications networks, refrigeration trucks, and lighting systems to support the response and distribute food, water, and other critical services with clean, quiet, and emissions-free electricity in the people's time of need. To summarize, in cooperation with the community and other partners, we:<sup>1</sup>

- Deployed 18 distributed microgrids powered by solar and energy storage;
- Assessed 24 potential sites;
- Served 1,300+ people per day at partner sites;



**Hawaii Solar Energy Association**  
*Serving Hawaii Since 1977*

- Installed over 100 kW of distributed solar capacity and 380 kWh of storage capacity; and
- Built over \$600,000 of grounded value installed (and counting).

Going forward, on-site solar and battery storage (also called “distributed energy resources” or “DERs”) can play a critical role in rebuilding the West Maui grid and the community of Lahaina. Indeed, it can also play a role in reducing wildfire ignition risk posed by electrical power lines. Rooftop solar and energy storage allows residents and businesses to “ride through” grid outages whatever the cause. With increasing risk of weather- and climate-related extreme events such as the hurricane-induced high-winds that knocked out Hawaiian Electric’s transmission and distribution system on August 8th, DERs offer a relatively cost-effective option for building resiliency and reliable power systems. DERs installed in communities can work in conjunction with power shut-off plans and avoid high-cost investments in underground transmission and distribution lines. Resilience hubs with clean and quiet distributed power systems, coordinated microgrids, and community-based assets are other powerful options that can aid Maui and the State going forward.

HSEA and its members look forward to sharing our perspective further and promoting bills that support investments in resilient power systems that can aid in fire prevention, provide resilience in our communities, and constitute a more reliable electric grid in the future.

Thank you for the opportunity to provide testimony.

Respectfully,

***/s/ Rocky Mould***

Rocky Mould  
Executive Director

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<sup>i</sup> Information provided by footprintproject.org. HSEA and its members partnered with footprintproject.org and other community organizations to locate and assess microgrid installation sites and procure, design, and install the equipment including but not limited to solar panels, batteries, inverters, and other balance of system components for resilient power systems.

## Wildfire Prevention Working Group

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**From:** Mary Metcalf <meametcalf@yahoo.com>  
**Sent:** Thursday, November 16, 2023 8:23 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** Comments on Hawaii Wildfire Prevention Draft

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Attention: Wildfire Prevention Working Group

Mahalo for your many efforts to help safeguard Hawaii's people, communities and natural resources from the horrific and extreme high cost of wildfires. The report captures the devastating and increasing impacts that wildfires are causing, and prevention is key to avoiding future tragedies as experienced in August of this year.

It is very apparent that roadside ignitions are responsible for a vast majority of wildfires in Hawaii, yet there is no mention in the report of improved prevention measures that both State Highway and County Road departments can utilize to minimize roadside ignitions. Currently these departments are conducting and incurring the repeated costs of mowing, brush cutting and weed whacking invasive and fire prone plants growing along highways and roadways, which just grow back within the year.

There are better solutions to this, which will eliminate these fire fuels more permanently. These solutions may cost more up front but are much more cost effective in the long run. For instance, there are new impermeable materials that can be installed along roadway shoulders that impede plant regrowth. Pedestrian and bicycle paths can be installed next to roadways thus extending the natural fire break that roadways provide, with the benefit of getting more people out of cars. Green stripping as mentioned in the report can also be utilized. There are new technologies and best practices being developed every year for reducing the risk of roadside ignitions, and Hawaii's highway and road departments could be provided funding to research and incorporate these best practices, thus making a significant impact on preventing wildfires in Hawaii.

Prioritization needs to be incorporated for this effort, with a risk analysis of which areas are highest priorities to focus on initially. For instance, schools and senior living areas should be one of the initial top priorities.

Mahalo for reaching out to the many concerned citizens in Hawaii for input,

Mary Metcalf  
Kailua Kona, HI

## Wildfire Prevention Working Group

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**From:** mmmmahalo2000@aol.com  
**Sent:** Thursday, November 16, 2023 8:24 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** Testimony in strong support of the West Maui Greenway

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Aloha

While I live in South Maui, I am well aware & supportive on this W Maui Greenway. The prior leader of the Maui MPO, Lauren Armstrong, conducted many on line meetings about the proposed project. As a life long cyclist & president of the Kihei Community Assoc <http://www.gokihei.org> , safe bicycling has been a continuing concern on Maui for myself and our organization. However the tragedy in August exacerbated the importance for WMG for the entire community as a potential escape route in an emergency. We have a very similar situation here in South Maui, and we too need such escape routes, but today the matter is for our ohana in West Maui. Please take any and all actions to get WMG completed quickly

Mahalo

Mike Moran

**TESTIMONY  
TO THE HAWAII STATE HOUSE WILDFIRE WORKING GROUP  
NOVEMBER 17, 2023**

FROM: DAVID DELEON  
HAIKU, MAUI

Thank you for this opportunity to provide my thoughts on the actions that must be considered after the devastating Lahaina Wildfire. I am David DeLeon, a resident of Haiku, Maui.

I am writing to express my concern that a key element to provide safety to the residents of Lahaina seems to have been missed in your otherwise exhaustive study of the subject: alternative evacuation routes out of Lahaina.

One of the lessons of this disaster is that we must learn from it. Apparently, despite having nearly losing Lahaina in 2018, we failed to take the time do the work your group is attempting now. If that had happened, perhaps there would have been a better outcome.

A key lesson about Lahaina's geography is that you can count on the Winds of Kauaula to cause hazards for Lahaina. This has always been a known geographical fact, celebrated in ancient stories and continuing into written history. They are sort of like the Santa Ana winds of South California. What changed on Maui in recent times is the loss of the sugar cane cover crop. Green cane that has not been prepared for harvest will not become a flash fire. It burns slowly. The wild grass that replaced the cane, when dried and coupled with high winds, will burn in a flash.

That means that human habitation around that portion of West Maui requires special measures for safety. One of those measures is the establishment of effective evacuation routes.

In the recent wildfire that need became abundantly clear. The existing road system failed to meet the sudden demand. As residents tried to escape the racing fire threat, some tried to use the Lahaina's dirt cane haul roads, only to find them locked. In some desperate cases police officers broke chains or rammed gates to make these escape routes available. One has to wonder what happened to those families who tried these routes before the officers arrived.

Consideration also has to be given to the trauma that the West Maui has suffered. If you have been around someone who has just experienced a trauma, you will note that they are now on guard, protecting themselves and their families against further harm. Many sat in traffic jams as the fire raced towards them. Some had to escape to the ocean for relative safety. The resulting emotional scars will be with them for life.

Knowing that the government has pro-actively created a system of evacuation routes – in addition to the regular highway system – may help ease their anxiousness when the winds again roar.

Because Lahaina was a plantation town not long ago, it still has a network of abandoned cane haul roads that can provide the base for an evacuation road network. While much of the work of re-building Lahaina Town's infrastructure – water, sewer, electricity, etc. – may take a decade to complete – the work of establishing an evacuation route system can start immediately with the government (county or state) taking possession of the existing cane haul routes; removing the gates and chains that impeded escape in August; and declaring them as evacuation routes.

That would be a pro-active step towards safety, towards mitigating the fear that something similar can happen again. It would be a step towards showing that we have learned from this disaster.

Maui already has one such existing route. While primarily built as a recreational route, the Northshore Greenway around the makai side of Kahului Airport was also designed as alternative route in the case the Hana Highway is suddenly out of service. The route's one bridge was designed and built to be able to handle a fire truck. Luckily, we have never had to use the greenway as an emergency bypass, but it is there if needed.

I have heard of similar discussions about giving the Waianae Community access to the Lualualei Road over the Waianae Mountains through Kolekole Pass into Schofield in the case that Farrington Highway is lost. Alternatives make sense.

The work to build out the Lahaina evacuation routes – planning, appropriating and construction of a one-lane route -- can follow a pace. But at least with the opening of the existing dirt cane haul roads as escape routes, the community will have an immediate alternative.

Mahalo for your consideration.

David DeLeon

[dpdeleon@hawaiiantel.net](mailto:dpdeleon@hawaiiantel.net)

808-281-3269



## Wildfire Prevention Working Group

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**From:** Ashley Galacgac <agalacgac@gmail.com>  
**Sent:** Thursday, November 16, 2023 8:42 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** Public Testimony for Wildfire Prevention Working Group Meeting- November 17, 2023

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Dear Co-Chairs Ichiyama, Kila, and members of the Wildfire Prevention Working Group,

My name is Ashley Galacgac and I reside in Pālolo. I serve as the Co-Coordinator of AF3IRM Hawai'i, an all-volunteer black, indigenous, immigrant, and women-of-color organization committed to ending oppression in all its forms.

I respectfully submit testimony commenting on the November 1, 2023 Draft Report of the Wildfire Prevention Working Group. I respectfully request:

1. **The creation of a gender-based violence disaster response and emergency preparedness group;**
2. **Recognition of the ["2023 U.S. National Plan to End Gender-Based Violence"](#) specifically Pillar 6: Emergency Preparedness and Crisis Response to inform the working group and future state response plans**

**Please listen to domestic violence advocates who have been on the frontlines and survivors who know intimately the impact of disasters on survivors and the specific needs that survivors and their children face.** I ask the state to designate an appropriate amount of resources to assist them in the long term.

There is a direct link between [disasters and gender-based violence](#) as exacerbated factors that add stress and financial strain negatively impact survivors and create circumstances where their safety is further compromised. Their environments become more dangerous and isolation increases as support and local services are overwhelmed leaving fewer options with dire consequences.

Our communities are in need of structured approaches to realistic preparedness and implementation plans moving forward. Hawai'i would benefit from pulling from existing resources such as the Biden Administration's 2023 U.S. National Plan to End Gender-Based Violence. **This lens is critical in ensuring no one gets left behind in the response and continued recovery of the Maui community.**

Under "Pillar 6: Emergency Preparedness and Crisis Response" the plan addresses the following goals and strategic action items:

1. Address Gender-Based Violence (GBV) and associated risks in federal emergency response and recovery efforts;
2. Update training programs for first responders that address crisis- or disaster-related GBV and trauma-informed care for GBV survivors;
3. Deepen the research base on the links between climate-related disasters and heightened risk for GBV, particularly for historically marginalized and underserved populations.

**I urge you to please review the national plan listed above as well as establish a gender-based violence disaster response and emergency preparedness group.**

Thank you for your consideration of our recommendations.

Sincerely,  
Ashley Galacgac



P.O. Box 37158, Honolulu, Hawai`i 96837-0158  
Phone: 808-927-0709 [henry.lifeoftheland@gmail.com](mailto:henry.lifeoftheland@gmail.com)

**WILDFIRE PREVENTION WORKING GROUP**

Rep. Linda Ichiyama, Co-Chair

Rep. Darius K. Kila, Co-Chair

DATE: Friday, November 17, 2023

TIME: 10:00 a.m.

PLACE: Conference Room 325 & Videoconference

Re: Comments

Aloha Chair Ichiyama, Vice Chair Kila, and Members of the Working Group

Life of the Land is Hawai`i's own energy, environmental and community action group advocating for the people and `aina for 53 years. Our mission is to preserve and protect the life of the land through sound energy and land use policies and to promote open government through research, education, advocacy and, when necessary, litigation.

The Wildfire Prevention Working Group published its Draft Report on November 1, 2023. The Working Group made 42 recommendations, none with

price tags or cost estimates. A few of them are applicable to the Public Utilities Commission and electric utilities.

1. Reducing Ignitions... Work with the Public Utilities Commission and Hawaii State Energy Office to develop best practices and laws regarding electrical infrastructure and power lines... Promote strategic undergrounding of utility lines in priority fire hazard risk areas, and all new utility line developments.

2. Reducing Fuel Loads... reducing fuels (burnable plant material) to increase safety and effectiveness of firefighting efforts.

4. Protecting Communities... Development of best practices regarding downed power lines and electrical power supplies during times of possible ignition.

Life of the Land is current in several PUC proceedings, including but not limited to Integrated Grid Planning, Grid Hardening, Performance-Based Regulation, and Energy Equity.

Life of the Land has devoted the past two months to learn about wide-ranging solutions to reducing the risk of fire, from Vegetative Management, Power Supply Public Shutoff, Undergrounding, Insulation, Communications, Risk Analysis, and Fire Management Plans.

The Working Group`s Draft Report is a good starting place, and we look forward to helping to shape policy during the legislative session.

**We offer one caveat.** The presence of dry, dense, vegetative fuel is a serious issue. But there appears to be no effort to cut back grass around communities since the Maui fires. The worst-case scenario is another fire before any action to prevent fires becomes reality.

Mahalo,

Henry Curtis  
Executive Director

**Testimony of The Nature Conservancy  
Commenting on the Wildfire Prevention Working Group Draft Report.**

**Wildfire Prevention Working Group  
Hawai'i State House of Representatives  
November 17, 2023, 10:00 a.m.  
Conference Room 325 and via Videoconference**

Aloha Co-Chairs Ichiyama and Kila, and Members of the Working Group:

Mahalo for the Working Group's efforts to identify the causes of wildfires and preventative action that may be taken to reduce the risk of wildfires throughout the state, and to prepare recommendations for appropriate legislative action. The Nature Conservancy (TNC) respectfully submits the recommendations below for the working group's consideration.

Hawai'i is becoming increasingly prone to wildfire due to climate change and inadequate natural resource management. Due to climate change, we see increased droughts, hotter temperatures, more intense storms, rapid spread of invasive species, and other impacts of climate change that increase wildfire probability. As we saw on Maui, the impacts on communities and the environment from wildfire can be devastating. Because of these impacts, the State and all stakeholders must take more actions to reduce fire risk and make our islands more resilient.

For over 40 years, TNC has actively managed nature preserves throughout Hawai'i. We currently manage 40,000 acres in preserves on Hawai'i Island, Maui, Moloka'i, Lāna'i, and Kaua'i. We also work with over 50 coastal communities through networks and partnerships to help protect and restore the nearshore reefs and fisheries of the main Hawaiian Islands. Over our decades of experience of forest management and marine conservation, TNC has implemented many conservation actions that reduce fire risk. We would like to highlight these recommendations for the working group:

**Reducing Ignitions and Fuel Loads**

The draft recommendations include many important actions for the State and stakeholders to take to reduce wildfire threats. Healthy native ecosystems are key to helping reduce these risks. A few that TNC highlights for priority support include:

- Watershed protection – Our watersheds in Hawai'i play vital roles in ensuring the resiliency of our islands. Forested watersheds recharge Hawaii's underground aquifers, producing a dependable source of clean water for its streams and people. The management provided by the Watershed Partnerships, voluntary alliances of both public and private landowners committed to protecting forested watersheds through collaborative management, helps to ensure that our vital watersheds can continue to support Hawai'i's communities and ecosystems and provide water and management to fight and prevent fires. Increased State

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funding for forests and watershed protection will help to support the management needed for healthy watersheds.

- Agroforestry – Agroforestry, the intentional integration of trees and shrubs into farming systems to create environmental, economic and social benefits, could play an important role in the management of land in Hawai'i to prevent wildfire and provide communities with food and culturally important plants. Increased agroforestry would also increase the amount of greenhouse gases being sequestered. Increasing State support for agroforestry could help with the recovery of Lahaina and provide green firebreaks in the area.
- Wetland protection and restoration – Our natural systems in Hawai'i play key roles in the resiliency of our islands. Wetlands absorb and release water; they capture the abundance during heavy rains and slowly release it during droughts. This helps recharge groundwater aquifers, which provide nearly all of Hawai'i's residential and commercial freshwater. Wetlands are also key to protecting our coral reefs from runoff, flood protection, sediment filtration, and wildlife habitat. Protecting and restoring wetlands in Hawai'i will make the islands more resilient in the face of climate change.
- Support Department of Land and Natural Resources (DLNR) requests for Fire and Emergency Response (LNR 402) – DLNR is the State agency that is on the ground dealing with fire risks and response. To ensure they have the necessary resources, we support the State Legislature funding their requests to help with equipment and staff to do the work necessary for protecting our natural areas from fire threats. TNC also supports DLNR's efforts towards pre-suppression and post fire restoration activities such as replanting, controlling invasive grasses, and other landscape scale resilience and fuel reduction prescriptions.

### **Community Engagement and Protection**

Thank you for recognizing the importance of community engagement and preparation in your draft. The people of all communities throughout the state will play the most important role in ensuring fire safety. Some priorities include:

- Implement and fund Community Wildfire Protection Plans (CWPPs) – CWPPs provide a road map for the communities who have completed them and are currently drafting them. Ensuring that the completed plans are implemented will help to significantly reduce fire risk and prepare communities. State funding and leadership support for the implementation will be key to the success of these plans. Additionally, the Hawai'i Wildfire Management Organization (HWMO) works with communities to write the plans and provides resources and support. Increased State support for HWMO would help to make Hawai'i more fire-ready.
- Green jobs – Wildfire prevention requires a workforce to constantly manage and reduce wildfire risk. This, in turn, requires consistent efforts to attract youth and young adults to choose careers in wildfire prevention, including wildfire prevention-related conservation. Hawai'i currently has two complimentary programs that provide opportunities for young adults to begin their careers in conservation and other sustainability-focused professions: the Youth Conservation Corps and the Green Job Youth Corps. Funding is needed, however, to continue these programs, and to build capacity to augment them to fund a generation of local kama'āina who can fill the wildfire prevention and related green jobs needed to reduce the

wildfire risks described in the Working Group's draft report. The young adults participating in these programs should, once they complete their terms, have good paying wildfire prevention-focused jobs they can transition into. Investing in both of these areas – good jobs and good workforce development pathways – can create a virtuous cycle that will enable continued generations to prevent and reduce future wildfire tragedies.

### **Funding**

- Finally, the draft report includes many actions that are important to prevent wildfires in Hawai'i and to be able to fund these needs, the State will likely need significantly increased funding for wildfire prevention-focused conservation and other natural resource management, either through raising of revenue from visitors, some other means, or a combination of the two. The legislature should approve funding to protect, restore, and manage Hawai'i's magnificent and irreplaceable natural resources for many reasons, most pertinently to save lives by preventing and reducing wildfire risk. Protection of biodiversity, climate change adaptation, water management, soil management, and conservation and other forms of mālama 'āina are all critical to preventing wildfire risk. Likewise, these prevention efforts require a strong workforce to achieve our shared goals. All of this requires funding, which the legislature is uniquely empowered to provide.

Mahalo for to opportunity to provide these comments. We appreciate your support of Hawai'i's natural resources, we look forward to continuing to support efforts to make Hawai'i more fire resilient, particularly through investments in our natural resources.

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*The Nature Conservancy of Hawai'i and Palmyra is a non-profit organization dedicated to the preservation of the lands and waters upon which all life depends. The Conservancy has helped protect more than 200,000 acres of natural lands in Hawai'i and Palmyra Atoll and has supported over 50 coastal communities to help protect and restore the nearshore reefs and fisheries of the main Hawaiian Islands. We manage 40,000 acres in 13 nature preserves in Hawai'i and Palmyra Atoll. We forge partnerships with government, private parties, and communities to protect forests and coral reefs for their ecological values and for the many benefits they provide to people.*

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November 17, 2023

Wildfire Prevention Working Group and  
Environmental Remediation Working Group  
Via Electronic Transmission

Re: The Imperative of Allocating Adequate Funding to Protect Natural Resources

Aloha members of the House Wildfire Prevention Working Group and the Environmental Remediation Working Group,

Thank you for the opportunity to contribute to the important work of the House Wildfire Prevention Working Group and the Environmental Remediation Working Group. We, the undersigned, agree that wildfire is a growing threat in Hawai'i, and that the major drivers of this growing threat include proliferation of invasive grasses, climate change, and undermanagement and underspending on wildfire prevention. As organizations focused on mālama 'āina (caring for the land that feeds us), we see wildfire prevention as an interconnected component of conservation: sound conservation will generally reduce wildfire risk, and sound wildfire prevention includes conservation.

The remainder of our comment focuses on our strong recommendation that the final report include one key element currently missing from the working groups' draft reports: **that the state significantly increase funding for wildfire prevention-focused conservation and other natural resource management, either through raising of revenue from visitors, some other means, or a combination of the two.** As a part of this recommendation, we briefly describe the connection between wildfire prevention and major aspects of conservation, such as biodiversity protection and climate adaptation, whose importance to sound wildfire prevention is not always understood.

### **The Need to Fund Wildfire Prevention and Related Conservation**

Significant additional funding for natural resource management is and will be central to Hawai'i's ability to implement the sound recommendations in the working groups' reports. As the Wildfire Prevention Working Group's draft report explains, Hawai'i's wildfire risk is growing, and new programs, policies, state positions, and partnerships are needed to respond to this threat. Yet, as the draft report also finds, Hawai'i spends significantly less on wildfire prevention than other states. While not explicitly mentioned in the draft report, our organizations and others have found that in general, Hawai'i underspends on conservation overall. While not always understood as part of wildfire prevention, when we under-invest in watershed restoration, invasive species management, climate change adaptation, soil management, water management, biodiversity protection, and conservation in general, we increase wildfire risks in the short and long term.

As the tragic firestorms have shown, natural disaster and wildfire risk are intertwined. For this reason, conservation that reduces our state's vulnerability to natural disasters is a critical part of wildfire prevention. Because any natural disaster could lead to unintended fire ignition, when we protect natural resources that reduce our vulnerability to hurricanes, storms, tsunamis, tidal waves, volcanic eruptions, and other natural disasters, we are also reducing the risk of costly wildfires and other disasters.

Wildfire prevention requires a workforce to consistently manage and reduce wildfire risk. This, in turn, requires ongoing efforts to attract youth and young adults to choose careers in wildfire prevention, including wildfire prevention-related conservation. Hawai'i currently has two complementary programs that provide opportunities for young adults to begin their careers in conservation and other sustainability-focused professions: the Youth Conservation Corps and the Green Job Youth Corps. Funding is needed, however, to continue these programs, and to build capacity to augment them to fund a generation of kama'āina who can fill the wildfire prevention and related green jobs needed to reduce the wildfire risks described in the Wildfire Prevention Working Group's draft report. The young adults participating in these programs should be able to transition into good paying wildfire prevention-focused jobs once they complete their terms,. Investing in both of these areas – good jobs and good workforce development pathways – can create a virtuous cycle that will enable continued generations to prevent and reduce future wildfire tragedies.

In conclusion, the legislature should approve funding to protect, restore, and manage Hawai'i's magnificent and irreplaceable natural resources for many reasons, most pertinently to save lives by preventing and reducing wildfire risk. Watershed restoration, invasive species management, climate change adaptation, water management, soil management, protection of biodiversity and other forms of mālama 'āina are all critical to preventing wildfire risk. Likewise, these prevention efforts require a strong and prepared workforce to achieve our shared goals. All of this requires funding, which the legislature is uniquely empowered to provide.

We look forward to working with you to ensure that our natural resources are at the forefront of wildfire prevention strategy and that the state budget reflects these priorities. Please let us know how we can best help you advance these efforts and secure the funding necessary to preserve and restore Hawai'i's natural resources for future generations.

Thank you for the opportunity to testify,

TRUST FOR PUBLIC LAND

THE NATURE CONSERVANCY

KUPU

RESOURCES LEGACY FUND



**Hawaiian  
Electric**

**WRITTEN TESTIMONY BEFORE THE HOUSE  
WILDFIRE PREVENTION WORKING GROUP**

Friday, November 17, 2023  
10:00 am  
State Capitol, Conference Room 325

Dear Co-Chair Ichiyama, Co-Chair Kila and members,

Hawaiian Electric supports the work of the Wildfire Prevention Working Group and believes their report provides a foundation for evaluating the scope of the emerging wildfire threat in Hawaii. Up to 45,000 acres are burned by wildfires each year in Hawaii, according to research by the Hawaii Wildfire Management Organization, a startling number on a small chain of islands. The report states that “bold action is required,” and the Company believes the working group’s comprehensive list of recommendations outlines key areas of emphasis that will be helpful in developing legislation that will help keep communities safe. There are no one-size-fits-all solutions to wildfire risks, and this draft report provides guidance on various solutions to consider.

The working group’s conclusions and recommendations are aligned with Hawaiian Electric’s priorities and action steps described in our Wildfire Safety Strategy, including development of best practices on prevention of ignition during extreme weather conditions and prioritizing selective hardening of lines or other protective measures for infrastructure in fire risk hazard areas.

The Company appreciates the emphasis the working group placed on the importance of land management practices that reduce the availability of fuel and also the raising of public awareness that accidental ignitions by people are the leading cause

of wildfires in Hawai'i. The increased frequency and severity of extreme weather events, including catastrophic wildfires, are challenging our customers and the communities we serve.

Hawaiian Electric first began developing its Wildfire Safety Strategy in 2019 and continues to adapt it to address the elevated risks in Hawai'i. On November 3, 2023, the Company described its three-phase safety strategy, which includes actions it is taking when weather conditions indicate the potential for fires in high-risk areas.

Additionally, Hawaiian Electric is advancing work on its \$190 million grid resilience plan to harden against wildfires, hurricanes, tsunamis, and flooding, and to adapt to climate change impacts. Half of this multi-year program is to be paid by the federal government with the other half matched by customers, pending approval by the Public Utilities Commission.

Hawaiian Electric has also begun discussions with government, emergency response, and community stakeholders to determine how a Public Safety Power Shutoff (PSPS) program can be designed and implemented in a way that is appropriate for each county in the state. A PSPS, which is typically preceded by a "Red Flag Warning" or some other notification issued by the National Weather Service, would shut off power in certain areas before extreme weather events as an additional means to reduce the risk of a wildfire. However, before such a program is implemented – a community must understand that its electricity will remain off for an indefinite period of time.

We appreciate the thoughtful overview by the Wildfire Prevention Working Group and believe it provides helpful direction to those who will be prioritizing strategy and action in the 2024 Legislative Session. Hawaiian Electric will continue to work closely

with legislators and the community, as well as regulators and other stakeholders to develop and implement strategies to keep our communities safe.

Accordingly, Hawaiian Electric supports the findings in the Wildfire Prevention Working Group's draft report. Thank you for this opportunity to provide testimony.



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866-295-7282 | aarp.org/hi | hiaarp@aarp.org |  
Twitter.com/aarphawaii | facebook.com/aarphawaii

**The State Legislature  
Wildfire Prevention Working Group  
Friday, November 17, 2023  
Conference Room 325, 10:00 a.m.**

TO: The Honorable Linda Ichiyama, Co-Chair  
The Honorable Darius K. Kila, Co-Chair

FROM: Keali'i S. López, State Director

RE: AARP Comments – Wildfire Prevention Working Group Draft Report

Aloha Co-Chairs Ichiyama and Kila, and Members of the Committee:

My name is Keali'i Lopez and I am the State Director for AARP Hawai'i. AARP is a nonpartisan, social impact organization that advocates for individuals aged 50 and older. We have a membership of nearly 38 million nationwide and nearly 140,000 in Hawai'i. We advocate at the state and federal level for the issues that matter most to older adults and their families.

Thank you for sharing the draft report prepared by the Wildfire Prevention Working Group which identifies the causes of wildfires and preventive actions that may be taken to reduce the risk of future wildfires throughout the State. AARP appreciates this opportunity to provide the following comments on this report:

*Overall, the report is well written, clear and provides comprehensive analysis and recommendations concerning the risk, vulnerability and potential consequences associated with wildfires in Hawai'i.*

• *Approach: All recommendations detailed in the document will require a whole-of-government approach. All recommendations are relevant, and all will provide some level of preparedness, response, and mitigation success, but they are interrelated, and all are required to achieve a reasonable level of preparedness, response, and mitigation. The report details how woefully unprepared the state is concerning wildfires. We concur with all aspects of the report and encourage full implementation.*

• *Funding Integration: Wise use now of current state and available federal resources will enable a stronger and faster long-term recovery. Hawai'i will eventually receive future federal funding most probably in the form of a CDBG-DR (Community Development Block Grant – Disaster Recovery) grant. This grant will enable Hawai'i the funding to build resilient new housing and focus efforts on multiple and simultaneous mitigation efforts.*



Older adults are disproportionately impacted by disasters, often representing the majority of fatalities resulting from extreme weather, natural hazards, and public emergencies. Tragically, this remains true in the recent Lahaina fire.

We deeply appreciate the Legislature's efforts to incorporate the lessons learned from the Maui disaster and work toward finding better solutions to mitigate, prepare and respond to future emergencies.

Mahalo for this opportunity to comment on this draft report.

## Wildfire Prevention Working Group

---

**From:** Robert Cole <texturelighting@gmail.com>  
**Sent:** Thursday, November 16, 2023 10:05 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** WILDFIRE PREVENTION WORKING GROUP

You don't often get email from texturelighting@gmail.com. [Learn why this is important](#)

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Aloha:

Rep. Linda Ichiyama, Co-Chair  
Rep. Darius K. Kila, Co-Chair  
Rep. Terez Amato Rep. Rose Martinez  
Rep. Cory M. Chun Rep. Amy A. Perruso  
Rep. Sonny Ganaden Rep. Mahina Poepoe  
Rep. Cedric Asuega Gates Rep. Jackson D. Sayama  
Rep. Natalia Hussey-Burdick Rep. David A. Tarnas  
Rep. Kirstin Kahaloa Rep. Chris Todd  
Rep. Lisa Marten Rep. Lauren Matsumoto

I wish the West Maui Greenway is implemented as soon as possible, for the following reasons:

**Critical Importance:** The recent Lahaina fire underscores the critical importance of having designated evacuation routes in place. I strongly urge the working groups to prioritize recommendations for the establishment of these routes, taking into account the unique advantages offered by existing cane haul roads.

**Utilization of Cane Haul Roads:** Cane haul roads present a valuable and existing infrastructure that can serve as

efficient emergency evacuation routes. These roads are well-established and, if properly maintained and unlocked, could significantly enhance the community's ability to evacuate safely during emergencies.

**Existing West Maui Greenway Plan:** I draw your attention to the existing West Maui Greenway (WMG) plan, specifically page 20 of the master plan, which recommends the use of the greenway as an emergency evacuation route. Given Lahaina's geographical positioning and limited transportation options.

And...I ride my bike nearly every day and this would provide me and my fellow riders critical safety.

Mahalo,

Robert Cole

Maui.

--

Render Theory: It either renders or it doesn't.





**Hawaiian  
Electric**

**WRITTEN TESTIMONY BEFORE THE HOUSE  
WILDFIRE PREVENTION WORKING GROUP**

Friday, November 17, 2023  
10:00 am  
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with legislators and the community, as well as regulators and other stakeholders to develop and implement strategies to keep our communities safe.

Accordingly, Hawaiian Electric supports the findings in the Wildfire Prevention Working Group's draft report. Thank you for this opportunity to provide testimony.

**HOW TO:**

**PREPARE**

**FOR**

**WILDFIRES**

**HOW TO:**

**PREPARE  
FOR  
WILDFIRES**



The goal of this work is **mitigation**: actions taken to reduce or eliminate long-term risk to people and property from a natural disaster.

This booklet contains gleanings from federal, state, county, and local subject matter experts and is designed to serve as a:

1. Smoke Detector Instruction Sheet
2. Education Curriculum
3. User Handbook
4. Emergency Preparedness Catalog
5. Solutions Manual
6. Inspector Checklist
7. Vegetation Removal Policy
8. Resident Resource Packet
9. Military Standard of Procedures
10. Community Wildfire Protection Plan Guidebook

Information for one topic interrelates with others but is only sometimes repeated. For example, “How to Check Your Smoke Detector,” under **Education**, is also relevant to **Inspections**.

# 1.

## ACCOUNTABILITY DECISIONS

---

Land and structure managers may be federal, state, or private. For example, the location where this sentence is being typed is owned by the state, leased by the federal government, and managed by a private company.

Because fire doesn't care about property lines or fire code violations, clearing areas of concern prioritized by experts makes sense, whether it's federal, state, county, or private property.

1. Who are the **points of contact** for the ignition zones of every structure, each fire road, and all electrical poles and wires?
2. Who will make a **map** with those points of contact and distribute it to authorities having jurisdiction?
3. Who will **coordinate** with federal, state, county, local, and private land managers when vegetation or structure mitigation is necessary to correct local fire code violations and fire hazards from the other side of property lines?
4. Who will **oversee** ongoing organizational fire preparedness for people, structures, and grounds to ensure teams work together without gaps?



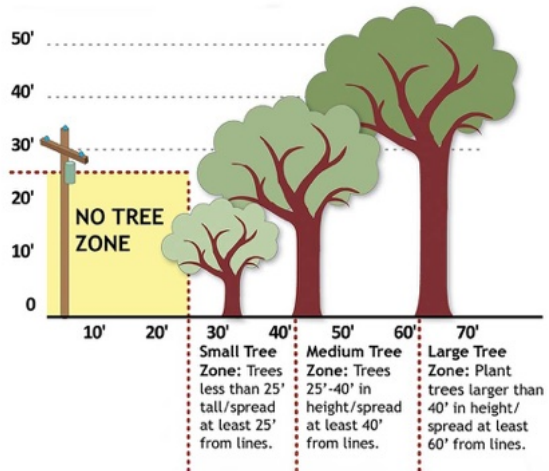
# 2.

## ELECTRICAL POLE AND WIRE DECISIONS

According to an inspection by a **certified utility forester**, what ignition zone must be cleared for each pole and wire?

This determination is based on:

- Tree growth and structure
- Wind sway
- Line sag
- Species of tree
- Environmental factors
- Irrigation
- Proximity of the tree to an electrical line and line configuration



The utility forester will always include a reasonable margin of safety above the absolute minimum clearance requirements.

(Image Source: National Rural Electric Cooperative Association)

# 3.

## EMERGENCY NOTIFICATION SYSTEM DECISIONS

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1. **Where** can people look for emergency instructions (such as when a warning siren sounds)?



2. When people request to **unsubscribe** from a source of emergency alerts because of messages that appear to be spam from the sender, will they first be informed that this is the same sender who would be sending them an evacuation order?

3. How often will **testing** be conducted on local emergency alert systems?

(Image Source: Hawaii Emergency Management Agency)

# 4.

## EMERGENCY PLANNING DECISIONS

---

1. Will **all gates** (or at least a **second gate**) remain open during Red Flag Warnings on military installations?
2. Which **subject matter experts** and **authoritative guidance** will determine the best fire preparedness plan for each area?
  - The **NFPA Fire Code 1** is an insufficient stand-alone fire preparedness guide for wildland urban interfaces, areas where human settlements are at greater risk of catastrophic wildfire.
  - Consider the **FEMA National Fire Risk Index** (<https://hazards.fema.gov/nri/wildfire>) when constructing a Community Wildfire Protection Plan.

# 5.

## FENCING DECISION

---

Will all combustible fencing be replaced with noncombustible fencing, or will the first 5' of combustible fencing attached to structures be replaced with 5' sections?



**Noncombustible materials should be used to construct at least the first 5 feet of a fence attaching to a home.**

(Image Source: [https://www.fema.gov/sites/default/files/documents/fema\\_marshall-fire-mat-homeowners-guide-reducing-risk-structure-ignition.pdf](https://www.fema.gov/sites/default/files/documents/fema_marshall-fire-mat-homeowners-guide-reducing-risk-structure-ignition.pdf) )

# 6.

## FIRE DEPARTMENT DECISION

---

Would building or reopening a fire department in your community be beneficial?



(Image Source: Sadie Rabines Architects)

# 7.

## IGNITION ZONE DECISIONS

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**C**reating defensible space within **100'** of all buildings is directed by the Federal Emergency Management Agency. (One of many sources: <https://www.usfa.fema.gov/downloads/pdf/publications/wildfire-pre-fire-planning-handout.pdf>)

Experiments, models, and post-fire studies have shown homes ignite due to the condition of the house and everything around it, up to **200'** from the foundation (Source: National Fire Protection Association). Clearing flammable materials such as brush or vegetation in buildings' extended ignition zones creates a **defensible space buffer** that helps halt the progress of an approaching wildfire and keeps firefighters safe while they defend structures. Push mid-slope and steep-slope properties' fuel modifications up to 200 feet (Source: [firesafemarin.org](http://firesafemarin.org)).

1. Which areas require an **extended ignition zone** (up to 200')?
2. Will **wooden picnic tables** in structural ignition zones be replaced with noncombustible versions?
3. Will **wooden picnic tables** be permitted within immediate and intermediate ignition zones?

4. Will an ignition zone **exception** be made for a single ornamental tree specimen?

5. Since time, workforce, and funding are limited, **will tree exceptions be denied** to reduce the strain on these resources required to maintain trees safely? (Source: <https://youtu.be/of2raSjd3uE?feature=shared&t=193> from the US Fire Administration.)

6. In addition to structural ignition zones, will the following **highly flammable plants** be removed from particular sections of land?

- Acacia Koa (up to 115')
- Bamboo
- Cedar
- Cypress
- Eucalyptus
- Guinea grass
- Japanese honeysuckle
- Juniper
- Pine
- River birch
- Rosemary
- Scotch broom
- Feather grass
- Fir
- Gas plant
- Spruce
- Klu
- Broomsedge
- Sweet vernal grass
- Meadow ricegrass
- Red fescue
- Velvetgrass
- Thatching grass
- Koa haole
- Molasses grass
- Natal redtop
- Firetree
- Asian sword fern
- Hilo grass
- Buffelgrass
- Kikuyu grass
- Fountain grass
- Kiawe
- Bush beardgrass

(Image Source:  
Princeton  
University  
Environmental  
Health and Safety)



# 8.

## INSPECTION DECISIONS

---

1. Who will regularly inspect the work of **grounds maintenance** workers to confirm all flammable debris is removed and disposed of? When?
2. Who will regularly inspect **fire roads** protecting residential and nonresidential structures? When?
  - In Hawaii, for example, someone from each military installation must ensure fire roads for their neighborhood are clear and maintained by the **Division of Forestry**. The point of contact for road obstructions or maintenance needs is the neighborhood **district representative of the Department of Land and Natural Resources**.
  - According to the National Fire Protection Association, clear access roads for emergency vehicle access with at least a 20' width and vertical clearance of 13.5' (01/08/2021).
3. Who is inspecting **fire hydrants** annually and performing fire hydrant flow tests every five years in accordance with the National Fire Prevention Association (NFPA 291)?
4. Who will regularly inspect structures and grounds for **idle pallets and propane tanks**, and what criteria will regulate those items? When?



5. Who will identify **protected trees** and request permission to remove them where necessary? When?
6. In Hawaii, who will inspect **trees over 15'** tall between June 1<sup>st</sup> and August 31<sup>st</sup> to develop a pruning and removal plan for September 1<sup>st</sup> through May 31<sup>st</sup>? When?



(Image Source: InterNACHI)

# 9.

## PLAYGROUND DECISIONS

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Will playground fire safety measures include clearing vegetation to 30' and replacing combustible fencing?



(Image Source: The Little Tykes Company)

# 10.

## STRUCTURE DECISIONS

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1. Roofing is the most important hardening feature of every structure. Will all structures have **Class A fire-rated roofing products**?
2. Will rain **gutters** be screened or enclosed?
3. Will all **vents penetrating roofs** have a fire damper in the duct at the plane of the roof assembly?
4. Will all **HVAC system vents** have fire dampers installed within the ducts immediately behind the wall louvers?
5. **How often** (a minimum of every [#] months?) will the building manager schedule servicing of **roofs, gutters, vents, crawlspaces, and window screens**?
6. Will every structure be equipped with a **long hose** that can reach from each external spigot to all areas of the home, carport or garage, and nonresidential building foundation?
7. How often will **crawlspaces** (within slats and openings in building foundations) be cleaned of flammable debris?
8. Will **metal shutters, skirting, or other ignition-resistant materials** be used to cover exposed eaves, soffits, openings of slatted foundations, and other vent openings to avoid

flammable debris, embers, and hot gasses from entering the vents?

9. Will **combustible eaves, soffits, and other vents** be replaced with metal alternatives?

10. Will all exposed eaves, soffits, and other vents be protected with **1/8" corrosive-resistant metal mesh** (maintained every [#] months to remove flammable debris)?  
(Source: FEMA)

# HIGH RISK

## UNENCLOSED EAVES



## 11. Will wildfire sprinkler systems be installed inside and outside high-risk structures?



For example, this home's foundation has wooden **slats with gaps** between and **spaces** underneath. These **unscreened openings enable dead vegetation to collect under the home**. Embers that enter the gaps can ignite the kindling and house. Attached to this home is a **combustible fence**: a fuel path and a fuel ladder from the valley below. Dead and otherwise combustible vegetation is in this home's ignition zone.

**(1) Construct a noncombustible retaining wall for these buildings to help increase the setback.**

**(2) Push fuel modification to 200'.**

**(3) Renovate with ignition-resistant materials.**



**12. Flames, embers, and radiant heat spread quickly upslope. Can the GUARDIAN Project be used for buildings like those pictured on the last page?**

(<https://www.uia-initiative.eu/en/uia-cities/ribaroja-de-turia>)

(Below: A GUARDIAN water sprinkler tower; Source: Graham Keeley)



**GUARDIAN is the biggest defense system against wildfires in Europe, consisting of 40 towers that encircle the towns. These towers use recycled water.**

**In places like Hawaii—especially where steep slopes make safe maintenance of defensible space in extended ignition zones difficult—wouldn't a system like the GUARDIAN project be ideal?**

**Case Study:** The problem in Spain was that “...in the period 2000-2016, the Riba-roja area experienced 40 forest fires, while that of Paterna recorded 19. These fires are becoming more frequent in the last years, and potentially more destructive...”

“The project adopts a combined strategy based on the use of recycled water for fire mitigation and protection, providing preventive irrigation and extinction water spraying patterns automatically programmed. GUARDIAN will implement the hydraulic infrastructure to supply recycled water from the Waste Water Treatment Plant Camp del Turia II to the Wildland-Urban Interface of La Vallesa, and the elements

(irrigation and sprinkler towers) which make up the defensive barrier.

The installation, positioned in the fire line between forests and urban areas, will integrate irrigation and fireplugs with high-pressure hydrant cannons covering the perimeter. The operation of the fire prevention and suppression infrastructure will be based on sensor networks and forecast services processed by an automatic system.

In order to support this hydraulic infrastructure, GUARDIAN will also make use of an existing wetland (Vallesa pond) as an emergency reservoir added to tanks in the system. In order to achieve the required water quality for the project's goals, a modular advanced water treatment will be implemented at the existing facility.” (Source: Urban Innovative Actions)



(Image Source: MEDI XXI GSA, one of seven organizations that developed the GUARDIAN project)

# 11.

## VEGETATION MANAGEMENT DECISIONS

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In Hawaii, grazing by cattle and sheep has been shown to reduce fuel loads and predicted fire intensity in nonnative grasslands. Experimental trials in Hawaii's nonnative grasslands also indicate that grazing's effects on fuel loads may last longer than chemical and mechanical treatments.

These findings suggest that livestock grazing has potential as a valuable fire management tool in nonnative-dominated grasslands in Hawaii and throughout the Pacific Island Region. (Source: [https://pacificfireexchange.org/wp-content/uploads/2022/07/PFX\\_FactSheet\\_Grazing\\_Final.pdf](https://pacificfireexchange.org/wp-content/uploads/2022/07/PFX_FactSheet_Grazing_Final.pdf))

- For a second example, see <https://ediblehi.com/the-weed-eaters/>.

1. Has a program been considered for vegetation management and firebreaks by rented herds of grazing cattle, goats, or sheep?

2. Has tilling the soil been considered for firebreaks?

- The annual disking of a firebreak can maintain it indefinitely. (Source: <https://extension.okstate.edu/fact-sheets/firebreaks-for-prescribed-burning.html>)



# 12.

## FUNDING DECISIONS

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Some states, including California and Colorado, have introduced legislation to provide **fire mitigation tax credits** and introduce **sales tax programs** to fund county-wide wildfire mitigation. Additionally, Colorado has an **Incentives for Local Government (ILG) grant program** to assist the local government with its established wildfire mitigation effort.



Have you considered lobbying for bills that would enable similar funding for your area?

(Image Source: Synchrony Bank)

# 13.

## CANOPIES AND AWNINGS



**E** ntrance canopies found at the main door of many buildings are considered “exterior projections” by NFPA 13 Standard for the Installation of Sprinkler Systems and may require **sprinkler protection** when exceeding 4 feet in width or where storage is located below the canopy.

(Image Source: Humphrys Awnings)

# 14.

## COLLABORATION

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**F**ragmentation elevates risk. For example, our two closest fire stations are not in our community. Our emergency services and leadership teams are in a third location. Our fire inspectors work at locations four and five. Our land managers are all over the country. Our overseeing fire department is at location six. Our landscaping contractors are in places seven through ten. Our inspectors, maintenance, and police are scattered across the state.

## **COLLABORATION IS A CRUCIAL COMPONENT OF FIRE PREPAREDNESS.**

1. A cohesive team is needed to develop a Fire Risk Mitigation Plan, or Community Wildfire Protection Plan (CWPP).



2. This interagency collaboration team comprises experts in safety, fire prevention, applicable fire codes, emergency notification systems, emergency planning, fire roads, smoke detectors, vegetation management, education, messaging, and so on.
3. Part of the team's goal—a **Fire Risk Mitigation Plan**—is composed of two actions: (1) to determine the hazards posed by fire for presentation to the leadership team and (2) to recommend to the leader [military: Commander] a strategy for both immediate and long-term efforts to address those hazards.
4. Two of the Fire Risk Mitigation Plan components are Fire Preparedness Safety Assessments with follow-up inspections.

5. The Fire Risk Mitigation Plan is also known as a **Community Wildfire Protection Plan (CWPP)** and is achieved by the following steps:

6. **Convene Decision Makers.** The team would connect with federal, state, and local cooperators for additional guidance and subject matter expertise. They would learn about local risks and code requirements.

7. **Form a Core Working Group.** The local fire chief, emergency management coordinator (EMC), fire marshal, city planner, the local utility, agricultural extension agent, geographic information systems (GIS) coordinator, GIS Analyst, local school district, emergency management, hazard mitigation coordinator, wildland urban interface specialist, local and municipal state police, US Forest Service, National Park Service, US Army Corps of Engineers, Conservation Service, and Resource Conservation and Development are key. The more agency representatives and resident leaders create the document, the better the plan.

(Image Source: Grow Up Sales)

## **Meeting one:** Schedule risk assessments.

- Assess risks, hazards, fire protection capability, structural vulnerability, and values to be protected.
- Identify the Wildland Urban Interface (WUI) within the planning area.
- Pinpoint and prioritize areas in which to conduct fuel reduction treatments.
- Check means of access (ingress and egress, road width, all-season road condition, fire service access, and street signs)
- Survey vegetation (characteristics of predominate vegetation within 300 feet of a home, defensible space)
- Valuate roofing assembly (roof class)

- Determine building construction (materials)
- Analyze available fire protection (water source availability, organized response resources)
- Investigate the placement of gas and electric utilities

**Start Proclamation.** Present a resolution for approval and signatures.

**Create a Community Base Map.** Identify potential communities at risk (CARs), areas with critical infrastructure, and delineation of the Wildland Urban Interface. Identify high-risk, priority areas for risk assessments.

**Conduct Risk Assessments.** Compile and share results. Help residents understand their wildfire risk and engage in mitigation actions.

**Meeting two:** Add completed risk assessment reports to the CWPP and identify potential fuel projects.

**Meeting three:** Add pictures and maps.

**Establish Community Hazard Reduction Priorities and Recommendations to Reduce Structural Ignitability.**

**Develop an Action Plan.** Include outreach and education programs and other actions that assist in achieving the goals and objectives of the Community Wildfire Protection Plan. Identify each priority project's roles, responsibilities, funding needs, and timelines. Deliver the draft to the fire department for editing. Research and identify potential funding sources. Present for public opinion.

**Meeting four:** Schedule CWPP signing and recognition ceremony. Present the final copy to the city council or military equivalent.

## **COMPLETE THE PLAN. PREVENTION MEASURES ONLY WORK WHEN ENACTED.**

**Case Study:** More than 30 years ago, Maui's Civil Defense Advisory Council began discussing the need for a public address system so residents can get real-time instruction when phones and TVs aren't working. (Source: Sherman Thompson, former chair of Hawaii's Civil Defense Advisory Council, 9/26/2023)

Maui County's 2014 Fire Risk Mitigation Plan attested, "...fire safety zones for all neighborhoods and areas of Western Maui are yet to be determined."

Joe Pluta, head of the West Maui Improvement Foundation, and other members had hoped the 2018 fire near Lahaina would be the wake-up call the county needed to start taking additional steps to prevent future wildfires.

They met with their mayor and emergency management manager in September of 2018, but there was no follow-up from the county (<https://www.nbcnews.com/news/us-news/maui-officials-warned-lahaina-wildfires-2018-critics-rcna101515>).

Over the past five years, Pluta’s Foundation has raised \$400K towards a \$2M fire station about six miles from Lahaina. (Sources: Evan Bush, 8/23/2023, and Joe Pluta, 10/18/2023)

Maui County did have a 2020 strategy (<https://www.mauicounty.gov/DocumentCenter/View/125977/2020-Maui-County-Hazard-Mitigation-Plan-Final>), but a plan is only as good as its execution.



(West Maui 2018; Image Source: Zane Vergara)



(West Maui 2023; Image Source: AP News)



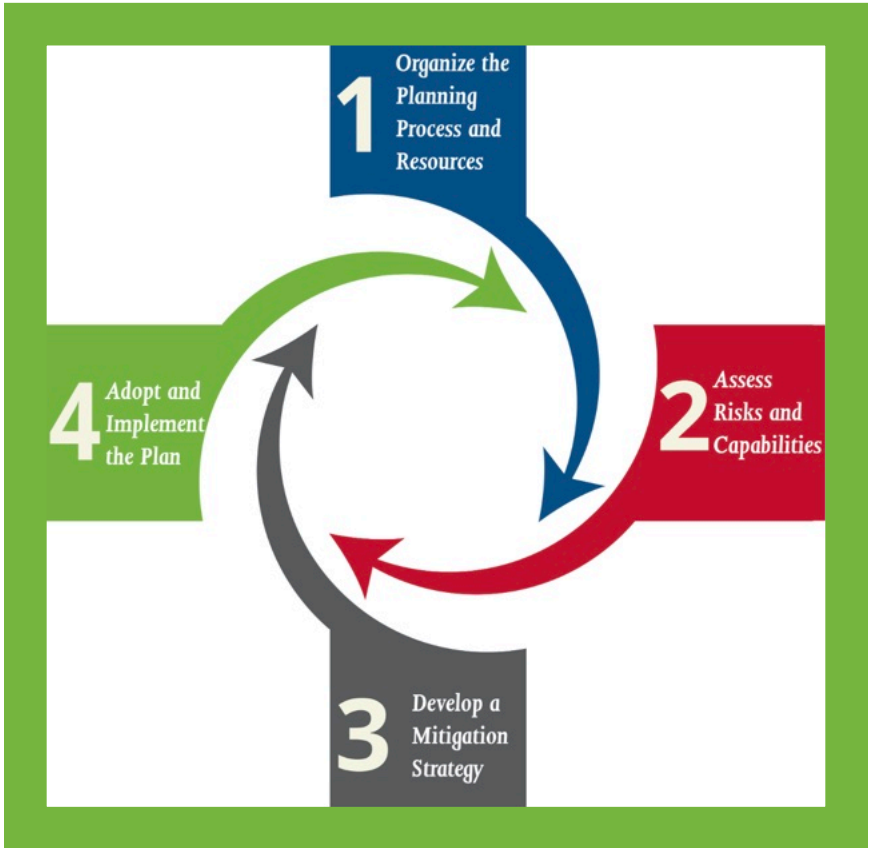
# HOW TO



1. FEMA's 2023 Local Mitigation Planning Handbook ([https://www.fema.gov/sites/default/files/documents/fema\\_local-mitigation-planning-handbook\\_052023.pdf](https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-handbook_052023.pdf)) Annex B has Worksheets, Samples, and Starter Kits
2. CWPP Template (<https://csfs.colostate.edu/wp-content/uploads/2022/07/cwpp-template.docx>)
3. Leader's Guide for Developing a CWPP ([https://static.colostate.edu/client-files/csfs/pdfs/CWPP\\_LG.pdf](https://static.colostate.edu/client-files/csfs/pdfs/CWPP_LG.pdf))
4. Creating a Community Wildfire Protection Plan (Source: US Fire Administration, FEMA) ([https://www.usfa.fema.gov/downloads/pdf/publications/creating\\_a\\_cwpp.pdf](https://www.usfa.fema.gov/downloads/pdf/publications/creating_a_cwpp.pdf))
5. Before the Lahaina, Hawaii fire in 2023, Butte County, California, was the home of the deadliest wildfire in modern US History: the Camp Fire of 2018. Here is Butte County's 2022 Community Wildfire Protection Plan: <https://osfm.fire.ca.gov/media/efzpg35k/2022-butte-county-unit-fire-plan.pdf>
6. Colorado Springs CWPP (<https://coloradosprings.gov/document/coscwpp2021.pdf>)
7. The 2024 International Wildland Urban Interface Code (IWUIC) <https://codes.iccsafe.org/content/IWUIC2024P1>

(Image Source: How To)

8. Four core steps in completing a hazard mitigation plan or plan update (FEMA):



9. As of June 2023, the following states have earned FEMA approval for their enhanced state mitigation plans. The plans at these links can be formatting examples for constructing a plan for your people group.

- CA (<https://www.readyforwildfire.org/>)
- CO ([https://drive.google.com/file/d/1bp0gDZTfOTO6bQa6TA8hv7\\_FLZZgSwxp/view](https://drive.google.com/file/d/1bp0gDZTfOTO6bQa6TA8hv7_FLZZgSwxp/view))

- FL (<https://www.floridadisaster.org/dem/library/publications-and-guides/state-mitigation-strategy/>)
- GA (download from <https://gema.georgia.gov/hazard-mitigation-planning>)
- IA (view by contacting a state hazard mitigation planner at 515-725-3231)
- KY (<https://kyem.ky.gov/recovery/Pages/2018-Kentucky-Hazard-Mitigation-Plan-.aspx>)
- MO ([https://sema.dps.mo.gov/docs/programs/LRMF/mitigation/MO\\_Hazard\\_Mitigation\\_Plan\\_2023-2028.pdf](https://sema.dps.mo.gov/docs/programs/LRMF/mitigation/MO_Hazard_Mitigation_Plan_2023-2028.pdf))
- NV (<https://data.nbmgs.unr.edu/Public/NEHMP/StateOfNevadaEnhancedHazardMitigationPlan2018.pdf>)
- NC (<https://www.ncdps.gov/20230125-2023-nc-shmp-final-publicpdf/open>)
- ND (<https://www.des.nd.gov/sites/www/files/documents/Combined%20Enhanced%20Mitigation%20MAOP.pdf>)
- OH (<https://ema.ohio.gov/mitigation-recovery/mitigation/mitigation-planning/state-of-ohio-hazard-mitigation-plan/01-state-of-ohio-hazard-mitigation-plan>)
- PA (<https://www.pema.pa.gov/Mitigation/Planning/State-Hazard-Mitigation-Plan/2018/Documents/Pennsylvania-2018-State-Hazard-Mitigation-Plan.pdf>)
- SD (<https://dps.sd.gov/application/files/3215/6414/7583/south-dakota-hmp-april-2019.pdf>)
- WA ([https://mil.wa.gov/asset/651ec296d76a9/2023\\_WA\\_SEHMP\\_final\\_20231004.pdf](https://mil.wa.gov/asset/651ec296d76a9/2023_WA_SEHMP_final_20231004.pdf))
- WI (<https://wem.wi.gov/state-planning/>)

10. FEMA's State Mitigation Planning Policy Guide: [https://www.fema.gov/sites/default/files/documents/fema\\_state-mitigation-planning-policy-guide\\_042022.pdf](https://www.fema.gov/sites/default/files/documents/fema_state-mitigation-planning-policy-guide_042022.pdf)

11. FEMA's guide to risk assessment: [https://www.fema.gov/sites/default/files/documents/fema\\_state-mitigation-planning-key-topics-bulletin-risk-assessment\\_2022.pdf](https://www.fema.gov/sites/default/files/documents/fema_state-mitigation-planning-key-topics-bulletin-risk-assessment_2022.pdf)

12. "One dollar invested in mitigation = six dollars US saves in future costs." -FEMA

## More Mitigation Measures, More Savings



13. Professionals interested in pursuing the National Fire Protection Association's Certified Wildfire Mitigation Specialist credential can start here:

<https://www.nfpa.org/-/media/Files/Training/certification/CWMS/CWMSHandBook.ashx>.



(Image Source: NFPA)

# 15.

## DIY VEGETATION MANAGEMENT

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1. Never cut grass during a **Red Flag Warning**.
2. To prevent fire and liability issues, all residents and tenants will limit grounds maintenance to **allowed tasks in their designated area of responsibility**.
3. Before mowing, remove ground objects. Use a rock-screening rake or bow rake to remove all visible rocks.

Mowers propel small objects on the ground up to 200 mph from the mower's discharge chute. Metal blades striking rocks can create sparks and start fires.

4. **Lawnmowers** mow lawns, not weeds or dry grass.
5. **Trimming of large trees and removal work** is very hazardous and is to be performed by a qualified service contractor.
6. Lawnmowers, weed-eaters, chain saws, grinders, welders, tractors, and trimmers can all spark a fire. Keep a fire extinguisher and shovel ready to use and **call 911 immediately** in case of fire.
7. Because parts of lawnmowers can exceed 200 degrees Fahrenheit, refuel a gas mower only when it is cool.

# 16.

**DUTY**

**everyone™**

**IS RESPONSIBLE FOR FIRE  
PREPAREDNESS.**

# 17.

## EDUCATION

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In areas of high or very high risk of wildfire, all relevant portions of this booklet will be part of the process of every lease, rental agreement, employee hiring, signing for military quarters or barracks, and purchase of a residential or non-residential structure.

All resident guides will also contain this information as part of a **disaster preparedness** section.

1. Notify people about where to sign up for **emergency alerts**.
2. Inform people about where to look for **instructions in an emergency**.
3. Tell people where to access an up-to-date list with maps of regional **shelters and safe havens** and explain their differences.
  - In Hawaii, for example, our Safe Havens and Shelters with maps are listed here: <https://home.army.mil/hawaii/garrison/dptms/emergency-management>.
4. **Teach everyone “How to Check Smoke Detectors.”**

# TEST EVERY ONE OF YOUR SMOKE DETECTORS YOURSELF.

- **Press down and hold the smoke detector's test button for 4-5 seconds**, even if it is very loud and appears interconnected.
- Testing a smoke detector with only a **“press and release”** of the test button can trip the circuit breaker, compromising fire protection.
- Check the **circuit breaker** for your smoke detectors.
- If a smoke detector is over **ten years old**, replace it and test the new device. Using a permanent marker on the test button side of the device, you can write “Replace smoke detector on [date]” as a reminder.

**PUSHING THE TEST BUTTON ON A  
SMOKE DETECTOR AND HEARING  
OTHERS DOES NOT MEAN  
“THEY ALL TESTED GOOD.”**



# NOT ALL DEVICES THAT LOOK AND SOUND LIKE SMOKE DETECTORS CAN DETECT A FIRE.

- Ensure **interconnected smoke detectors of the same brand** are inside each bedroom, outside each sleeping area, and on every level (including the basement) of every residence. **When one sounds, they all sound.**
- Keep fresh smoke detector replacement **batteries** on hand and replace them every year.



• **Test each smoke detector after a battery change**, even if the devices seem interconnected. Press the test button and hold for 4-5 seconds to test the smoke detector.

• By checking smoke detectors, **one neighbor** can prevent a neighborhood catastrophe.



**IF A DEVICE DOES NOT HAVE  
A TEST BUTTON, IT IS NOT  
A SMOKE DETECTOR.**

(Image Source: Kidde)

5. Teach people what their **local warning siren** means.

- Here is an explanation of the Hawaii siren as an example:

James Barros, Administrator of Hawaii Emergency Management Agency, says somebody will activate the siren for tsunamis, hurricanes, dam failure/flash flooding, fire, volcanic eruption, or hazardous material exposure (Source: Hawaii News Now, 9/27/2023).

6. **Parents** should provide the relevant information in this section to children who may be home alone, taking college classes, or playing away from home during a warning siren.

- Knowing where the closest shelters are will be helpful to children unable to shelter safely at home. Post a (simple) map to the nearest shelters on the refrigerator, into the glove compartment of every vehicle, and on every cell phone.

7. Department of Defense personnel moving to any high or very high fire risk zone on the **FEMA National Fire Risk Index** (<https://hazards.fema.gov/nri/wildfire>) will be taught what a **Red Flag Warning** is.

8. Tell Department of Defense personnel moving to any duty station where to find information about **power outages**.

- For example, the informative power outage map for Oahu is here: <https://www.hawaiianelectric.com/safety-and-outages/power-outages/oahu-outage-map>.

9. Post a **map of regional shelter locations** at schools, child care centers, youth centers, family child care homes, sports and fitness facilities, dining establishments, hospitals and clinics, hotels and guest houses, libraries, arts and crafts centers, grocery stores, department centers, airports, and any

other places where people may hear a siren and be asking what is going on or where to go.

10. Show **educational videos** at newcomers' orientations, hospitals and clinics, dining facilities, guest houses, and other buildings with public waiting rooms or lounges with monitors.

11. Share **educational content** through TV channels and radio stations (e.g., Armed Forces Network [overseas]); websites (e.g., army.mil); newspapers (e.g., Army Times); social media; resident and guest guides for dwelling units (e.g., guest housing, barracks, family housing); soldier training, development, and formations; and housing office messaging.

12. Authorities having jurisdiction will review **policies and work orders for landscape and tree work contractors** to clarify and enforce requirements concerning removing and disposing of flammable debris, such as tree stumps, logs, tall cut grasses, large leaves, large pods, needles, cones, large seeds, and branches.

13. Warn people **not to drive or park on dry grass or brush**. Exhaust pipes, tires, engines, chains, brakes, catalytic converters, and mufflers can start fires you won't see – until it's too late!



(Image Source: Arizona Department of Transportation)

14. **Cooking** is the leading cause of home fires.

- Attend to all cooking. **Unattended cooking accounts for more than 33% of home fires.**



(Image Source: US Fire Administration)

- Thaw a turkey entirely before putting it into a turkey fryer.
- Put a solid cookie sheet under foil pans when baking a turkey.
- Keep the lid on a pot with burning contents.
- Clear the stove area of items that can burn (e.g., paper plates, kitchen towels, and potholders).
- Do not put water on a grease fire.

15. **Prepare** for emergencies:

Pack a **Go Bag**. Include a radio that will work in a power outage, a power bank for your phone, an updated list of shelters and safe havens with maps, and the call signs of **radio stations** to tune into during an emergency.

- For example, Hawaii emergency information broadcasts are on KSSK 590AM, KHPR 88.1FM, K203EL 88.5FM, KIPO 89.3FM, and KRTR 96.3FM.

A FEMA webinar by a former firefighter broke down an **evacuation checklist** into these four time-oriented tables. Other value-added tips he mentioned were to maintain LED lanterns with batteries and to prepare what one can do ahead of time to avoid trying to decide what to take during an actual evacuation.

### 15 Minute Warning

- Wallet, purse, keys, glasses
- Cell Phones, chargers
- Emergency cash, credit cards
- Pets, carriers, leashes, meds
- Clothes, shoes, hats for season
- Hearing aids, medications
- Flashlights, extra batteries
- Safety deposit box keys
- Checkbooks, bills to pay

### 30 Minute Warning

- Sleeping bags, pillows, blankets
- Drinking water (gallon jugs)
- Clothing for 3 days, shoes
- Personal Hygiene items, TP, soap
- Computer(s), monitor, laptop
- Jewelry, most valuable possessions
- Other meds & supplements
- Children's items, toys, books
- Pet food, dishes, bedding, litter

### 1 – Hour Warning

- Take or Safeguard guns & ammo
- Ice chest w/ ice, food, drinks
- 3-days food, special diet items
- Gloves, face masks
- Take or Safeguard guns & ammo
- 3-days food, special diet items
- Paper plates, cups utensils
- School items, homework, pencils/pens, paper, books
- Licenses, vehicle registration, deeds
- Insurance, financial, medical data, Wills, Powers of Atty
- Personal property list, photos & appraisal, documentation

### 2 – Hour Warning

- Albums, photos, home videos
- Family photos on display
- Military decorations, records mementoes, plaques
- Luggage (packed)
- Valuable items, cameras
- Primary cosmetics
- Secondary vehicles, RV
- Camping equipment, tent

Configure your phone to receive audible emergency notifications when your phone is on **sleep mode** or set to “**do not disturb.**”

Keep a **flashlight** with working batteries near the bed and **sturdy shoes** near the door.

Maintain your **vehicle** so that it can safely transport you in an emergency. Maintain fuel level at half a tank or more for an evacuation and back your vehicle into the driveway.

16. Provide the public with the following tips for **power outages**:

- After four hours without power, discard **refrigerated perishable food** (<https://www.fsis.usda.gov/news-events/news-press-releases/avoid-foodborne-illness-during-temporary-power-outages>).
- If **freezer** doors stay closed during a power outage, the food inside will remain safe for up to **48 hours** in a full freezer and **24 hours** in a half-full freezer (source: usda.gov).
- Some **renters’ insurance** policies reimburse for discarded food after a power outage.

17. Let people know about the international, state, and local **firecracker** regulations.

- **The International Fire Code states, “Fireworks shall not be used or possessed in wildland-urban interface areas.”** (A104 International Wildland- Urban Interface Code, 2021)
- Hawaii regulations, for example, are here: <https://fire.honolulu.gov/firecode/firecrackers/>
- Fireworks are not permitted on any military installation.

18. The [www.smokeybear.com](http://www.smokeybear.com) campaign and fire prevention programs conducted in target areas have reduced local fire occurrence by 60–70 percent.



- **Elementary** resources are here: <https://smokeybear.com/en/for-educators/elementary-resources>.
- **Middle school** resources are here: <https://smokeybear.com/en/for-educators/middle-school-resources>.
- Smokey **public service announcements** are here: <https://youtube.com/playlist?list=PLfQSpO72OaXa2UcwVjccTT8iG231TOldA&feature=shared>.

19. Opportunities for **public education campaigns** include Wildfire Awareness Week (the second week of April), National Night Out (October), Citizens Fire Academy, Children’s Fire Safe House (example: <https://youtu.be/RoA-AUKCsW4?feature=shared>), Fire Prevention Week (October), and targeted outreach with Code Enforcement and Neighborhood Enforcement Team to high-risk areas.

20. The US Department of Education, Department of Defense, community colleges and universities, and private **schools** like King Kamehameha Schools in Hawaii can integrate some of these issues into Health, Social Studies, and Hawaiian Language and Culture classes.

(Image Source: The Landmark Project)



# 18.

## ELECTRICAL POLES AND WIRES

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1. Have each electrical pole and wire **inspected by a certified utility forester** to receive accurate directives for vegetation management.
2. These directives are based on tree growth and structure, wind sway, line sag, tree species, environmental factors, proximity of the tree to an electrical line and line configuration, and irrigation.
3. The utility forester will always include a reasonable **margin of safety** above the absolute minimum clearance requirements.
4. Plant, maintain, and remove trees in compliance with guidance from the **local electric company and the International Wildland-Urban Interface Code (IWUIC)**.

For example, tree guidelines from Hawaiian Electric are here:

<https://www.hawaiianelectric.com/safety-and-outages/outdoor-safety/tree-trimming-safety>

and here:

[https://www.hawaiianelectric.com/documents/safety\\_and\\_outages/outdoor\\_safety/planting\\_the\\_right\\_tree\\_brochure.pdf](https://www.hawaiianelectric.com/documents/safety_and_outages/outdoor_safety/planting_the_right_tree_brochure.pdf)

The IWUIC states, “Vegetation that, at maturity, would grow to within 10 feet (3048 mm) of the energized conductors shall not be planted under or adjacent to energized power lines.” (A104.10)

# 19.

## EMERGENCY NOTIFICATION SYSTEMS

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1. People sending instructions in an emergency will limit messages from that source to the purpose of emergency notifications, evacuation instructions, and similar **urgent situations or disasters**.

For example, the only emails or texts people will receive from an emergency notification source will have an email address named “[Community Name] Emergency Alerts” and a subject name like “[Community Name] EVACUATION NOTICE” or “[Community Name] RED FLAG WARNING.” Emergency instructions would be the only content in the body of the email or text.



(Image Source: VC Alerts)

# USING AN EMERGENCY NOTIFICATION PLATFORM FOR COMMERCIAL MESSAGING RESULTS IN UNSUBSCRIBING PEOPLE WHO HAVE YET TO BE INFORMED THAT THIS IS WHERE THEY WILL RECEIVE EVACUATION INSTRUCTIONS.

2. Authorities sending instructions in an emergency will **conduct regular alert system tests and inform people of their testing schedule.**
3. People sending emergency alerts will **assess how many are receiving these alerts** and take action to help rectify significant discrepancies.
4. Greenwich Mean Time will be replaced with **local time values on local alert notifications** to prevent misunderstandings.
5. On military installations, evacuation instructions or emergency alerts will include **information about open gates, open shelters, and radio stations** to tune into for additional information.

# 20.

## EXITS

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1. All personnel should have **two exits** from a dwelling unit and a neighborhood.
2. **Keeping a second exit open during Red Flag Warnings** will enable first responders to enter that area quickly.
3. Don't wait to evacuate! People who smell smoke and self-evacuate through an exit can reduce the choke point as others respond to alerts.



### WILDFIRE EVACUATIONS CAN HAPPEN QUICKLY **BE READY, BE SET, GO!**

#### **Level 1 BE READY**

Prepare, monitor,  
and pack your  
valuables.

#### **Level 2 BE SET**

Be set to  
evacuate at a  
moments notice.

#### **Level 3 GO!**

*Leave  
Immediately!*

**Your local law enforcement agency orders evacuations. If you don't feel safe, do not wait for an official evacuation order.**

# 21.

## FUNDING

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1. Information about FEMA's **Building Resilient Infrastructure and Communities (BRIC), Public Assistance (PA), Hazard Mitigation(HMGP), Pre-Disaster Mitigation (PDM), Fire Management Assistance, and Public Assistance Programs (PA)** are here: <https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning/regulations-guidance> and <https://www.fema.gov/press-release/20230426/fema-hazard-mitigation-grants-404-and-406>.

- For more information, see <http://www.fema.gov/hazard-mitigation-grant-program> and [https://www.fema.gov/sites/default/files/documents/fema\\_wf2-mitigation-funding-opportunity-ignition-resistant-construction-residential\\_02.2021.pdf](https://www.fema.gov/sites/default/files/documents/fema_wf2-mitigation-funding-opportunity-ignition-resistant-construction-residential_02.2021.pdf).

3. Information about FEMA's **Fire Prevention and Safety Grants (FP&S)** is here: <https://www.fema.gov/grants/preparedness/firefighters/safety-awards>.

- Under recent funding cycles, priority has been given to community-appropriate comprehensive risk assessments and risk reduction planning. These assessments and planning projects focus on the whole community (versus individual home risk reduction/mitigation) and include risk assessments for Wildland-Urban Interface (WUI) areas,

Community Wildfire Protection Plans (CWPPs), and wildfire education and awareness programs.

4. Information about FEMA's **Emergency Management Performance Grant (EMPG)** is here: <https://www.fema.gov/grants/preparedness/emergency-management-performance>

5. The US Department of Housing and Urban Development provides **Community Development Block Grant (CDBG-MIT and CDBG-DR) funding** (<https://www.hudexchange.info/programs/cdbg/>) for mitigation, community resilience, and disaster recovery with long-term risk reduction.

6. **Coastal Resilience Grants** (<https://coast.noaa.gov/resilience-grant/>) from the National Oceanic and Atmospheric Administration, and the **National Tsunami Hazard Mitigation Program (NTHMP)** (<https://nws.weather.gov/nthmp/>) advance disaster preparedness projects and hazard mitigation planning in coastal communities through projects including the development of evacuation plans and maps, technical training and public education programs, preparedness and mitigation workshops, and outreach projects.

7. The **United States Forest Service (USFS) State Fire Assistance Program** is the primary federal mechanism providing financial and technical assistance for wildland fire management in states and communities. It remains a fundamental building block for state forestry agencies nationwide. SFA serves to help states and local communities with wildland firefighting response, capacity building, fire prevention education, and wildland fire mitigation. Contact your State Forester (<https://www.stateforesters.org/who-we-are/our-membership/>) or Key Contact ([https://www.fs.usda.gov/detail/r10/fire-aviation/?cid=fsbdev2\\_038580](https://www.fs.usda.gov/detail/r10/fire-aviation/?cid=fsbdev2_038580)) to apply.

8. The **US Department of the Interior, Fish and Wildlife Service (FWS) Coastal Program** (<https://www.fws.gov/>

program/coastal) directs technical and financial assistance in the form of cooperative agreements to coastal communities and landowners to protect wildlife habitat on public and private lands.

**9. State and other potential funding sources.** In Hawaii, for example, the Department of Accounting and General Services (DAGS) has a **Land Acquisition Program** [this may be helpful for a new fire department] and a **Shelter Upgrade Program**. The Department of Budget and Finance (DBF) has **Capital Improvement Budgets**. The Department of Health has an **All-Hazards Training and Exercise Program** and **Hospital Preparedness Program** to support the continuity of statewide healthcare system operations during wildfire. The Department of Land and Natural Resources (DLNR) has a **Fire Management Program**, a **Legacy Lands Conservation Program**, a **Watershed Partnership Program**, a **Natural Area Partnership Program (NAPP)**, and a **Natural Area Reserves System (NARS)** that includes objectives that support mitigation goals such as, “employ appropriate fire management strategies.” **Hawaii’s Emergency Management Agency** (WSSPC- Western States Seismic Policy Council) supports several mitigation initiatives in the state, including the **Hawai‘i Hazards Awareness and Resilience Program (HHARP)**. Other potential funding sources for Hawaii include:

- The **Coastal and Estuarine Land Program** (NOAA)
- **Coastal Zone Enhancement Program** (Section 309) (NOAA)
- **Conservation Reserve Enhancement Program** (Farm Service Agency)
- **Forest Legacy, Stewardship, State and Private Forestry Branch, and Wildland Urban Interface Grant Programs** (US Forest Service)
- **Hospital Preparedness Program** (US Department of Health & Human Services)
- **Weatherization Assistance Program** (US Department of Energy)



# 22.

## COORDINATION WITH OTHER LAND MANAGERS

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**[Local Point of Contact]** [military: Garrison Safety Office] will **coordinate** with federal, state, county, local, and private land managers when vegetation or structure mitigation is necessary to correct local fire code violations and fire hazards from the other side of property lines.



# 23.

## FENCING

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The best fireproof fencing options are **stone, masonry, and concrete.**

1. No combustible fencing is to be in the immediate ignition zone (within 0-5') of any structure.
2. Where it is impossible to replace all combustible fencing, every structure's first 5' will be replaced.
3. Any combustible fencing around playgrounds will be replaced with noncombustible fencing.
4. Keep vegetation away from all combustible fencing.



(Image Source: The Stone Trust)

# 24.

## FIRE ROADS

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1. **Inspect** fire roads protecting residential and non-residential structures every [#] months.
2. Clear access roads for emergency vehicle access to at least a **20' width and 13.5' height**. (Source: National Fire Protection Association, 01/08/2021)
3. Coordinate **vegetation management and leveling the ground** with the points of contact for each fire road.



(A tree obstructs a fire road near Fort Shafter and Kalihi Valley, Hawaii.)

# 25.

## FLAMMABLE OBJECT STORAGE

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**S**pontaneous combustion can occur in rags in as little as chemical changes occur with no way to release the heat. Store flammable objects (lawnmowers, oil or gas cans, propane tanks, and wood piles) away from the house. According to the Consumer Product Safety Commission, **mowers** stored in and near homes are responsible for devastating fires. **Propane tanks** must be stored upright, out of direct sunlight, and away from the house. Keep them at least ten feet from windows and air conditioners and at least five feet from driveways, crawl space openings, or other ventilation. **Store oil and gas cans** in a garage or shed. Keep **firewood and scrap wood** more than 50' from structures and clear vegetation within 10' of the wood ([https://www.sandiegocounty.gov/pds/fire\\_resistant.html](https://www.sandiegocounty.gov/pds/fire_resistant.html)). Stacks of wood can easily be ignited by flying embers and spread fire to any structure.

**EVEN WHEN PROPANE TANKS ARE  
EMPTIED, A SMALL AMOUNT OF  
EXPLOSIVE GAS REMAINS WITH  
FLAMMABLE FUMES.**

# 26.

## GRASS

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In the immediate (0-5'), intermediate (5-30'), and extended (30-200') zones, maintain grass at a **maximum height of 4"** and remove grass clippings. (Source: National Fire Protection Association)

**Spontaneous combustion** can occur in grass clippings (whether damp or dry, bagged or left on the ground) as chemical changes occur with no way to release the heat.

(Image Source: GreenView)

# 27.

## GROUND DEBRIS REMOVAL

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**A**reas serviced by grounds maintenance workers will be **cleared** of leaves, pods, pruned branches, tall grasses, and other flammable debris by proper disposal.

**Spontaneous combustion can occur in piles of dead vegetation (whether damp or dry, bagged or left on the ground) as chemical changes occur with no way to release the heat.** According to the National Fire Protection

Association, an estimated 14,070 fires occur annually from spontaneous combustion (Source: National Park Service), destroying homes and perpetuating wildfires.

- **Grass clippings ignited this house in cold weather.** <https://kdvr.com/news/local/spontaneous-combustion-sparks-large-house-fire/>
- **This article is about one of many wildfires caused by the spontaneous combustion of ground debris.** <https://auburnexaminer.com/lea-hill-brush-fire-caused-by-spontaneous-combustion/>

**WHETHER DEAD VEGETATION IS  
STANDING UP OR LYING DOWN,  
IT'S STILL A FIRE HAZARD!**

# 28.

## HIGHLY FLAMMABLE PLANTS

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Remove the highly flammable plants below **[edit list]** from all structural ignition zones and **[these sections of land]**.

- Acacia Koa
- Bamboo
- Cedar
- Cypress
- Eucalyptus
- Guinea grass
- Japanese honeysuckle
- Juniper
- Pine
- River birch
- Rosemary
- Scotch broom
- Feather grass
- Fir
- Gas plant
- Spruce
- Klu
- Broomsedge
- Sweet vernal grass
- Meadow ricegrass
- Red fescue
- Velvetgrass
- Thatching grass
- Koa haole
- Molasses grass
- Natal redtop
- Firetree
- Asian sword fern
- Hilo grass
- Buffelgrass
- Kikuyu grass
- Fountain grass
- Kiawe
- Bush beardgrass

# 29.

## IGNITION ZONES

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1. Persons owning, leasing, controlling, operating, or maintaining buildings or structures in, upon, or adjoining hazardous fire areas and persons owning, leasing, or controlling land adjacent to such buildings or structures shall, at all times, maintain an effective firebreak by removing and clearing flammable vegetation and combustible growth **(including tree stumps)** from areas within **30 feet** of such buildings or structures. (Source: 20-1.1 Fire Code of the City and County of Honolulu, adapted to include tree stumps.)
2. Maintain additional fire protection or firebreak by removing brush, flammable vegetation, and combustible growth **(including tree stumps)** located from **30 to 200 feet** from such buildings or structures when required by the Authorities Having Jurisdiction because of hazardous conditions causing a firebreak of only 30 feet, which is insufficient to provide reasonable fire safety. (Source: 20-1.1 Fire Code of the City and County of Honolulu, adapted to include a 200' extended zone and removal of tree stumps.)
  - The extended zone must be larger than 100 feet if it has a steep slope.
  - “If a home or community is on a hill, the extended zone may be drawn-out to 200 feet. This is because fire tends to burn faster uphill, pre-heating the vegetation above it. Creating a bigger buffer and managing vegetation on

the downhill side of a home is critical.” (Source: National Fire Protection Association)



At the 416 Fire near Durango, CO, in 2018, the work done by homeowners to create the defensible space buffer visible here allowed firefighters to safely conduct burnouts near homes in the fire’s path to eliminate fuel for the main fire and provide a secure control line.

3. Per the National Fire Protection Association, **all three ignition zones for houses, carports, and garages begin at their fences.** Make an exception if the fence is metal, concrete, stone, or masonry; in these cases, all three ignition zones will start at the perimeter of houses, carports, and garages.
4. Remove **vegetation within 10’ from sides of roads.**
5. Remove or replace **combustible outdoor furniture, doormats, and other accessories** with metal or non-combustible varieties.

(Image Source: Jerry McBride)



# CONCERNING THE EXCEPTION OF A SINGLE SPECIES OF ORNAMENTAL TREE IN THE INTERMEDIATE OR EXTENDED IGNITION ZONE OF A STRUCTURE:

It is best to clear all vegetation from every structure's immediate, intermediate, and extended ignition zones. Trees can form a means of rapidly transmitting fire from the native growth to any structure. Nonetheless, **certified fire inspectors** are authorized to make an exception for a single specimen of ornamental tree.

**These are guidelines to be mindful of regarding this single-tree exception option:**

- 1. Choose a tree species that is not highly flammable.**
- 2. Maintain tree crowns at least 10' from all structures.**
- 3. Maintain tree crowns so that they are at least 18' from other tree crowns on a slope under 40%. On slopes greater than 40%, maintain tree crowns at least 30' apart.**
- 4. Remove branches and fronds within 10' of the ground.**
- 5. Remove branches overhanging structures** to help prevent flames and embers from igniting rooftops and decks. (Sources: HB69.DOC—the tree encroachment law of the Hawaii State Legislature and readyforwildfire.org).

6. Remove **branches overhanging roads and vegetation within 10' from the sides of roads** to facilitate an emergency exit and clear an entrance for first responders.

7. **Palm trees with fibrous tissue or leaf stem bases along the trunk should be planted and maintained no closer than 30 feet from the tree's drip line to any combustible structure.** Brown fronds or branches at the top center where the new growth emerges indicate a problem that needs attention.

8. Remove **Banyan Tree** vines and aerial prop roots forming fuel ladders.

9. **Respect tree regulations in your area.** In Hawaii, for example, call (808) 656-3087 for a guide to **Exceptional Trees of the State of Hawaii** ([https://www.honolulu.gov/rep/site/dpr/hbg\\_docs/ROH\\_Chapter\\_41a1-25.pdf](https://www.honolulu.gov/rep/site/dpr/hbg_docs/ROH_Chapter_41a1-25.pdf)) and **only prune or remove trees over 15' between September 1st and May 31st** (Source: [https://home.army.mil/hawaii/application/files/7015/4992/9931/Tree\\_Cutting\\_Moratorium20\\_Jan\\_17.pdf](https://home.army.mil/hawaii/application/files/7015/4992/9931/Tree_Cutting_Moratorium20_Jan_17.pdf))

10. **Remove and dispose of all deadwood, scorched sections, and ground debris from the tree, including leaves, needles, seeds, pods, and fallen or pruned branches.**

11. **Remove the tree and its stump when unable to maintain it safely.** (See <https://youtu.be/of2raSjd3uE?feature=shared&t=193> from the US Fire Administration.)

12. Call the **housing or building manager** about tree work near residential or nonresidential structures.

13. To coordinate tree work on a **military installation's golf course**, call the Directorate of Family and Morale, Welfare, and Recreation.

# 30.

## INSPECTIONS

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1. All structures will be inspected every [#] months by certified fire inspectors and authorities having jurisdiction.
2. These inspections will include the entire perimeter of every structure and the storage of idle pallets and propane tanks.
3. Store all **pallets** according to this guidance from the National Fire Sprinkler Association (<https://nfsa.org/wp-content/uploads/2019/07/FireProtectionforPalletStorage.pdf>):

Preferred storage location for idle pallets:

- Store pallets outside and away from the main building or in a detached, low-value building.
- Refer to the National Fire Protection Association 230 Standard for General Storage for the recommended clearance between the outside, idle pallet storage, and the main building.

If you must store pallets inside, follow these guidelines:

- Eliminate or reduce the storage of idle combustible pallets.

- Limit the number of pallets on hand to the amount required for one day's operations.
- Prohibit storage of idle pallets in aisles or between racks.

For wood pallets:

- Store pallets flat and stack [with like pallet sizes in a stack] no higher than six feet; never stack them on end.



- Separate each pallet pile (no more than four stacks per pile) from other pallet piles by at least eight feet.
- Separate each pallet pile from other commodities by at least 25 feet.
- Store pallets in a cutoff room. Separate pallet storage from the remainder of the building with 3-hour-rated firewalls. The room should have at least one exterior wall, and storage should be no higher than 12 feet.

(Image Source: National Fire Protection Association)

- When pallets are not within a cutoff room, storage should be piled no higher than four feet. Separate each pallet pile (no more than two stacks per pile) from other pallet piles by at least eight feet. Separate each pallet pile from other commodities by at least 25 feet.

For both wood and plastic idle pallets:

- Ensure the sprinkler system complies with NFPA 230 Standard for General Storage.
4. Store all **propane tanks** outside, upright, and in the shade. Keep them at least ten feet from windows and air conditioners. They must be at least five feet from driveways, crawl space openings, or other ventilation. Empty propane tanks contain a small amount of explosive gas and flammable fumes.



(Image Source: [mysafetysign.com](http://mysafetysign.com))

- A leak can result in fatalities. <https://www.hawaiinewsnow.com/2018/10/23/after-deadly-kahala-fire-heres-warning-about-propane-tanks/>



**6. Accumulations of wood, hay, straw, weeds, litter, or combustible or flammable waste or rubbish of any type shall not be permitted to remain on a roof or in any yard, vacant lot, parking lot, or open space** (source: Section 304.1.1 of the International Fire Code).

**7. Weeds, grass, vines, or other growth capable of igniting and endangering property shall be cut and removed.**

Vegetation clearance requirements in wildland urban interface areas shall align with the International Wildland Urban Interface Code (source: Section 304.1.2 of the International Fire Code).

(Image Source: Village of Wind Point)

# INSPECTORS WILL PAY PARTICULAR ATTENTION TO AREAS WITH DITCHES, BUSHES, SMALL TREES, WALLS, PERIMETERS, AND THE BACKS OF BUILDINGS WHERE FLAMMABLE VEGETATION, INCLUDING LONG CUT GRASSES AND DEAD BRANCHES, ARE OFTEN LEFT.

8. Areas serviced by grounds maintenance workers will be **inspected** every [#] months by their immediate supervisors, the resident or tenant, the land manager, the fire department, and any other authorities having jurisdiction.



9. Grounds inspections will confirm the removing and disposing of flammable debris, such as tree stumps, logs, tall cut grasses, large leaves, needles and cones, large pods, large seeds, and branches.

(Image Source: AkitaBox)

# 31.

## MULCH AND FIRESCAPING OR HARDSCAPING

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In structural ignition zones, **remove mulch** including rubber, pine needles, “Gorilla Hair” and other shredded wood, wood nuggets and chips (**with or without fire retardant**), wheat straw, cocoa shells, and fine mulches, and **replace with a thin layer of rocks or a firescaping alternative**.

(Image Source: University of Nevada)



**Case Study:** In a study of the combustibility of mulches by the University of Nevada Cooperative Extension ([https://j0i68d.p3cdn1.secureserver.net/wp-content/uploads/2013/03/combustibility\\_landscape\\_mulches.pdf](https://j0i68d.p3cdn1.secureserver.net/wp-content/uploads/2013/03/combustibility_landscape_mulches.pdf)), **shredded rubber mulch** burned at the hottest average maximum temperature (more than 630° F measured at four inches above the mulch bed) and produced the greatest flame heights which averaged over 3 feet. It ignited easily and burned intensely for a prolonged period.

**Pine needles** were second only to shredded rubber mulch in terms of the cumulative value of combustion characteristics.

The most rapid rate of fire spread came from **shredded western red cedar**, traveling at an average rate of 47.9 feet per minute. Moderate temperatures averaging 380° F were measured four inches above the mulch bed, producing a relatively low average flame height of 11.4 inches. This mulch treatment also produced embers that moved beyond the plot perimeter.

**Spray-on fire retardant** suppressed fire spread for five to 10 minutes. After that, the fire behavior of the retardant-treated mulch was no different than that of the untreated mulch of the same type.

**Composted wood chips** demonstrated the least hazardous fire behavior of the eight mulch treatments tested. However, they are still considered combustible and could ignite wood siding, plant debris, and other combustible materials in contact with or immediately adjacent to the mulch bed. Also, the smoldering combustion produced by this mulch treatment may not be readily noticeable during a wildfire event and may go undetected by firefighters.

**Outdoor lights should not be left on for prolonged periods or overnight. Even LED lights can overheat and cause a fire.** (Source: Tri-State Generation and Transmission Association)

Smart picks for **firescaping or hardscaping** include:

- Masonry, gravel, or stone retaining wall
- Patio
- Swimming pool
- Deck
- Cement driveway and walkway
- Decorative rock, gravel, and stepping stone pathway
- Lava rocks
- Pea gravel
- Decomposed granite
- Pumice stones
- River rocks
- Sundial
- Metal bench
- Birdfeeder and birdbath



(Images Source: Bob Villa)





(Images  
Source:  
Amazon)

# 32.

## NATURAL AREAS

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1. Remove **dead vegetation** from natural areas.
2. **Combustible vegetation abutting parked cars** can ignite them, causing an explosion with embers to ignite vehicles and residential structures across the street. Create firebreaks of 30' in natural areas to remove these fuel paths.

(Photo: The Island Palm Communities homes at the top and bottom of this natural area behind Simpson Loop at Fort Shafter in Hawaii high-risk.)

**THE PRIMARY WAY STRUCTURES  
IGNITE IN WILDFIRES IS  
EMBERS,  
WHICH CAN TRAVEL  
MORE THAN ONE MILE IN THE WIND.**

# 33.

## NEW CONSTRUCTION AND RENOVATIONS

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1. When the county building code requires, protect all new one- and two-family dwellings throughout by an approved **automatic sprinkler system**.
2. Consider the following recommendations when building a structure in areas of high risk of wildfires:
  - **Class A fire-rated roofing products** offer the best protection, such as asphalt or composite shingles, metal, stone-coated metal, **concrete**, slate, and clay tiles.
  - Install noncombustible **exterior doors** such as metal, composites, or solid core construction.
  - Multiple layers of **gypsum board** do increase wall fire-resistance ratings.
  - **Bricks** are highly resistant to fires.
  - **Avoid fences with gaps. Concrete, stone, and masonry** are the FEMA-recommended fence materials. (Source: [https://defensiblespace.org/wp-content/uploads/2021/01/fema\\_p\\_737\\_fs\\_14.pdf](https://defensiblespace.org/wp-content/uploads/2021/01/fema_p_737_fs_14.pdf))

- **Inspect shingles or roof tiles** and replace or repair those that are loose or missing to prevent ember penetration.
- Embers can collect in **small nooks and crannies** and ignite combustible materials.
- Glass in windows, doors, and skylights can fracture and fall out when exposed to the radiant heat of a wildfire, leaving an opening for flames and firebrands to enter the structure. Therefore, use an **aluminum sub-frame with dual-pane, tempered, fire-resistant glass windows with metal wire reinforcement.**
- Use **fire-resistant siding** such as rock wall, brick, fiber cement, cement board, plaster, or stucco.
- Choose metal **gutters** fitted with gutter caps.
- Apply fire-resistant **primers and paint.**
- Avoid the use of **vinyl materials.** Although vinyl will not burn, the high temperature of a fire can cause it to melt or fall away, providing the fire with a direct path inside the structure.
- PVC and vinyl siding will melt or fall away in relatively low temperatures and **will not** provide adequate protection from fire damage.
- Wind can push firebrands through the vents in a structure's basement or crawl space. **The fireproof screening used on roof vents can also be installed to protect the vents in the basement or crawlspace.**

Sources: National Fire Protection Association (<https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Preparing-homes-for-wildfire>) and FEMA (<https://emilms.fema.gov/IS320/WM0103020text.htm>)

# 34.

## NEW VEGETATION

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1. **Avoid plants that contain aromatic oils, resins, waxes, or gummy sap.** These are among the quickest to ignite, even if they've been well-watered and cared for.

Those include acacia, bamboo, eucalyptus, Japanese honeysuckle, rosemary, Scotch broom, and gas plant, which gets its name from the flammable vapor its flowers and leaves exude.

Like river birch, trees with peeling, papery bark are generally more flammable than others. Fine-needled evergreen shrubs and trees contain volatile saps and resins.

These include cedar, cypress, fir, juniper, pine and spruce. Their dropped needles, left to dry on the ground – or the roof – further increase the fire risk.

Highly flammable grasses include buffel, molasses, and guinea. Those fueled the [Hawaii](#) fires.

Other highly flammable grasses are the fountain and heather grasses. Their ignitability increases when they stand dry over winter or during periods of drought; excessive dry heat evaporates moisture from the soil, the grasses, and many other kinds of plants, turning them into kindling.

2. Select deciduous trees, like ash, crabapple, dogwood, locust, maple, and oak, over fine-needed evergreens for the best fire resistance.

Like ice plants and sedums, succulents with water-filled leaves are slow burners, as are some groundcovers, like ajuga and creeping phlox. (Source: Michele Steinberg, Wildfire Division Director at the National Fire Protection Association)

3. The Washington State University Extension Service identifies these general plant characteristics as fire-resistant:

- High moisture content in leaves (these ignite and burn more slowly).
  - Little or no seasonal accumulation of dead vegetation.
  - Open branching habits (they provide less fuel for fires).
  - Fewer total branches and leaves (again, less fuel for fires).
  - Slow-growing, so less pruning is required (to keep an open structure).
  - Non-resinous material on the plant (i.e., stems, leaves, or needles that are not resinous, oily, or waxy).
4. In Hawaii, select Native Hawaiian plants.

Avoid highly flammable plants (See **28. HIGHLY FLAMMABLE PLANTS** and [https://www.fs.usda.gov/rm/pubs/rmrs\\_gtr042\\_6/rmrs\\_gtr042\\_6\\_225\\_242.pdf](https://www.fs.usda.gov/rm/pubs/rmrs_gtr042_6/rmrs_gtr042_6_225_242.pdf)).

Ryan Peralta (Program Manager for Forestry, State of Hawaii Division of Forestry and Wildlife) recommends the following:

- Understory - naupaka kuahiwi or pohinahina
- Shrub - 'a'ali'i
- Tree – kou or milo

For further information, see [https://home.army.mil/hawaii/application/files/4915/4992/9929/Landscaping\\_with\\_Native\\_Plants20\\_Jan\\_17.pdf](https://home.army.mil/hawaii/application/files/4915/4992/9929/Landscaping_with_Native_Plants20_Jan_17.pdf).



# 35.

## PLAYGROUNDS

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1. Remove **combustible vegetation** within [#] feet of playgrounds.
2. Use only **noncombustible fencing** at playgrounds.
3. Instead of mulch or any rubber surface (see **31: MULCH**), use 9-13" inches of pea gravel or sand as a playground substrate. Neither pea gravel nor sand meets American Disabilities Act accessibility standards. Both materials need to be maintained by raking.
  - Sand doesn't catch fire, is not combustible, melts at approximately 3090F, and requires yearly replacement. Nine inches of sand protects against injury for falls up to four feet. The type of sand for playgrounds is **play sand**, as it is cleaned and sifted before use.
  - **Pea gravel** is less likely to attract animal waste. It must be at least 12" deep under a playset up to 8' tall. Be careful when mowing nearby because a mower can project small rocks up to 200 mph through its chute.
4. According to the US Fire Administration, an estimated 4,900 playground fires were reported to fire departments in the United States every year from 2011 to 2013. **Grass, brush, and other natural vegetation accounted for 25%—or 3,675 fires.** (Source: USFA at FEMA)

# 36.

## ROOFS, GUTTERS, VENTS, CRAWLSPACES, AND WINDOW SCREENS

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1. The building manager will maintain structural elements most vulnerable to fire as serviceable and clear of flammable debris. This service will occur a minimum of every [#] months.
2. Use **Class A fire-rated roofing products** on all structures.
3. Enclose **rain gutters** or screen them with 1/8" corrosive-resistant metal mesh.
4. Install a fire damper in the duct at the plane of the roof assembly for **vents penetrating roofs**.
5. Install a fire damper within the ducts immediately behind the wall louvers of the **HVAC system vents**.
6. Replace combustible **eaves, soffits, and other vents** with metal alternatives.
7. Protect all exposed eaves, soffits, and other vents with **1/8" corrosive-resistant metal mesh**, and keep the mesh free of flammable debris.

8. For additional information about exposed eaves, soffits, and other vents, see:

- <https://www.usfa.fema.gov/downloads/pdf/publications/wildfire-pre-fire-planning-handout.pdf>
- <https://www.nfpa.org/-/media/Files/Firewise/Fact-sheets/FirewiseFactSheetsUnderEaves.ashx>
- [https://www.fema.gov/sites/default/files/documents/fema\\_p-737-vents-technical-fact-sheet-8.pdf](https://www.fema.gov/sites/default/files/documents/fema_p-737-vents-technical-fact-sheet-8.pdf)

9. To avoid flammable debris, embers, and hot gasses from entering vents, metal shutters, skirting, or other ignition-resistant materials will be used to cover **exposed eaves, soffits, openings of slatted foundations, and other vent openings.**

10. With **open eaves**, use a sealant (such as caulking) to cover gaps or enclose the underside of the roof overhang. In open eave construction, embers accumulate between blocking and joists and can ignite these members if sufficient accumulation occurs. Add an adequate amount of soffit vents as part of the project.

11. Clear **crawlspace** (areas within slats and openings in building foundations) of flammable debris every [#] months.



# 37.

## SMOKE DETECTORS: STRUCTURES

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1. Residents and tenants will check every smoke detector monthly in accordance with “How to Check Smoke Detectors” (see **15. Education** > 4. “How to Check Smoke Detectors” in this booklet).
2. Building managers will carry out an annual service in accordance with “**How to Check Smoke Detectors**” (see **15. Education** > 4. “How to Check Smoke Detectors” in this booklet).
3. When a smoke alarm sounds, get outside and stay outside.
4. While almost all American homes have at least one smoke alarm, **no smoke alarms were present or none operated in one-third of the reported home fires from 2014 through 2018. Almost three-fifths of home fire deaths resulted from fires in homes with no smoke alarms or no working smoke alarms.** (Source: National Fire Protection Agency)



(Image Source: Athens Daily Review)

# 38.

## SPARK ARRESTORS

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Install spark arrestors on off-road vehicles and all portable gasoline-powered equipment, including chainsaws, weed-eaters, and mowers. Spark temperatures range up to 3,000 F. Dry grasses will ignite at about 400 F.

A spark arrester is a mechanical device that traps or destroys hot exhaust particles expelled from an internal combustion engine. Since spark arresters prevented many fires, laws were subsequently passed to require spark arresters on certain types of engines. Spark arresters can be divided into multiposition small engine (MSE) and general purpose (GP).

Multiposition small-engine spark arresters are designed for engines used on hand-held equipment, such as chainsaws, string trimmers, blowers, and brush cutters.

Add oxygen and a combustible material to hot exhausted sparks, and the stage is set for a fire. This is why State (PRC 4442) and Federal law (CFR 261.52) require that off-highway vehicles must have a Forest Service approved GP spark arrester, properly installed and maintained on engines in a single position—engines of **tractors, harvesters, and other off-road vehicles.**

For more information on spark arresters, contact the spark arrester program leader of the United States Department of Agriculture at <http://www.fsweb.sdttdc.wo.fs.fed.us>.

# 39.

## VIGILANCE

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1. Other places in the US have a higher risk of wildfires than Lahaina on Maui.

**BETWEEN AUGUST 7-9 OF 2023, WIND GUSTS ON OAHU WERE UP TO 82 MPH, THE SAME SPEED AS THOSE ON MAUI ON THE DAY OF THE FIRE.**

(Quote Source: <https://www.weather.gov/hfo/windSummary20230809>)

**2. Honolulu County has a high risk of wildfires—higher than 99.4% of counties nationwide.** Comparatively, Maui County's risk of wildfires is higher than 83% of counties in the US (Source: [widfirerisk.org](http://widfirerisk.org)).

3. Tools' sparks, heat, and glue can ignite structures. Maintain buildings throughout the year rather than focusing on mitigation during drought.

**4. The fact that it is so difficult to clear neglected vegetation safely during drought points to the necessity of maintaining it throughout the year.**

5. For safety reasons, **helicopters don't do water drops at night, the time of most year-round illegal fireworks and arson.**

## **RISK OF WILDFIRES CAN BE YEAR-ROUND.**

6. Increase **police patrolling** during Red Flag Warnings, at night, and on the days and nights when illegal fireworks peak: July 4th-5th and December 31st-January 1st.

7. **Upslope and downslope effects** intensify fire ignition and spread.

- Wildfire spreads more quickly uphill. (Source: Western Fire Chief Association) When fire moves **upslope**, the fuel ahead of the flame front is closer to flames that preheat, dehydrate, and ignite.
- Fires burning downhill send burning materials below. This process is exacerbated by the **downslope effect** (<https://weather.com/news/weather/video/the-weather-behind-the-deadly-maui-fires>).



**A RED FLAG WARNING  
MEANS THAT CRITICAL FIRE  
WEATHER CONDITIONS  
ARE EITHER OCCURRING  
NOW, OR WILL SHORTLY.**

8. A combination of dry and warm conditions, low relative humidity, and winds above **20 mph** can elevate fire risk.

9. **Wet periods increase the quantity of available vegetative fuels (aka, “fuel loads”)**, escalating fire risk and the frequency that mitigation measures such as firebreaks and fuel reduction need to be applied. Ultimately, rainfall propagating more abundant vegetation increases wildfire risk during dry conditions.

**IN AREAS AT RISK OF WILDFIRE,  
ASSUMING THAT MORE RAIN WILL  
ALLEVIATE THE NEED TO MITIGATE IS  
FALSE.**

(Image Source: Lane County, OR)



10. Embers in a low-density community have resulted in structure ignitions 300 ft downwind. **In a high-density neighborhood, the ignition risk of adjacent properties is higher, even when only moderate winds of 10 mph are present.** It is difficult to contain a fully-involved structure fire. Fire testing conducted by Underwriters Laboratories (UL) has found a home with mostly synthetic-based furnishings can be entirely engulfed in less than 4 minutes.

## **A SINGLE UNHARDENED PROPERTY CAN JEOPARDIZE AN ENTIRE HIGH-DENSITY COMMUNITY.**



(During the Tumbleweed Fire in CA, vegetation to the left of the firebreak completely burned, and everything to its right was protected. Quote Source: <https://doi.org/10.6028/NIST.TN.2205>; Image Source: Wikipedia.)

# 40.

## WATER HOSES AND NOZZLE

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1. Equip every structure with one or more **long hoses** to reach from each external spigot to all foundational areas of the home, carport or garage, nonresidential building, and combustible fence.



2. On military installations, these hoses will be part of **annual safety inspections**, and the exchange of unserviceable hoses will be available at **Self Help**.

(Images Source: Amazon)

# 41.

## WOODEN PICNIC TABLES

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1. Replace wooden picnic tables with noncombustible alternatives in immediate and intermediate structural ignition zones.
2. In extended structural ignition zones, position wooden picnic tables at least [#] feet from any tree trunk, tree branches, and electrical pole, not under electrical wires.



(Image Source: Pottery Barn)

Soli Deo Gloria

## Wildfire Prevention Working Group

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**From:** Kean Wong <kean.wong@supporthawaii.org>  
**Sent:** Thursday, November 16, 2023 11:22 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** Public Testimony for the Wildfire Prevention Working Group

[You don't often get email from kean.wong@supporthawaii.org. Learn why this is important at <https://aka.ms/LearnAboutSenderIdentification> ]

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Testifier: Kean Wong (resident of Kohala Ranch, North Kohala, Hawai'i Island)

Working Group: Wildfire Prevention Working Group

Aloha,

After witnessing the recent fires at Kohala Ranch and Mauna Kea along with the tragedy in Lahaina, I (a Kohala Ranch resident) and my colleague Maria Leonardi (Waikoloa Village) decided to take an active role in improving the Island's capacity to manage wildfires. While wildfire prevention is an absolutely critical element in a safe and sustainable environment, we recognize that with the evolving effects of climate change there may be circumstances where even well-prepared communities may face the threat of wildfires. We have focused our efforts on preservation of life, through enabling early detection and alerting of fires and enhanced situational awareness during fire events.

We've been exploring the deployment of camera based technologies that can help firefighters and local communities with early detection and timely resource deployment. The ultimate goal is to create a network of cameras to provide advanced wildfire detection and alerts directly to both communities and first responders in the state's most at-risk areas, including in our local community along the Kohala coast. The technologies and platforms to perform this already exist, the costs are quite minimal, and are broadly deployed in western states on the mainland. We've met with Hawai'i County Mayor Roth and Fire Chief Todd and have received their full support to pull together a solution for the Big Island.

We have started meeting with some of the stakeholders in the Kohala coast resort and residential communities, and have enough initial support for the concept to where we would welcome involvement from any members of the committee, state, other counties, and any other parties whom may be interested in leveraging our findings or partnering in such a network.

We feel that it would be advantageous to have a coordinated network throughout at-risk areas of the state, and encourage the committee to include an early fire detection network, cameras on all fire trucks, and infrared (FLIR) cameras on select fire response equipment (such as helicopters) as part of their plan.

Mahalo,  
Kean Wong

## Wildfire Prevention Working Group

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**From:** Judy Mick <ppchawaii@yahoo.com>  
**Sent:** Thursday, November 16, 2023 11:38 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** Wildfire Prevention

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The acreage mauka of Lahaina was filled with taro loi fed by numerous streams before invaders diverted the water to their pineapple and sugar cane plantations. The loi could not survive and the stolen water was not even given back when the plantations closed. That's the reason all the invasive grasses are there and provided fuel for the sparks. Without fuel there can be no fire- the natural or manmade ignition is not the problem. Give West Maui back it's water. Judith Mick, Kailua, Oahu

## Wildfire Prevention Working Group

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**From:** James Rodrigues <sparkyrodrigues@icloud.com>  
**Sent:** Thursday, November 16, 2023 12:08 PM  
**To:** Wildfire Prevention Working Group; Sparky Rodrigues; lenasuzuki77@gmail.com; Lynette Cruz; James Rodrigues  
**Subject:** Testimony for wild fire thoughts

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Aloha

Fires risk continue raising year after year. Aggressive invasive alien species are out of control contributing to higher fire risk.

A focused effort and funding to engage ALL levels of community to slowly remove invasives, replant native ecosystems support water retention to assist aquifer recharge.

Ahupuaa management systems to support sustainable environment health. Resulting in higher humidity daily rain stream health rebirth from mountain top to near shore environments.

Remove all legal policy that may restrict entire process.

This is a slow process of restoration. No clear cut non natives. Companion Replanting natives species including long term growth plus supporting understory health.

Develop Hawaiian cultural appropriate plans science and education in all schools resulting in employment to rehab their community forest wetlands and dry lands.

There's NO need for years of planning JUST START NOW!

Sent from my iPhone

## Wildfire Prevention Working Group

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**From:** MRPILI <mrpili23@gmail.com>  
**Sent:** Thursday, November 16, 2023 12:47 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** wild fire preventiom

You don't often get email from mrpili23@gmail.com. [Learn why this is important](#)

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Try implementing the recommendations after 2018 wildfire rather than bury it.

Maui emergency workers should not all call in sick for the same long weekend.

A new "office of recovery" is the usual Hawaii government fakeout. More do nothing jobs. Maybe OR officials can come to work on Monday. Doesn't really matter in that all that will be recovered is more high paid soft do nothing jobs.

William "pili" mcgrath

Sent from [Mail](#) for Windows



## Wildfire Prevention Working Group

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**From:** Joan Campagna <jccfortbragg@gmail.com>  
**Sent:** Thursday, November 16, 2023 1:02 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Public Testimony - WFPWG

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### Public Comment from Joan Campagna, Waikoloa, HI

on the draft report from the  
Hawaii House of Representatives'

### Wildfire Prevention Working Group

November 1, 2023

I am a newer resident of Waikoloa Village, having moved here in May 2023 from Mendocino County, Northern California. It was as a resident in CA, and through my certification as a Master Gardener there, that my interest in fire mitigation first moved from disinterested observer to involved participant. So I moved here, to Waikoloa, with full knowledge of what some of the environmental issues would be. (Since moving here I have also completed the West Hawaii Master Gardener Program and joined the Waikoloa Village Firewise Committee.)

This report is, in my opinion, a very good start. It identifies what constitutes fire risks in ways that are accessible to the average reader, and gives clear, relatable, examples of how those risks affect every aspect of our environment: soil, water, air, vegetation, topography, species, the ocean.

**But most importantly it identifies the primary causes of ignition**, which is what we need to control in order to better control wildfires. And here is where the finger of responsibility points both directly and indirectly at human activity.

After reading the report, there are no recommendations I would disagree with. Some I think could be stated in even stronger terms. The following would be my additional recommendations:

1 - Prioritize and increase spending on wildfire prevention activities. Start adding into various public discussions what the cost would be replace given facilities or services if they had to be replaced. Guessing here that protecting an existing facility or service will always be cheaper than replacing it.

2 - Create school-based programs (grammar through college) that will allow students class credit for work on authorized wildfire prevention activities, both academically and in the field.

2 - Investigate ways to return unused/misused agricultural lands to their historical agricultural uses. Partner with food sustainability organizations? Increase taxes on private companies who continue to maintain land in ways known to facilitate wildfires?

3 - Enforce current building codes. Increase the penalties, financial or otherwise, of non-compliance for all parties in this chain: homeowners, contractors, material suppliers, governmental agencies.

4 - Work with insurance companies to educate the public on steps they can take to fire-harden their home and property. Quantify the risk to the public when compliance is not adhered to. (EX: I don't think the average person understands that live embers can travel up to 6 miles.)

Insurance companies should have the ability to raise rates for insured individuals if that individual insists on continuing behaviors that are known to increase fire risk to themselves and the public around them. (EX: increased rates for smokers vs. non-smokers). Investigate ways insurance companies may be able to help fund projects such as underground electrical lines. (Perhaps a rebate on behalf of policy holders who fire-harden their home could go into a common fund for this purpose - fewer fires the less the companies have to pay out; in theory the lower consumer rates could be.)

5 - Aggressively reduce ignition opportunities, no apologies. Ban private use of fireworks except over water and only on federally recognized holidays through the holiday weekend. Require permits by all users: individuals, commercial companies, other legally recognized organizations. (Perhaps a portion of some of the public beaches could be used for the evening for this purpose.)

6 - Increase the penalties, financial or otherwise, associated with violations of RED FLAG WARNING days. Change the language describing behaviors from "recommendation" to "required," and require NO outside uses of flame or behaviors at high risk of sparking a fire. Alternatively, keep the RED FLAG WARNING day as is and create a new category of RED FLAG ENFORCEMENT, or other appropriate title.

7 - Look to find a way to include on all educational materials a section titled: What You Can Do Right Now, on Your Own, for Pennies.

Submission to the hearing of the Wildfire Prevention Working Group of the Hawaii State House of Representatives scheduled for November 17 2023

C.P. Fryer

November 16 2023

## **WILDFIRE PREVENTION**

### **INTRODUCTION**

I am a resident of North Kohala on the Big Island whose home was affected by the August 8 2023 Akoni Pule Wildfire. The leeward side of North Kohala, once dry forest, is now savannah colonized by firegrass and kiawe. Failures in land management, electric and water supply, as well as social factors have put this area at very high risk for wildfires and, although we lost no lives or houses, the same elements that led to tragedy on Maui were and remain present here.

### **UNMANAGED GRASSLANDS**

Problem: The lower elevations of dry North Kohala are overrun with UNGRAZED buffelgrass (*Pennisetum ciliare*, *Cenchrus ciliaris*), a poor forage grass that is toxic to horses and produces dense mats of fuel. Gulches, unsuitable for livestock, show considerable accumulations of fuel.

Solutions:

- Revoke agricultural tax exemptions for ungrazed lands
- Limit tax exemptions to agricultural properties actively producing food for the Islands
- Allow exemptions to owners that are engaged in an approved rewilding project
- Apply for FEMA funds to clear the roadsides and gulches

### **PRIVATE USE OF SHORELINES**

Problem: The shoreline here is mostly seacliffs with 2 Beach County Parks and a State Historical Park in its 15 mile expanse, with some shoreline access to other areas from which wild fires seem to emanate. These may be ascribed to campfires, cigarettes, or catalytic converters igniting the ubiquitous buffelgrass.

Solutions:

- More public campgrounds?
- More subsidized homeless camps?
- Designated and nonflammable parking for shoreline access

### **UNRELIABLE ELECTRICAL SUPPLY**

Problem: The electricity is supplied by HECO, a for profit utility. North Kohala regularly experiences unplanned outages with every high wind, in spite of half of the neighborhoods here having underground power lines. Examples: August 8 2023, power outage onset about 1h after Akoni Pule wildfire reported, affecting residents' ability to prepare for evacuation and compromising water wells; August 31 2023, power outage during night of high wind; November 13 2023, power outage during night of high wind lasting 8h, with associated loss of Hawaiian Telecom service.

Solution:

- Bury electric lines, not people

### **UNRELIABLE WATER SUPPLY**

Problem: Many people on Hawaii rely on private 'public' utilities or rainwater catchment for this most basic of human needs. The neighborhoods of leeward North Kohala are serviced by a private utility operating 2 wells. On July 19 2023, both wells were lost, resulting in a short period of mandatory conservation during which water was trucked in for basic needs. One well was, very fortunately, recovered on July 20, but conservation measures and voluntary conservation were in force until the second well was repaired by the end of October.

During the fire, the one functioning well plus trucked-in water sufficed to provide water to the Fire Departments, but this was precarious, and might not have withstood further spread of the fire.

Our neighborhoods were less irrigated than usual for a prolonged period, adding to fire risk. Worse, many windward households rely solely on catchment systems and these are low due to current drought, likewise increasing fire risk in the high fuel load wet area, and of course creating a sense of water insecurity.

Solution:

- Island wide and redundant water systems need to be established.

## Public Testimony

### Wildfire Prevention Working Group

My name is Leslie Murashige and I would like to submit written testimony to the Wildfire Prevention Working Group. My short testimony is focused on the Draft Report dated November 1, 2023, in particular section #5, Wildfire Suppression.

As noted, Hawaii is abundant in forest land not easily accessible for expedient firefighting. There are numerous examples Hawaii has experienced over the years on most of the islands. The most recent was the Wahiawa fire that took 2 days before being declared contained. Using helicopters with a bucket system to fight fires is a great way to access difficult areas; however the capacity of water dropping is like using a water pistol to put out a fire.

I'm curious to know if Hawaii has looked at other aerial firefighting tools. Water bomber capacity can range from 1200 to 1400 gallons per drop and multiple drops in a short period of time. Another option to study is fire suppressant stations on several islands. They provide immediate disbursement and probably a better economical choice for the State.

If there is any interest on the working group's part to investigate aerial options, please feel free to contact me.

Thank you for your time and attention,

Les Murashige

[les.murashige@gmail.com](mailto:les.murashige@gmail.com)

(808)387-0557

**JOSH GREEN, M.D.**  
Governor

**SYLVIA LUKE**  
Lt. Governor



**SHARON HURD**  
Chairperson, Board of Agriculture

**DEXTER KISHIDA**  
Deputy to the Chairperson

State of Hawai'i  
**DEPARTMENT OF AGRICULTURE**  
KA 'OIHANA MAHI'AI  
1428 South King Street  
Honolulu, Hawai'i 96814-2512  
Phone: (808) 973-9600 FAX: (808) 973-9613

**TESTIMONY OF SHARON HURD  
CHAIRPERSON, BOARD OF AGRICULTURE**

**BEFORE THE HOUSE OF REPRESENTATIVES INTERIM WORKING GROUP ON  
WILDFIRE PREVENTION**

**FRIDAY, NOVEMBER 17, 2023  
10:00 A.M.**

**WILDFIRE PREVENTION WORKING GROUP  
DRAFT REPORT NOVEMBER 1, 2023**

Co-Chairs Ichiyama and Kila and Members of the Working Group,

On September 6, 2023, the House of Representatives formed an interim working group in response to evaluate specific topics related to the Lahaina Wildfire to make specific recommendations for appropriate legislative actions for the 2024 Regular Session.

On November 1, 2023, the Wildfire Prevention Working Group (WFPWG) released a draft report to identify the causes of wildfires and preventative action that may be taken to reduce the risk of wildfires throughout the State and prepare recommendations for appropriate legislative action.

The Hawaii Department of Agriculture (The Department) would like to submit **comments** relating to the recommendations on the following topics:

1. Reducing Fuel Loads
2. Wildfire Suppression
3. Wildfire Research



## **Reducing Fuel Loads**

Regarding incentives and policies to encourage mitigation actions on former or inactive agricultural land, the Department would like clarity as to whether “former” agricultural land refers to agricultural land that is now urbanized or currently cultivated agricultural land. United States Department of Agriculture-National Resources Conservation Service (USDA-NRCS) is working through the Federal Coordinating Committee (FCC), which contains leadership from United States Department of Defense-Readiness and Environmental Protection Integration Program (USDOD-REPI) and Department of Interior Fish and Wildlife Service (DOI-F&W) to work with state and local governments to develop and implement projects on the ground within designated sentinel landscapes.

## **Wildfire Suppression**

The Department would like to note that as stated in our response to email received from Representative Kila on behalf of the WFPWG, the Department currently does not have adequate resources, such as personnel or equipment to respond directly to wildfires. Our Animal Industry Division (AI) houses a groundskeeping section, which helps maintain the grounds of our Halawa facility by minimizing vegetation, as well as benefits other state departments located on premises.

Additionally, our Waimanalo, Kahuku, and Molokai (limited) irrigation systems have standpipes that can be utilized for firefighting. Various departments have also requested to dip into our reservoirs for firefighting, and we have allowed this on occasion for our larger reservoirs, but only if the water level was high enough to do so safely. Should Dipping buckets be used on our shallower reservoirs, there is concern for potential damage to reservoir liners which may lead to a dam breach and incur additional problems.

## **Wildfire Research**

The Department is in support of working collaboratively with local organizations, such as the Hawaii Seed Growers Network or The Seed Lab at the University of Hawaii at Manoa College of Tropical Agriculture and Human Resources (UH-CTAHR) to bolster the state's supply of seeds of native Hawaiian plants, especially plants that can be used in place of invasive grasses.

The Department is respectfully requesting funding for necessary equipment to maintain preparedness for minimal operation of its Department Operation Center (DOC) for a period up to 96 hours after a natural disaster, per Hawaii Emergency Management Agency (HI-EMA) protocol.

Thank you for the opportunity to testify on this matter.



**Statement of:**

**Stanley Osserman Jr., President, *Tigershark Energy Consulting Hawaii – Hydrogen, LLC.***

**WILDFIRE PREVENTION WORKING GROUP**

**17 November 2023 10:00 am State Capitol, Conference Room # 325**

**Co-Chair Rep. Linda Ichiyama**

**Co-Chair Rep. Darius K. Kila**

**WILDFIRE PREVENTION WORKING GROUP,**

As the former Director of the Hawaii Center for Advanced Transportation Technologies (2013-2019), Under the Hawaii Department of Business, Economic Development and Tourism (DBEDT) and appointed by Hawaii Revised Statute as the Hydrogen Implementation Coordinator for the state, I continue to serve our state by promoting the application of cutting edge technologies to replace fossil fuels and promote a resiliency and economic prosperity to our state, doing business as (DBA) Tigershark Energy Consulting Hawaii – Hydrogen, LLC. This testimony is being given, not as a paid consultant or lobbyist, but as a professional that has been promoting clean energy technology for the betterment of our state and nation for over a decade. I am not being compensated by any individual, company, organization, or group as I provide this testimony.

As HCATT Director, I worked for six years building a renewable microgrid at the 154<sup>th</sup> Wing, Hawaii Air National Guard (HIANG) started in 2015 to improve the resilience of the 154<sup>th</sup> Wing and it's many important missions, and particularly to support of the State of Hawaii in the aftermath of natural or man-made disasters. The Electrical Engineers at Burns and MacDonald opened my eyes to many possibilities, and of six years I did a weekly energy program on Think Tech Hawaii to tap into the smartest and most innovative talent in the Hawaii Clean Energy World.

Senator Daniel Inouye established HCATT over 30 years ago to ensure that Hawaii maintained an edge in developing sustainable transportation and grid systems in our state. HCATT has brought over \$40 million federal dollars to Hawaii, and the HIANG has garnered many millions

more from the Air Force and National Guard Bureau, because of the important technology that microgrids and distributed power grid designs bring to isolated communities, like our State. One of these projects was designed to demonstrate the “Flightline of the Future” for the USAF, and become a model for similar microgrids that could be replicated for Hawaii Emergency Management to assure resiliency in a statewide disaster.

As a lifelong resident of Kailua, and as the former commander of the Hawaii Air National Guard, I am well versed in Hawaii’s unique challenges when it comes to natural or man-made disasters, and as I reflect on the hurricanes, tsunamis and, most recently the Maui wild fires, I am compelled to comment on the importance of designing the robustness and resilience of our power distribution systems. Our current grids (on each island) have unique strengths and vulnerabilities, however asking HECO to design a disaster resistant grid is an exercise in futility. They continue to only look at ways to do the minimum to restore reliable power after a disaster, in the face of growing power demands and their duty to return profits to shareholders. This challenge is complex and as we try to meet our RPS Goals by 2045, we cannot delude ourselves into thinking that solar PV and wind power are the answer! Hawaii must develop approximately twice the current electrical generation capacity (including to meet transportation needs, including aviation and maritime), and we need to do so with multiple, “firm”, “baseload” 50-100 megawatt, fossil fuel free generation sites that can only be achieved with nuclear or geothermal power AND distributed around our island(s). For the life of me I cannot understand why the former AES Coal-fired power plant was not converted to binary geothermal!!!

The former AES plant is basically a HAZMAT site at this point, but already has the electrical infrastructure (Transformers, switches and high voltage lines) to reduce the cost of conversion. Geothermal has one of the highest “Capacity Factors” and “total return on investment” numbers in the power generation industry. The technology has proven itself for over 100 years and even here in Hawaii, where Puna Geothermal Venture has operated a “once controversial” system, it has proven it’s viability and safety. It needs to be proven at scale, on Oahu!!!

In summary, Oahu should have 4-5 geothermal plants (small footprint and cost compared to industrial solar PV and wind) and would reduce the high voltage lines needed to service HECO customers. This, in conjunction with community microgrids would reduce the HECO maintenance costs, expand their customer base, improve the resiliency in response to disasters

and reduce the risk associated with hundreds of miles of high voltage lines traversing mountains and roadways that sustain regular damage from traffic accidents, windblown debris and disasters. HECO needs to start getting serious about bringing our power grids into the 21<sup>st</sup> Century, and the Legislature needs to drive them to make major changes, quickly, not look to them as the “experts”. They are the experts of how it’s always been done and just fixing issues as they arise. If the recent Maui fires have not sent a message, shame on everyone that is trying to find an easy fix.

Mahalo for the opportunity to testify on this important proposed matter.

Stanley J. Osserman Jr., President

Tigershark Energy Consulting Hawaii – Hydrogen, LLC

1452 Ulupuni St, Kailua, HI 96734

Dear Wildfire Prevention Working Group,

Thank you for the opportunity to offer comments on your Wildland Prevention Group's draft report. I am a retired federal fire and emergency manager with 35 years working for the US Forest Service and an additional 4+ years working for another federal agency in emergency management. My comments are mainly from a wildland fire practitioner perspective and are not grouped in any way, I'll leave that up to you if you decide any should be included in your report.

This report is in effect your After Action Report for the Lahaina Fire. For any After Action Report to be useful it has to be followed by a Corrective Action Plan that uses unambiguous, specific, and detailed language using an action verb to describe the action to be taken, who is responsible to take the action, a specific due date for the action to be completed, and who is going to provide oversight to ensure the action is completed. In my opinion, for your report to be meaningful it has to be followed by legislation funding the initiatives described with specific budget language that matches the recommended corrective actions in your report. Otherwise, the report will sit on the shelf like all the other reports.

Some of these suggestions are down in the weeds and some or all of the fire departments may not like having internal department policy dictated to them, but the events in Lahaina clearly show the consequences of nonexistent, poor or poorly implemented policy and procedures. Here are my suggestions:

- Require the use of the Incident Command System on all incidents in the state per Homeland Security Presidential Directive 5 (HSPD-5).
- Clarify the role of the support and coordination role of an Emergency Operations Center with the command and control role of an on-scene Incident Commander and her/his Incident Management Team.
- Require all fire resources in the state be trained in the use of a fire shelter. Require that fire shelters be carried at all times outside of the vehicle on wildland fires.
- Pre-negotiate and review yearly state and county agreements and contracts for private services including heavy equipment, aircraft, catering and support services.
- Expand wildland fire training opportunities across all response agencies, with emphasis on meeting NIMS (National Incident Management System) and NWCG (National Wildfire Coordinating Group) mandates, standards and qualifications.
- Support setting a state staffing standard ensuring all county fire companies maintain staffing levels that, at minimum, meet NFPA standards.
- Establish protocols, train, maintain and provide resources for post-fire Burned Area Emergency Team (BAER) rehabilitation efforts, such as erosion control, planting appropriate species, and suppressing and managing weeds.
- Train, certify, and maintain a cadre of at least two wildland fire investigators per county.
- Investigate and determine the cause of every wildland fire.
- Initiate wildfire prevention plans based on actual fire causes so that those causes can be targeted for prevention efforts.
- Establish in state law or county ordinance the definition of "contain" and "control" as it pertains to wildland fire. Clearly state that fires shall not be abandoned until they are "controlled".

- Increase wildland fire training for both paid and volunteer firefighters, make it a bigger part of the fire academy, volunteer training, and part of the recurrent in-service training. Especially emphasize the 10 Standard Firefighting Orders and the 18 Watch Outs, structure protection engine tactics, Red Flag Warnings, weather, escape routes and safety zones, and fire shelter use.
- Establish Red Flag protocols to include bringing additional personnel on duty staffing reserve equipment, staging additional equipment and personnel in areas most likely to be affected, obtaining spot weather forecasts from the National Weather Service,
- Train all firefighters to flag off and not disturb wildland fire points of origin pending arrival of a trained investigator.
- Institute a mandatory review of the weather (and fire weather forecast if available) by fire captains every morning at every station.
- Require the use of an ICS 201 form on every incident where two or more units are on scene thereby requiring the Incident Commander to set objectives, establish an organization, list current and planned actions, document tactics and strategy, and have a summary of assigned resources including their locations and assignments.
- Use ICS terminology when responding to and when at scene of all incidents and events (especially identifying the Incident Commander and calling the Incident Commander by that title over the radio).
- Legislate minimum clearance standards for all structures in high fire hazard areas with a minimum of 30 feet in zone one, 100 feet in zone two.
- Require and create county-wide Incident Management Team(s) in each county that are fully trained and qualified to manage wildland fires and other larger scale incidents.
- Train county mayors on the delegation of authority process when using Incident Management Teams.
- Have the state become a signatory to the Cooperative Fire Protection Agreement with the federal wildland fire agencies under the Reciprocal Fire Protection Act.
- Fully utilize federal and state mitigation and support programs including all grant opportunities posted on grants.gov.
- Initiate and enter in a state-level personnel use and reimbursement agreement with the US Forest Service to allow state and county responders get experience on large mainland incidents while at the same time reimbursing parent agencies. This agreement should also be used to access training calendars and request wildland fire training slots for state and county personnel.

Thank you again for the opportunity to comment. I can be contacted at [rabecker@verizon.net](mailto:rabecker@verizon.net) if you have questions or need clarifications.

Sincerely,

/s/ Robert Becker  
Robert Becker  
Volcano, Hawaii

**LATE  
TESTIMONY**

## Wildfire Prevention Working Group

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**From:** Bridget's Gmail <bridgetagorchoo@gmail.com>  
**Sent:** Thursday, November 16, 2023 3:19 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Wildfire idea

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Aloha,

My husband is a retired HFD fire fighter. He had a great suggestion for fighting wildfires. Volunteers with hydrants fronting their properties could be issued fire hoses. The homeowners could be trained on how to install and use the hoses. In the case of a wild fire, volunteers would be notified by HFD on when to use them. I'm sure volunteers would be very motivated because they would be protecting their own neighborhoods, homes and businesses. I think is a great idea to help assist HFD in the case of a wildfire.

Bridget Agor-Choo  
(& Clayton Choo, Jr.)

Sent from my iPhone

## Wildfire Prevention Working Group

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**From:** David Geis <snomardave@mac.com>  
**Sent:** Thursday, November 16, 2023 3:38 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Silvertip Towers - Urban interface wildfire protection

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Hello,  
My name is David Geis

I came on to Maui vacation for 11 days this May we were so happy we stayed for 40 days.

My home has been north Lake Tahoe for the last 25 years. As you may be aware the Sierra has been extremely fire prone for the last decade.

Immediately upon arrival I recognized the obvious wildfire dangers and began putting together plans to reduce the danger and protect. At the end of our stay we rented an air bnb in Wailea. One afternoon we saw a plume of smoke up near what I believe would be Lahaina. An area of obvious concern due to massive amounts of dry grass and vegetation.

There was also a fire on the road to Hana. Both were controlled.

Before departing from our first trip we booked the same Airbnb for all of October and the first week of November of this year. Due to the Lahaina tragedy we almost cancelled, booking our plane tickets just 5 day before our departure.

The urban wild land interface is what our products are designed to protect. <https://silvertiptowers.com/>

In conjunction with fuel removal they could be used to protect property and lives all over the island. Especially those around golf course green belts.

Respectfully,

David Geis  
775.225.7584

Sent from my iPhone



**Statement of:**

**Stanley Osserman Jr., President, *Tigershark Energy Consulting Hawaii – Hydrogen, LLC.***

**WILDFIRE PREVENTION WORKING GROUP**

**17 November 2023 10:00 am State Capitol, Conference Room # 325**

**Co-Chair Rep. Linda Ichiyama**

**Co-Chair Rep. Darius K. Kila**

**WILDFIRE PREVENTION WORKING GROUP,**

As the former Director of the Hawaii Center for Advanced Transportation Technologies (2013-2019), Under the Hawaii Department of Business, Economic Development and Tourism (DBEDT) and appointed by Hawaii Revised Statute as the Hydrogen Implementation Coordinator for the state, I continue to serve our state by promoting the application of cutting edge technologies to replace fossil fuels and promote a resiliency and economic prosperity to our state, doing business as (DBA) Tigershark Energy Consulting Hawaii – Hydrogen, LLC. This testimony is being given, not as a paid consultant or lobbyist, but as a professional that has been promoting clean energy technology for the betterment of our state and nation for over a decade. I am not being compensated by any individual, company, organization, or group as I provide this testimony.

As HCATT Director, I worked for six years building a renewable microgrid at the 154<sup>th</sup> Wing, Hawaii Air National Guard (HIANG) started in 2015 to improve the resilience of the 154<sup>th</sup> Wing and it's many important missions, and particularly to support of the State of Hawaii in the aftermath of natural or man-made disasters. The Electrical Engineers at Burns and MacDonald opened my eyes to many possibilities, and of six years I did a weekly energy program on Think Tech Hawaii to tap into the smartest and most innovative talent in the Hawaii Clean Energy World.

Senator Daniel Inouye established HCATT over 30 years ago to ensure that Hawaii maintained an edge in developing sustainable transportation and grid systems in our state. HCATT has brought over \$40 million federal dollars to Hawaii, and the HIANG has garnered many millions

more from the Air Force and National Guard Bureau, because of the important technology that microgrids and distributed power grid designs bring to isolated communities, like our State. One of these projects was designed to demonstrate the “Flightline of the Future” for the USAF, and become a model for similar microgrids that could be replicated for Hawaii Emergency Management to assure resiliency in a statewide disaster.

As a lifelong resident of Kailua, and as the former commander of the Hawaii Air National Guard, I am well versed in Hawaii’s unique challenges when it comes to natural or man-made disasters, and as I reflect on the hurricanes, tsunamis and, most recently the Maui wild fires, I am compelled to comment on the importance of designing the robustness and resilience of our power distribution systems. Our current grids (on each island) have unique strengths and vulnerabilities, however asking HECO to design a disaster resistant grid is an exercise in futility. They continue to only look at ways to do the minimum to restore reliable power after a disaster, in the face of growing power demands and their duty to return profits to shareholders. This challenge is complex and as we try to meet our RPS Goals by 2045, we cannot delude ourselves into thinking that solar PV and wind power are the answer! Hawaii must develop approximately twice the current electrical generation capacity (including to meet transportation needs, including aviation and maritime), and we need to do so with multiple, “firm”, “baseload” 50-100 megawatt, fossil fuel free generation sites that can only be achieved with nuclear or geothermal power AND distributed around our island(s). For the life of me I cannot understand why the former AES Coal-fired power plant was not converted to binary geothermal!!!

The former AES plant is basically a HAZMAT site at this point, but already has the electrical infrastructure (Transformers, switches and high voltage lines) to reduce the cost of conversion. Geothermal has one of the highest “Capacity Factors” and “total return on investment” numbers in the power generation industry. The technology has proven itself for over 100 years and even here in Hawaii, where Puna Geothermal Venture has operated a “once controversial” system, it has proven it’s viability and safety. It needs to be proven at scale, on Oahu!!!

In summary, Oahu should have 4-5 geothermal plants (small footprint and cost compared to industrial solar PV and wind) and would reduce the high voltage lines needed to service HECO customers. This, in conjunction with community microgrids would reduce the HECO maintenance costs, expand their customer base, improve the resiliency in response to disasters

and reduce the risk associated with hundreds of miles of high voltage lines traversing mountains and roadways that sustain regular damage from traffic accidents, windblown debris and disasters. HECO needs to start getting serious about bringing our power grids into the 21<sup>st</sup> Century, and the Legislature needs to drive them to make major changes, quickly, not look to them as the “experts”. They are the experts of how it’s always been done and just fixing issues as they arise. If the recent Maui fires have not sent a message, shame on everyone that is trying to find an easy fix.

Mahalo for the opportunity to testify on this important proposed matter.

Stanley J. Osserman Jr., President

Tigershark Energy Consulting Hawaii – Hydrogen, LLC

1452 Ulupuni St, Kailua, HI 96734

## Wildfire Prevention Working Group

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**From:** DONALD ELDER <dnselder@gmail.com>  
**Sent:** Thursday, November 16, 2023 5:02 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Public testimony

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The degree to which media and government have accepted the climate change narrative as settled science is very concerning. Since pontificators of fire prevention feel compelled to include climate change in their points, the following is offered as balance.

A number of very learned Ph D climatologists disagree with this analysis, yet most blithely follow like sheep as media repeatedly repeats what AP dictates to them. One of the most articulate and thorough expositors on this subject is John Christy who has presented detailed evidence to congress on several occasions. Several other notable experts on this include Ralph Lindzen, Steve Koonin, and early prominent member of GreenPeace Patrick Moore. Below is a 2021 reference to research by John Christy (he shows that the dire climate models have been inaccurate for the recent decades and therefore, unreliable for the future):

A research paper that found a significant warming bias globally in the newest climate models and was co-authored by the interim vice president for research and economic development at The University of Alabama in Huntsville (UAH) has been cited by the American Geophysical Union (AGU) as among the top 10% most downloaded in 2020 from its journal *Earth and Space Science*.

“Pervasive Warming Bias in CMIP6 Tropospheric Layers” was co-authored by Dr. John Christy, a distinguished professor of atmospheric science who is also Alabama’s state climatologist and director of the Earth System Science Center (ESSC) at UAH, a part of the University of Alabama System. The article “helped raise the visibility of Earth and space sciences and inspired new research ideas,” according to AGU.

“This is cool – no pun intended,” says Dr. Christy, who was appointed to serve on the U.S. Environmental Protection Agency’s Science Advisory Board during the Trump administration.

“This was a pleasant surprise for Ross McKittrick and me,” he says. “Ross is an econometrician at the University of Guelph in Guelph, Ontario, Canada, with terrific statistical skills. I worked on assembling the observational datasets and converting the raw climate model output into a metric that matched what is observed from satellites and balloons.”

The scientists examined and updated historical data focusing on 1979-2014 from the newest Coupled Model Intercomparison Project Version 6 (CMIP6) climate model and found that what previously were excessive warming rates modeled only in the tropical troposphere are now being excessively modeled globally. All of their model runs warmed faster than observations in the lower troposphere and mid-troposphere, both in the tropics and globally.

They found that the temperature of the bulk atmosphere, as measured by satellites, is an ideal characteristic to monitor for the detection of climate change. As part of an ongoing joint project between UAH, the National Oceanic and Atmospheric Administration (NOAA) and NASA, Dr. Christy with ESSC Principal Research Scientist Dr. Roy Spencer publishes a monthly Global Temperature Report that uses data gathered by advanced microwave sounding units on NOAA, NASA and European satellites to produce temperature readings for almost all regions of the Earth.

“This is where the response to increasing greenhouse gases should be most noticeable,” says Dr. Christy of the bulk atmosphere.

In earlier work focused on the tropical upper troposphere – the region about 30,000 to 40,000 feet in altitude in the tropics – Dr. Christy and collaborators found that the region is critical because it serves as a key “vent” for releasing heat to space.

“We found that when the Earth warms, the amount of heat escaping to space is about twice the amount that climate models release,” he says. “In other words, this ‘vent’ region in the models does not open up enough to release the extra heat at the same rate as does the real world.”

As a result, he says that in climate models the extra heat is retained and eventually warms up the entire atmosphere down to the surface.

“The effectiveness of this ‘vent’ can be impaired if the models have too much water vapor and/or thin clouds in that region,” Dr. Christy says. “This is a simple hypothesis to explain why the models are warming up the atmosphere too fast.”

The researchers conclude that the bulk atmospheric measurement also avoids the imperfections that influence scattered surface thermometers, such as lack of coverage, contamination by urban effects and frequent site and instrument changes.

“One of the reasons for the popularity of the article is the policy implication,” Dr. Christy says. “Today, governments are putting into place expensive energy policies that are based on climate model projections.”

Since energy touches every aspect of our lives, he says that such policies have significant impact on everything we buy and everything we do.

“Our work demonstrates clearly that these policies are based on exaggerated notions of climate change,” Dr. Christy says. “In other words, we show that the models are too sensitive to the extra greenhouse gases that humans are placing into the atmosphere as a result of enhanced economic development, and so are not dependable for major energy-policy initiatives.”

## Details

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- UAH Office of the Vice President for Research and Economic Development
- UAH College of Science
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- UAH Department of Atmospheric and Earth Science

## **Contact**

**Dr. John Christy**

256.961.7763

[christy@nsstc.uah.edu](mailto:christy@nsstc.uah.edu)

## Wildfire Prevention Working Group

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**From:** Trish Sierer <trishsiererstudio@gmail.com>  
**Sent:** Thursday, November 16, 2023 5:24 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Wildfire prevention ideas

[You don't often get email from trishsiererstudio@gmail.com. Learn why this is important at <https://aka.ms/LearnAboutSenderIdentification> ]

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Aloha,

I'm a resident of Kailua Kona and my grandfather was a volunteer firefighter in Texas. Fire was something he always talked to us about and I even went to firefighting events with him.

Some of the things I would suggest here in Hawai'i is to:

- Ensure there is no glass or trash on our roadways. Glass in particular can spark a fire.
- Ban all fireworks during scientific droughts.
- Where possible, we should install electrical lines underground or away from major roads where people will escape.
- Many neighborhoods only have one road out. I've noticed this since the Maui fire that Hawai'i Island has many neighborhoods where, if there was a fire up mauka, people would get stuck leaving the area.
- When there is a fire, it will be dark, smoky, and hard to see the roads. There are many roads on Hawaii Island that don't have street lights or road reflectors. It would increase safety during a fire if we did the least expensive thing of installing high-quality new reflectors on all main roads or evacuation paths throughout the island.
- Ensure people without smart phones are notified of an oncoming fire. People with smart phones can get alerts but not everyone has a smart phone.

Trish Sierer  
75-5812 Kini Loop  
Kailua Kona, HI 96740

## Wildfire Prevention Working Group

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**From:** caroleannk <caroleannk@gmail.com>  
**Sent:** Thursday, November 16, 2023 7:01 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Fires on island

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Maybe if you have to close schools you close work offices so children are not home alone in case of wildfire evacuations. Also, have sirens sound differebt for wildfires.

Sent from my Galaxy



## Wildfire Prevention Working Group

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**From:** Steve Harris <slharris2000@mindspring.com>  
**Sent:** Thursday, November 16, 2023 7:04 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Causes and prevention of wildfires

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As a career firefighter for over 41 years, I would like to suggest a couple of things that could be done for prevention/ causes of wildfires. According to National Forestry Service and National Fire Protection Agency, 90% of wildfires are caused by carelessness of people, or a malfunction of equipment. The State of Hawaii is going to have to get control of homeless camps with open burning. A no burn day means just that. I read one lady had been arrested 7 times for arson. There is no punishment for breaking the law and endangering people's lives. I hear climate change was the cause. Climate change does not cause a fire, unless maybe a lightening strike. You have to have an ignition source, wind does not cause a fire to start or spread, unless it is already burning. If the camps can be taken care of and get the folks in shelters, which you guys have, then you have taken care of 90% of the wildfires.

## Wildfire Prevention Working Group

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**From:** Nicole Cristobal <nikkic@pouhanaonw.org>  
**Sent:** Thursday, November 16, 2023 7:20 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Testimony Wildfire Prevention Working Group

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**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Co-Chairs Ichiyama, Kila, and members of the Wildfire Prevention Working Group,

My name is Dr. Nikki Cristobal, the Policy and Research Specialist for the nonprofit organization Pouhana O Nā Wāhine; the first federally funded Domestic Violence Resource Center for Native Hawaiians.

Below is Pouhana O Nā Wāhine's testimony for the November 1, 2023 Draft Report of the Wildfire Prevention Working Group.

The research on gender-based violence and disasters overwhelmingly shows that gender-based violence increases during natural and human caused disasters. The research about natural disasters and gender-based violence specific to Hawai'i is sparse. However, we know that DVAC saw a 46% increase in DV contacts during COVID-19, with an increased use of services by Native Hawaiians (OHA et al., 2020). Native Hawaiians utilize DV services, such as filing for a TRO, at higher rates than other racial groups in Hawai'i, and as we saw during the pandemic these numbers become inflated in times of societal crisis (OHA et al., 2020). In a study by Hamada (1994) about the impacts of Hurricane Iniki on PTSD in children, he found that those who evacuated Kaua'i post-Iniki had higher scores on PTSD assessments than those who remained on Kaua'i. This finding potentially illuminates that children who are displaced from their community, especially in the rebuilding phase where community resilience is often learned, suffer psychosocial consequences (Hamada, 1994). We see that displacement is especially rampant in the Native Hawaiian community as well as other marginalized local communities. Socioeconomic status, race, and ethnicity are predictors of vulnerability in disaster situations, with historically marginalized communities (such as Native Hawaiians) more severely impacted (Becker et al., 2010). The wildfires displacing our Native Hawaiian and local families can exacerbate the damage already being done by ongoing economic displacement and it is important that wildfire recovery intentionally focus on preventing the further displacement of Lāhinā Native Hawaiian 'ohana and locals.

Studies from the U.S. show similar trends in gender-based violence during natural disasters. Following Hurricane Katrina, there was a 4x increase in Intimate Partner Violence (IPV) (Anastario, et al., 2009). In the post-Alabama and Missouri toranadoes, there was an increase in IPV and suicidal ideations amongst teens and young adults (Zuromski et al., 2018).

In studies in other places in the Pacific, we also see an increase in gender-based violence as characteristic of the post-disaster climate. In the weekend following the Canterbury, Aotearoa earthquake in 2010, there was a 53% increase in DV calls made to police (Houghton, 2009). DV calls made to police doubled and the workload for DV agencies tripled following the 2004 Whakatane, Aotearoa (New Zealand) flood (Houghton, 2009). In Australia, response to DV incidents increased drastically following the 2009 Black Saturday bushfires that caused the destruction of 2,030 houses and the relocation of 7,000 people (Parkson & Zara, 2013). In Haiti, an island community with a distinct Indigenous population with many parallels to Hawai'i, there was an increase in physical, psychological, sexual abuse during the post-Haiti earthquake (Lai et al., 2020).

Gender-based violence needs to be included in any and all Maui Wildfire Recovery plans and practices. Moreover, gender-based violence as it impacts Native Hawaiians and other marginalized communities such as filipinos and micronesians, need to be included as gender-based violence is not just gender-based it is also race-based. In solidarity with the HSCADV, Pouhana O Nā Wāhine requests the following:

1. The creation of a gender-based violence disaster response and emergency preparedness group;

2. Recognition of the “[2023](#)

[U.S. National Plan to End Gender-Based Violence](#)” specifically

**Pillar 6:**

**Emergency Preparedness and Crisis Response**

to inform the working group and future state response plans

Under “Pillar 6: Emergency Preparedness and Crisis Response” the plan addresses the following goals and strategic action items:

- 1.
- 2.
3. Address
4. Gender-Based Violence (GBV) and associated risks in federal emergency response and recovery efforts;
- 5.
- 6.
- 7.
8. Update
9. training programs for first responders that address crisis- or disaster-related GBV and trauma-informed care for GBV survivors;
- 10.
- 11.
- 12.
13. Depend
14. the research base on the links between climate-related disasters and heightened risk for GBV, particularly for historically marginalized and underserved populations.
- 15.

Narrowing in on action item #3 above, Pouhana O Nā Wāhine additionally requests:

A gender-based violence disaster response and emergency preparedness group that also includes researching and advocating for the needs of Native Hawaiian, Filipinx, and Micronesian women, girls, and mähū who we know are made more vulnerable to abuse post-Maui wildfire not only because of their gender but because of their race. The need to focus on "marginalized and underserved populations" has been identified at a national level and focusing on the populations mentioned will ensure place-based, culturally responsive action for the people of Lāhainā.

Mahalo for your service, time, and support.

Nikki Cristobal, Ph.D., on Behalf of Pouhana O Nā Wāhine

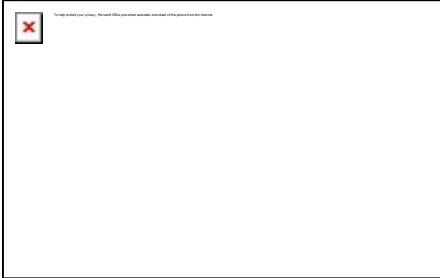
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**Nikki Cristobal, Ph.D.**

Schedule a [meeting](#) with me

*Policy & Research Specialist*

[nikkic@pouhanaonw.org](mailto:nikkic@pouhanaonw.org)



Testimony: Hawaii Pacific Advisory Group, to Hawaii House Working Group on Wildfire Prevention - November 17 2023 Honolulu Hawaii

## Part 1. Spoken report

To: Chairs Ichiyama and Kilo, and Members of Hawaii House Working Group on Wildfire Prevention

Hawaii Pacific Advisory Group, organized under NHO Hawaii Pacific Foundation, welcomes the opportunity to comment on the Working Group Draft Report dated Nov 1 2023.

Hawaii Pacific Advisory Group is a voluntary network of people who care about Hawaii and connect the dots, filling gaps in our areas of practice. We focus on fire intelligence, disaster logistics, personnel safety, regenerative reconstruction, and community inclusiveness. We invite anyone from the working group to observe or participate directly in our ongoing Maui work, via Zoom check-in 3x/week.

Our Advisory Group acknowledges the Working Group findings. We see these recommendations as markers of the critical dependence of island safety and continuity on informed land management, accurate hazard identification, preventative risk mitigation, and accountability. How we observe and manage that complex dependence in large part defines our operational success under duress.

Observation and effective management can best occur from an Aha Moku Council perspective, pushing that viewpoint forward into informed operations (DLNR, Act 228). Such an information-rich perspective would provide the foundation for, and enable the adoption of, Unified Command as our method of mitigation against and emergency response for wildfire.

Our Military relationships are important. A cooperative/collaborative partnership with DOD installations within the moku on common threats, and solutions, is essential, certainly for wildfire. Military participation in our Continuity of Operations is essential.

How do we get there? Hawaii Pacific Advisory Group strongly recommends that the Legislature fund improvements in Emergency Management Capability by creating System Modernization Programs that lead to an information-rich Unified Command based on Aha Moku perspective.

The Emergency Management System Modernization Program must include:

- 1 *Establishment of a Fire and All-Hazard Intelligence network, allowing leaders to make informed and timely decisions; exploiting new technologies such as unmanned drones, Lidar and hyperspectral sensors, predictive analytics, and expressive AI. These technologies digitize our world, analytically extending beyond our human experience, informing our decisions, and become our basis for reaching out to Academia and Industry to further improve. 80 kt winds, for example, are not within our experience and practice. How do we gain the necessary insight? Technology, modeling, and simulation. We must embrace useful technologies to extend our Island intelligence.*

2. *Durable communications is an essential foundation of Hazard Intelligence as we cannot rely on terrestrial communications powered from the grid. Commercial interests initiated technical testing 5 years ago, of a stratospheric drone 5G direct-to-cellphone communication service that would have served the entire State, on Lanai. But it slipped away from Hawaii, now operating in Africa. We should explore getting that back.*
3. *Adoption of threat measurement methods to guide mitigation and response prioritization is essential. Analytic threat systems such as FMCEA and STAMP are commonly used in aeronautics and other industry and can be adapted, especially applicable in a constrained island environment.*
4. *Employment of Unified Command operational authority to ensure balanced, rapid response with timely, accurate & actionable communication channels informing the public.*
5. *Development of a Structured Emergency Logistics System to be operated by SDOT, expediting inbound priority cargo and matching supply chain operations with County EMA material needs.*
6. *Adoption of advancements in faster extinguishing, communication, power, bio-remediation, and regenerative ahupuaa reconstruction to reduce future threats as Maui builds back, informed by Aha Moku thinking.*
7. *Incorporation of 'Island intelligence' in re-shaping Federal practices to align with unique Island circumstances*

We believe that Wildfire Working Group findings are fully embraced by our Advisory Group recommendations. We'd be delighted to work together on legislation. Thank you for the opportunity to speak.

Submitted on behalf of the Hawaii Pacific Advisory Group, mahalo a me ka pono.

Ted Ralston [Ted.ralston@HPFSPS.org](mailto:Ted.ralston@HPFSPS.org) 808.738.6814

## Part 2. Written submission

### Background:

The Lahaina wildfires were unprecedented, setting a precedent for future threats, which must be acknowledged in public policy and planning. HPAG, a volunteer organization organized by the Hawaii Pacific Foundation, recognizes the obligation to reduce threats, mitigate potential losses, and develop recovery and rebuild methods.

### Main Points:

☒ HPAG works in collaboration with national disaster and stability operations leaders to identify gaps and execute solutions.

☒ The testimony aligns with the Working Group's findings on gaps in supply and logistics domains, resulting from the lack of an integrated Unified Command (UC) system for major emergencies.

☒ HPAG has observed and addressed gaps within available resources, providing examples of delivering specialized PPE and collecting burn-zone intelligence data.

☒ There is an urgent need for a major discussion on logistics, inspired by supply distribution gaps identified by the Working Group and HPAG.

#### Objective:

Our objective is to improve the State's risk and threat management and abatement capability.

#### How:

We propose the use of unmanned systems for the following purposes:

- o Training in the use of Drone Surveillance and Fire mitigation methods (mapping, vegetation mitigation)

- o Risk assessment and Threat Management through surveillance, mapping, AI (trusted algorithm), data monitoring, predictive modeling, simulations, environmental impact assessments, and data collection.

We suggest adopting a Hub/Spoke model, with the airport serving as the command and control center, administration, monitoring, and management of the Unmanned Aerial Systems (UAS) statewide. Additionally, each on-island airport fire would have a certified representative for monthly meetings, trainings, and exercises.

#### Who:

We recommend utilizing existing government assets, including UH, Fire, DLNR, State and County Police, Solid Waste Management, National Guard, Public Works, and DOT.

Under the auspices of Lahaina Airport Fire, Firefighter George Purdy (HPAG member/Lanai Fire) is one of the few national Subject Matter Experts (SMEs) with the use of UAS for fire surveillance. He will train, manage, and monitor the program statewide with the control for the program based in Maui County.

If not done:

Failure to support modernization efforts risks:

- o A loss of more property that may be equivalent to what occurred in Maui, with an early estimate of \$5.5 billion in property and loss of tourism revenue.
- o Necessitating further expensive, just-in-time investments in fire stations and equipment.
- o Liability based on what has been learned about the diligence required for fire abatement and intelligence, and the result of negligence regarding the failure to implement wildfire prevention measures.
- o The generational community and societal impact of the loss of human life and communities caused by preventable wildfires.

Conclusion:

In conclusion, HPAG strongly recommends that the legislature supports improving Emergency Management Response by supporting Modernization Programs to allow for threat assessment, risk management, and an appropriate all-hazards response.

We believe that the deployment of unmanned systems, modernization of emergency response enhancement, and the adoption of our proposed measures will significantly enhance public safety and protect against the devastating impact of wildfires and other hazards.

Contact Information:

Ted Ralston [ted.ralston@hpfps.org](mailto:ted.ralston@hpfps.org) 808.738.6814





## Wildfire Prevention Working Group

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**From:** Chandra Bertsch <cbertsch10@gmail.com>  
**Sent:** Thursday, November 16, 2023 10:42 PM  
**To:** Wildfire Prevention Working Group  
**Subject:** Wildfire evacuation plans

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Aloha,

Please consider the desperate need for evacuation plans for many communities on Kaua'i. Growing up on the dry west side, it terrifies me if a wildfire cuts off our single lane highway at any point, there would literally be no where to go. If a fire or any other disaster occurred, it would be complete gridlock with everyone trying to evacuate at once. Then if the road was compromised somewhere that leaves no options at all. I suggest making it possible for the old cane roads to be utilized as evacuation routes in times of emergency.

Mahalo,

Chandra Bertsch  
Kalaheo, Kaua'i

## Wildfire Prevention Working Group

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**From:** Christopher Lum <christophercflum@gmail.com>  
**Sent:** Friday, November 17, 2023 1:15 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** Ideas for Fire Prevention

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Aloha Wildfire Prevention Working Group,

My name is Chris Lum, I am a Natural Resources Biologist with 8 years of experience working in Hawaii. In my opinion, Hawaii has a fuels problem stemming from a history of agriculture that has been neglected over the last few decades. In order to reduce fuel loads, they must be managed by either utilizing the land, or replaced with other vegetation that will compete with invasive grasses. For large private landowners, owning land that is covered with invasive grasses, mainly Guinea grass (*Megathyrsus maximus*) or Fountain grass (*Cenchrus setaceus*) should be disincentivised in the form of a tax that would then fund programs to stop fires before they get out of hand. Too often budget worries dont allow for immediate action deploying all resources available to extinguish a fire before it becomes extraordinarily large. Vegetation replacement programs should also be started so that there are native plants available for post fire restoration, reducing future fuel loads. Funding programs that both produce native plant propagules and pay for fuels management work is crucially important to reducing the severity of future fires across the state.

Mahalo for taking the time to read through these responses.

Sincerely,  
Chris Lum

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Christopher Lum  
Native Plant Restoration Biologist  
The Army Natural Resources Program on O'ahu  
RCUH/OVPRI Contractor  
Directorate of Public Works, Environmental Division, U.S. Army Garrison, Hawaii

## Wildfire Prevention Working Group

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**From:** Marisa D <dionnem@hawaii.edu>  
**Sent:** Friday, November 17, 2023 7:45 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** Wildfire prevention suggestion

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As temperatures continue to rise, practicing and encouraging water conservation and permaculture strategies such as street curb water catchment areas and swales on dry lands to help capture rain water runoff helps to moisturize the soil and capture water. Plant drought resistant trees and fire resistant plants.

Mahalo.

## Wildfire Prevention Working Group

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**From:** Claudine Tomasa <ctomasa@gmail.com>  
**Sent:** Friday, November 17, 2023 7:48 AM  
**To:** Wildfire Prevention Working Group  
**Subject:** Late Public Testimony in Support of WFPWG Draft Report with Recommendation

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### Late Public Testimony in Support of WFPWG Draft Report with Recommendation

**From:** Claudine Tomasa, Kailua Resident

**Date:** November 17, 2023

Aloha Co Chairs Linda Uchiyama, Darius Kila and Members of the House of Representatives Wildfire Prevention Working Group

My name is Claudine Tomasa, and I am testifying in support of the WFPWG Draft Report with recommendation.

I am a Kailua resident, and my home is located on Mokapu Blvd. adjacent to the Kalaheo Hillside - Home of Kalaheo High School. Every morning I am greeted by the majestic view of that famous rock at the top -which every graduating class of Kalaheo High School paints their year.

Although Kalaheo Hillside is normally dry, it is heavily populated. We have experienced two wildfire incidents in the past - the latest occurred in May 2012. Thanks to the hard work of our First Responders - the fire was contained.

It is for this reason that I am requesting that your committee include a "short and long term plan" leading to the creation of a State of Hawaii Fire Marshal.

Please consider a short term plan that will incorporate laws supporting enforcement authority for current county Fire Departments. This will allow county fire departments jurisdiction of state institutions found to be breaching state fire code i.e. incident of broken fire alarm system in Konawaena Elementary School not fixed for 2 years since county fire department could not force the school to fix it - no jurisdiction over schools run by the state department of education.

Meanwhile, work to reestablish the Office of the State of Hawaii Fire Marshal effective immediately.

Thank you for allowing me the opportunity to testify in support of the WFPWG Draft Report with recommendation.

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**CLAUDINE M. TOMASA**  
**808 783 5396 / WH6ETB**  
*survive to thrive, survive to serve*