

Community Wildfire Protection Plan

GEHRICKE ROAD FIRE SAFE COUNCIL
2023



GEHRICKE RD
FireSafe
COUNCIL



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DISCLAIMER

This CWPP is a ‘living document’ and should continue to be evaluated. Projects included at **Appendix B** should be re-evaluated and updated every year. Additionally, the CWPP document itself should be updated every five (5) years. This document should not be seen as the culminating project of a planning process, but a resource and the starting point from which to pursue future funding and organizing opportunities.

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view(s) of any governmental agency, organization, corporation or individual with which the authors may be affiliated.

This publication is designed to provide accurate and authoritative information regarding the subject matter covered. This Community Wildfire Prevention Plan (the Plan) is a work in progress. Various changes are anticipated throughout the Plan over the next several years.

Readers are urged to consult with their own agencies having jurisdiction regarding the use or implementation of this Plan, as well as their own legal counsel on matters of concern.






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This CWPP is not to be construed as indicative of project “activity” as defined under the “Community Guide to the California Environmental Quality Act, Chapter Three, Projects Subject to CEQA.” Any actual project activities undertaken that meet this definition of project activity and are undertaken by the CWPP participants or agencies listed shall meet local, state and federal environmental compliance requirements.

Because this CWPP does not legally commit any public agency to a specific course of action or conduct and thus, is not a project subject to CEQA or NEPA. However, if and once grant funding is received from state or federal agencies and prior to work performed pursuant to the Sonoma County CWPP or a local CWPP, or prior to issuance of discretionary permits or other entitlements by any public agencies to which CEQA or NEPA may apply, the lead agency must consider whether the proposed activity is a project under CEQA or NEPA. If the lead agency determines the proposed activity is a project subject to CEQA or NEPA, the lead agency must perform environmental review pursuant to CEQA or NEPA.

SIGNATORIES

The following entities attest that the standards listed above are proposed to be met and mutually accept the content of this Community Wildfire Protection Plan:

 Susan Gorin (May 12, 2023 15:34 PDT) COUNTY OF SONOMA District Five Supervisor <i>Susan Gorin, County Supervisor</i>	<u>05/12/2023</u> DATE
 Raymond Mulas (Jun 22, 2023 18:59 PDT) LOCAL FIRE AGENCY Schell Vista Fire District <i>Ray Mulas, Fire Chief</i>	<u>06/22/2023</u> DATE
 STATE AGENCY California Department of Forestry and Fire Protection (CAL FIRE) <i>Michael Marcucci, Unit Chief</i>	<u>05/11/2023</u> DATE
 Roberta MacIntyre (Jun 22, 2023 23:05 PDT) FIRE SAFE SONOMA <i>Roberta MacIntyre, Board President/CEO</i>	<u>06/22/2023</u> DATE
 GEHRICKE RD COMMUNITY REPRESENTATIVE Gehricke Road Fire Safe Council Representative <i>Brietta Linney, Gehricke Road Fire Safe Council President</i>	<u>07/17/2023</u> DATE

ACKNOWLEDGEMENTS

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The Gehricke Road Fire Safe Council wishes to thank all of those who have helped us through the process of creating, writing, and editing this Community Wildfire Protection Plan (CWPP). Those who helped include but are not limited to the following individuals and agencies:

- **Roberta MacIntyre**, *Board President of Fire Safe Sonoma, Inc.*
- **Fire Safe Sonoma**
- **Dave Duncan**, *Grove Street Fire Safe Council*
- **CAL FIRE**
- **WRA Environmental Consultants**
- **Sonoma County AG + Open Space**
- **Individuals and groups from our community** who have offered their support, expertise, and insights to help reduce wildfire risks.

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INTRODUCTION

This Community Wildfire Protection Plan (CWPP), created by the Gehricke Road Fire Safe Council Inc. (GRFSC), was collaboratively developed with Fire Safe Sonoma and WRA Environmental Consultants. This plan incorporates input from Federal, State, and local governments, community-based groups, landowners, and other interested persons, has identified, prioritized treatment areas and mitigation strategies, and treatments and provides recommended measures to reduce the ignitability of structures.

This CWPP provides a general overview and assessment of wildfire risks and communitywide assets in the Gehricke Road neighborhood in East Sonoma County. Using input from local government, fire agencies, landowners, and other interested community stakeholders a set of priority tasks was developed to increase fire resiliency. Once accomplished, these tasks may reduce the potential loss of human life, property, and natural and cultural resources due to wildfire.

The GRFSC's CWPP meets the three requirements of the Federal Healthy Forests Restoration Act of 2003: 1) to be developed collaboratively with input from fire agencies and the community; 2) to identify and prioritize treatment areas and mitigation strategies and treatments, and 3) to recommend measures to reduce the ignitability of structures.

The GRFSC will continue to implement projects, intends to assess the progress annually and to invite agencies and landowners to submit projects that provide community protection.

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SECTION I: COMMUNITY OVERVIEW

SONOMA COUNTY

The combination of highly flammable fuel, long dry summers and steep slopes creates a significant natural hazard of large wildland fires in many areas of Sonoma County. Wildland fire season in Sonoma County spans the months after the last spring rains have fallen and until the first fall or winter rains occur. The months of August, September and October have the greatest potential for wildland fires as vegetation dries out, humidity levels fall, and offshore winds blow. However, due to the effects of climate change, wildfire season is longer, and fires can occur at any time of year in the county.

GEHRICKE ROAD FIRE SAFE COUNCIL

The Gehricke Road Fire Safe Council (GRFSC) is a 501(c)(3) nonprofit organization comprised of community volunteers whose mission is to educate the community about wildfire preparedness and implement projects that reduce our risk during a wildfire.

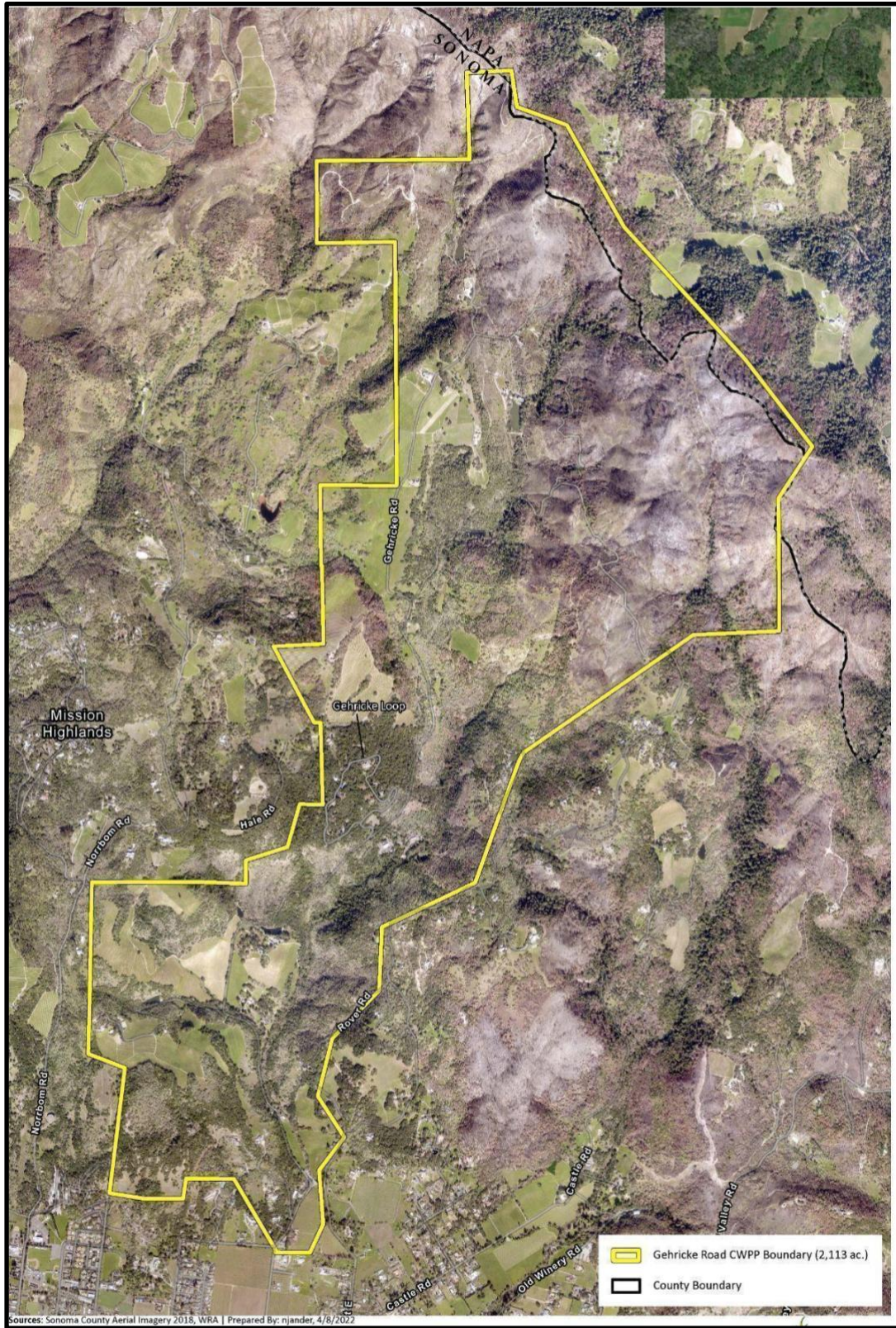
At the time of this Community Wildfire Protection Plan (CWPP), the board officers are as follows:

- **Brietta Linney**, *President*
- **Connie McCann**, *Vice President*
- **Suzanne Harmon**, *Treasurer*
- **Erin Linney**, *Secretary*
- **Pat Summers**, *Board Member*

The GRFSC will continue to implement projects, assess the progress, and invite agencies and landowners to submit projects that provide community protection.

GEHRICKE ROAD FIRE SAFE COUNCIL AREA

This CWPP Plan Area covers approximately 2,113 acres with approximately 42 homes, located within the rural residential parcels located on Gehricke Road and Gehricke Loop, located north of the City of Sonoma in unincorporated Sonoma County. It is nestled in the center of The Ranch to the east, Mission Highlands to the west, and the historic community of Sonoma to the south.



WEATHER

Most of the year the area experiences strong winds which can break limbs and topple trees, but generally brings cool, damp weather and fog from the Coast. During the fire season (approximately June–October), winds can also be extremely strong, bringing hot dry air from the interior valleys, called the Diablo winds. This is when fire danger is at its highest, and the area is often alerted to a Red Flag Warning by NOAA.

Multiple natural factors contribute to the fire hazard: drought drying out the vegetation, intermittent years of copious rain bringing increased growth of vegetation including underbrush, and high winds further drying the vegetation while potentially carrying embers and flames. The winds also tend to cause wires to meet tree branches and put stress on transmission boxes, both of which can ignite fires.

LAND USE: WILDLAND/URBAN INTERFACE/INTERMIX (WUI) CONDITIONS

The term “WUI” comprises both Wildland Urban Interface and Intermix, but there is a distinction. This plan uses the term Wildland Interface/Intermix as it is defined in the Federal Register (66:751, 2001) report on WUI communities at risk from fire (USDA & USDI< 2001) as follows:

“The *Interface* Community exists where structures directly abut wildland fuels. There is a clear line of demarcation between residential, business and public structures and wildland fuels. Wildland fuels do not generally continue into the developed area. The development density for an interface community is usually three or more structures per acre, with shared municipal services. Fire protection is generally provided by a local government fire department with the responsibility to protect the structure from both an interior and an advancing wildland fire. An alternative definition of interface community emphasizes a population density of 250 or more people per square mile.

The *Intermix* Community exists where structures are scattered throughout a wildland area. There is no clear line of demarcation, wildland fuels are continuous outside of and within the developed area. The development density in the intermix ranges from structures very close together to one structure per 40 acres. Fire protection districts funded by various taxing authorities normally provide life and property fire protection and may also have wildland fire protection responsibilities. An alternative definition of intermix community emphasizes a population density of between 28-250 people per square mile.” (<https://www.nrs.fs.fed.us/>)

Using this definition, most of the Gehricke Road Fire Safe Council Community Wildfire Protection Plan area is designated as Wildland/Urban Intermix except the Gehricke Road Loop which is designated Interface.

VEGETATION

Gehricke Road CWPP boundaries are main hardwood forest (49%), agriculture (9%), conifer forest (8%), and herbaceous (8%). For additional vegetation, see *Map 3. Vegetation Types* in **Appendix C**.

HUMAN FACTORS

Human factors contributing to the wildfire hazard risk of the properties within the Gehricke Road CWPP Study Area are multiple and diverse:

- Housing and construction in wildlands.
- Overgrown underbrush and trees around residences, roads, and power lines.
- Burn piles: improper supervision or piles that are made too large increase the risk of starting an uncontrolled fire.
- Lack of readily available fire extinguishers such as in vehicles, homes, or garages, and with large equipment such as tractors.
- Failure to maintain grass levels at or below four inches creates more fire fuel.
- Equipment use and malfunctions: Equipment such as mowers, tractors, chainsaws, and weed whackers can create sparks that may ignite a fire.
- Poorly serviced power lines can create sparks when power is restored.
- Downed power lines can start a fire if power is not shut off.
- Chimneys that are not well maintained can release larger embers that have potential to ignite a fire.
- Buildup of creosote in a chimney can start a house fire.
- Failure to remove leaves and debris from gutters and vents under the eaves increase the risk of embers igniting and causing a house fire.
- Improper storage of firewood, propane containers, and gasoline containers can become a fire hazard.
- Houses surrounded by landscaped shrubs and trees within the first five feet provide ladder fuel.
- Absentee, part-time, or vacation rental owners who fail to frequently inspect and manage their property for fire hazards.
- Guests of vacation rentals who are unfamiliar with fire-safe practices, red flag warnings, and may have negligent behavior pose a higher risk of starting a fire.
- Narrow roadway can cause unfamiliar drivers (and even knowledgeable residents) to pull off the road into dried grass or a ditch, leading to tailpipe ignition.
- Vehicles driving or parking in dry grass can spark fires. A fire can start from the hot parts of a catalytic converter or the exhaust carbon from the tailpipe, which was the cause of a fire on Gehricke Road in 2017.
- Vehicles hitting utility poles, causing wires to cross or fall to the ground, or the car to ignite, can start fires.
- Failure to follow guidelines during Red Flag Warnings
- Negligently discarded cigarettes
- Litter such as bottles can act as a magnified glass and ignite a fire
- Use of fireworks

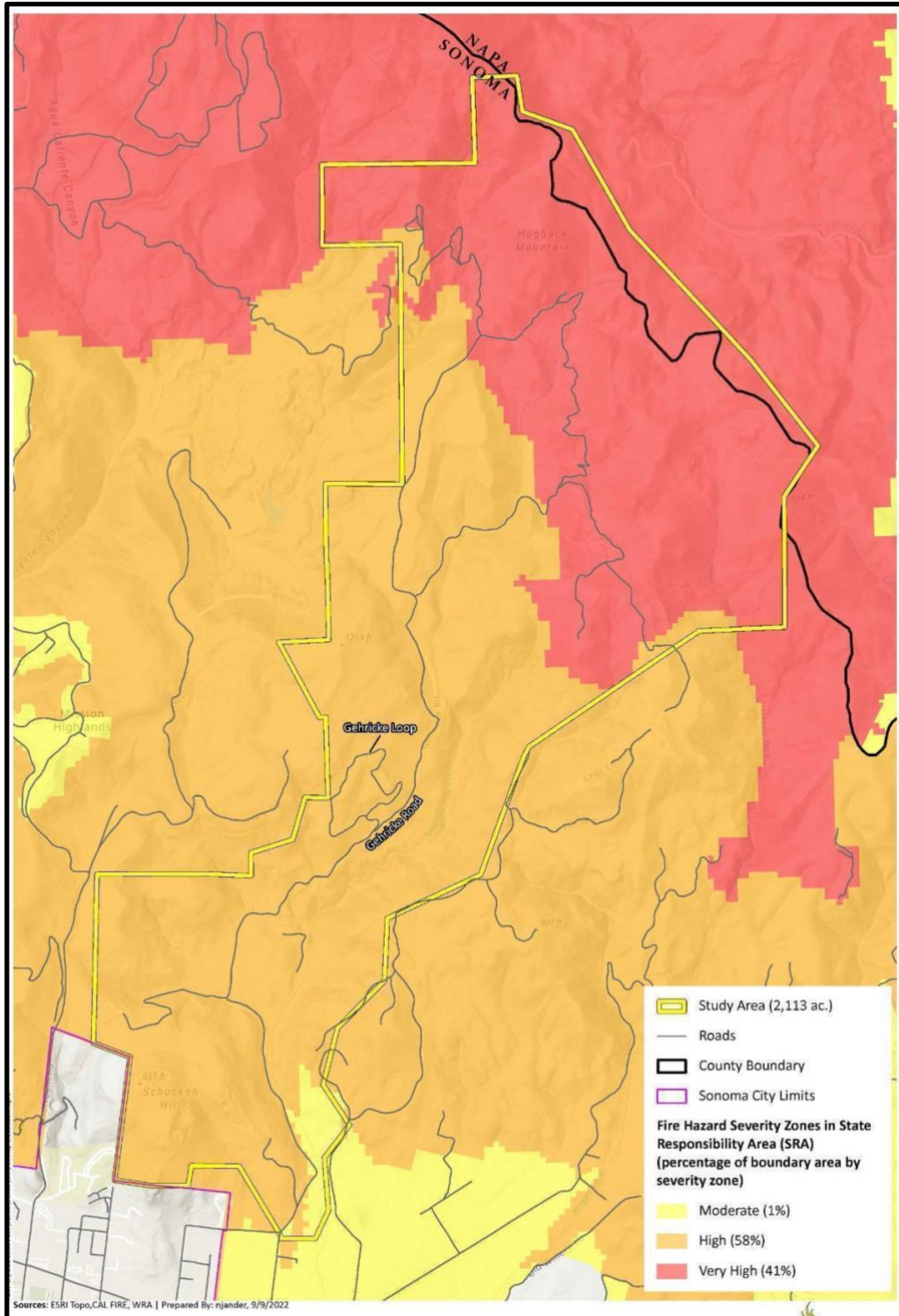
- Intentional acts of arson

COMMUNITY FIRE HISTORY

In 2017, the Nuns Fire was part of the Northern California firestorm that included over 21 major fires that began in early October. This fire merged into the Norrbom, Adobe, Patrick, Pressley, and Oakmont fires, and was responsible for destroying 1,355 structures and burning 56,556 acres.

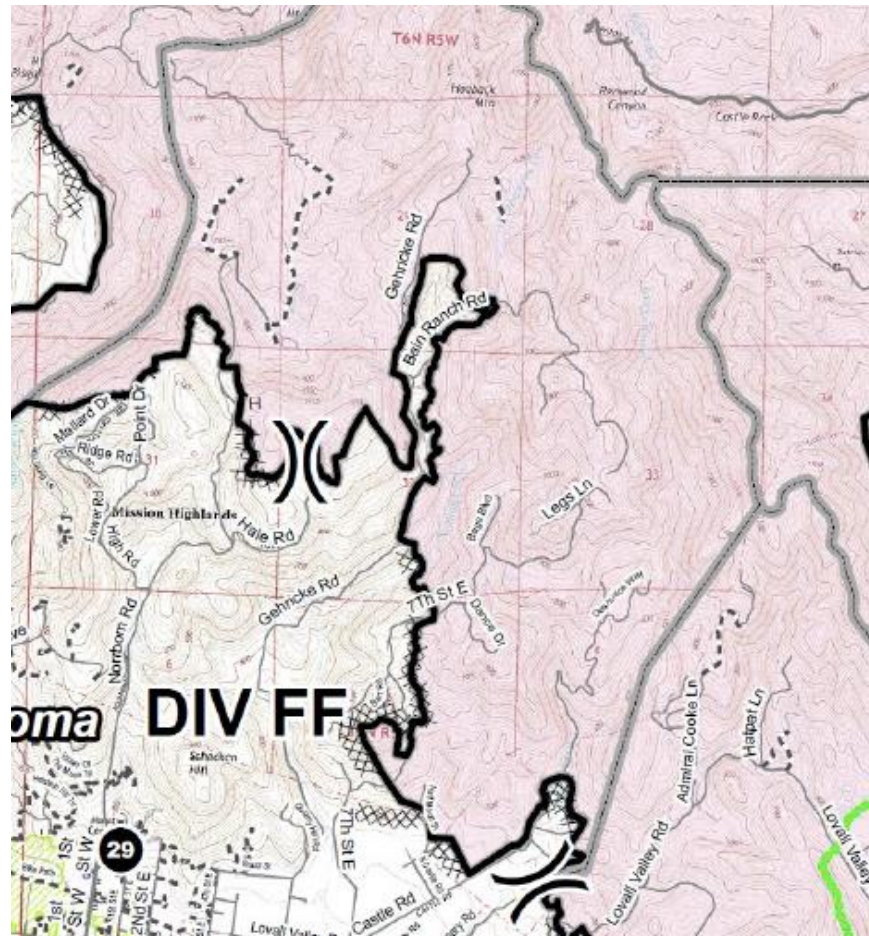
Gehricke Road is in a High Fire Hazard Severity Zone and was impacted by the Nuns Fire in 2017. As referenced in the maps, the majority of Gehricke Road is within a High Fire Hazard Severity Zone per the FRAP website. Additionally, the very end of Gehricke Road is within a Very High Fire Hazard Severity Zone.

The color coding of Orange indicates a High Fire Hazard Severity Zone. Red identifies the Very High Fire Hazard Severity Zone.



Fire Hazard Severity Zones

The second photo below shows the final fire perimeter of the Nuns Fire in 2017, where Gehricke Road was used as a final control line for this portion of the Nuns fire. The thick black line indicates the final control line for the Nuns Fire. The pink area is the burned area. The white area is the unburned area. This data comes from the Operations Map, Central LNU Complex, Incident number CALNU010104, produced on October 26, 2017.



2017 Nuns Fire Final Fire Perimeter

Coupled with the other fires burning that fall, these wildfires were the most destructive of the 2017 California wildfire season. At the time of the October 2017 fires, they were the costliest group of wildfires on record, causing around \$14.5 billion (2017 USD) in damages, including \$11 billion in insured losses and \$1.5 billion in fire suppression costs, surpassing the 1991 Oakland firestorm, which until then had been the single costliest fire on record. In addition, the Northern California fires were predicted to cost the U.S. economy at least \$85 billion.

Gehricke Road was also impacted by the Gehricke Fire in 1980. The boundaries of this fire can be found in Map 7 Fire History in **Appendix C**.

KEY INFRASTRUCTURE

Hazard Assessment – Evacuation Challenges – Limited Ingress and Egress

There is only one public access road into and out of the Gehricke Road CWPP Study Area. Approximately 2 miles of the road is County maintained; the rest privately maintained.

Because Gehricke Road is a single ingress and egress community, choke points and hazards are a significant concern for residents and emergency vehicles.

A high priority of the GRFSC is the exploration—in collaboration with emergency service agencies—of creating a roadway that allows for a safe, orderly, and supervised evacuation.

- **Sharp Successive Turns:** For example, just past the Hayward Ranch, 18000 Gehricke Road, there is a long hairpin turn. In addition to many sharp successive turns, there are very sharp drop offs and limited places to pull over to allow two cars to pass.
- **Narrow stretches due to large trees and subsiding roadway:** For example, just following 17000 Gehricke Road there is a long stretch with no turnouts.
- **Narrow stretches due to geography:** The Gehricke Road loop is a narrow, highly residential area of the community with few areas for cars to pass due to the geography.
- **Subsiding roadway:** Between 18000 Gehricke Road and 17000 Gehricke, there are several stretches of road that have no place to pull over, and roadside culverts are several feet deep on either side of the roadway.

Mitigating Safety Factors:

- Pond/lakes identified
 - MXB lake
 - Hayward Vineyards $\frac{3}{4}$ acre lake
- Vineyards
 - Lower Gehricke Vineyards
 - 19080 Gehricke Road
 - California Investment Properties Vineyards (Formerly Ravenson)
 - Hayward Vineyards (56 acres)
 - Moon Hollow Vineyards
 - Gold Ranch Vineyards
 - Shorenstein Vineyards

FIRE RESPONSE CAPABILITIES

Wildland fire protection services in the Plan Area are provided by the Schell Vista Fire Protection District and CAL FIRE.

The Schell Vista Fire Protection District

Schell Vista Fire Protection District is an all-risk combination fire department (career and volunteer staff) providing fire and emergency medical services. The Schell Vista Fire Protection District response to the Plan Area meets the National Fire Protection Association Standard 1720 criteria for an Urban Response and can arrive with at least 10 staff in 10 minutes or less from time of alarm 80 percent of the time.

Not counting the CAL FIRE response, the minimum number of apparatuses that will respond to the Plan Area as part of a first alarm wildland fire assignment include: at least one (1) Type-3 fire engine with two (2) personnel, one (1) water-tender with one (1) person, and a battalion chief. In addition, mutual aid resources include one Type-3 fire engine with three personnel from the Sonoma Valley Fire District.

Staff are trained to the California State Fire Marshal's office Firefighter-2 and Wildland Firefighter standards.

The department does not currently conduct residential inspections to determine compliance with local, and/or California Fire Safe Regulations, related to structural hardening and defensible space.

The fire department can deliver an uninterrupted fire flow of 200 gpm for 20 minutes, beginning within five minutes of the first arriving engine company and 500 gpm or more, uninterrupted, within the base map area for a period of two hours using hydrants, tender/tanker shuttle operations, and/or large-diameter hose relays.

Sonoma Valley Fire District

The Gehricke Plan Area is also served by the Sonoma Valley Fire District (SVFD). SVFD is an all-risk combination fire department including career and volunteer firefighters. The staff are trained to the California State Fire Marshal's office Firefighter-2 and Wildland Firefighter standards.

SVFD's initial capacity and equipment for addressing a vegetation fire in the CWPP area on initial alarm consists of a Type-1 engine manned by three (3) crew members, three (3) Type-3 engines each staffed with three (3) personnel, a pair of water tenders operated by two (2) individuals, and a single Battalion Chief. In terms of reacting to a vegetation fire within the designated base map zone, SVFD's response adheres to the National Fire Protection Association (NFPA)'s 1720 standards for urban scenarios, as they deploy 15 crew members within a 10-minute timeframe. Water tenders and supplementary resources will also arrive shortly after. The minimum number of apparatuses that will respond to this area as part of a first alarm wildland fire (vegetation) assignment is one (1) auto aid Type-3 engine with three (3) personnel.

In 2021, SVFD established a fuels reduction crew that is funded by the County Board of Supervisors through the hazardous vegetation management program and received a truck and chipper from the County of Sonoma through a grant. The fuels crew reduces fuel loading in the project area by hand and mechanical fuel reduction and roadside fuels management.

CAL FIRE

The CAL FIRE LNU (“Lake, Napa Unit”) also provides wildland fire suppression resources to the Plan Area. LNU is in California’s northern coastal region, bounded by the Pacific Ocean to the west, San Francisco Bay to the south, Sacramento Valley to the east, the Mendocino National Forest to the north and Mendocino County to the north-northwest.

During peak fire season, LNU suppression resources include approximately 260 permanent personnel and 250 seasonal personnel including several battalion chiefs (BC), staffing 21 fire stations, 31 engines (ENG CDF), six (6) bulldozers (DOZ), two conservation camps, one (1) fuel reduction crew, one (1) Firefighter Hand crew (FIRE CREW), one (1) Helicopter (HEL), one (1) air attack base (AT) and many other support staff positions.

For a first alarm vegetation fire assignment, CAL FIRE’s response capabilities are dictated by weather, and if the dispatch event is categorized as ‘High,’ ‘Medium,’ ‘Low,’ or ‘Winter.’ The table below shows the CAL FIRE response plans by Computer Aided Dispatch (CAD) event types.

CAL FIRE RESPONSE CAPABILITIES								
CAD Event Types	Response Plan Description	BC	AA	AT	HEL	ENG CDF	DOZ	FIRE CREW
HIGH FIRE	WILDLAND – High – LNU Standard	1	1	3	1	8	3	2
MED FIRE	WILDLAND – Med – LNU Standard	1	1	2	1	4	2	2
LOW FIRE	WILDLAND – Low – LNU Standard	1			1	2		
WINTER FIRE	WILDLAND – Winter – LNU Standard	1				1		

COMMUNITY ASSETS AND VALUES AT RISK

Gehricke Road

As discussed, Gehricke Road is the only access in and out of the community. It is a paved, one-lane road that includes the Gehricke loop, which has the highest concentration of residences, approximately 0.75 miles long. There is a “Y” with clear address signs for the Gehricke Loop residences. To the right of the “Y” the address signs are different shapes and sizes, which makes it more difficult for drivers to read.

The road has few turnouts and long stretches of narrow roadway that would be difficult to evacuate safely in the event of an emergency.

UPPER GEHRICKE

Upper Gehricke road is approximately 1.6 miles and is managed by several large acreage properties, and includes vineyards, farms, and ranches.

REDWOOD GROVES

There are several small redwood groves on Gehricke Road and Nathanson Creek that the community identified as at-risk assets.

HOMES AND RANCHES

There is a strong community of full and part-time residents on Gehricke Road, and the CWPP's goal is to educate and inspire the community to take preventative actions to help the community be safer in the event of a wildfire.

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SECTION II: STRUCTURAL IGNITABILITY

OVERVIEW

This Section describes existing structural ignitability challenges and recommends measures to reduce ignitability of structures throughout the area addressed by the Plan.

The recommended measures to reduce structural ignitability are included because structural ignitability was identified as a high risk based on an objective risk assessment for the Gehricke Road CWPP Study Area, and community surveys received from nearly thirty-eight community members. The purpose of the survey was to identify and quantify the primary wildland fire risk concerns of the community residents. In cooperation with the County of Sonoma, the GRFSC CWPP supports and promotes fire safe activities, and educates its citizens in ways to reduce structure ignitability through meeting the requirements of the Sonoma County Building Codes, Fire Codes and Fire Safe Standards.

STRUCTURAL IGNITABILITY CHALLENGES

In the WUI where natural fuels and structure fuels are intermixed, fire behavior is complex and difficult to predict. Research based on modeling, observations, and case studies in the WUI indicates that structure ignitability during wildland fires depends largely on the characteristics and building materials of the home and its immediate surroundings.

The dispersion of embers from wildfires is the most likely cause of home ignitions. When embers land on or near a structure, they can ignite nearby vegetation or accumulated debris on the roof or in the gutter. Embers can also enter the structure through openings, such as an open window or vent, and could ignite the interior of the structure or debris in the attic. Wildfire can further ignite structures through direct flame contact and/or radiant heat. For this reason, it is important that structures and property in the WUI become less prone to ignition by ember dispersion, direct flame contact, and radiant heat.

Chapter 7A of the California Building Code (CBC) addresses the wildland fire threat to structures by requiring that structures located in state or locally designated WUI areas be built of fire-resistant materials. There are also requirements for fire-safe construction in Chapter 13 of the Sonoma County Fire Code. Currently, the code specifies fire-safe requirements that only apply to new construction or extensive remodels.

Buildings on Gehricke Road tend to be unique projects on a single lot, built in the 1970s and 1980s.

Both the Loop and Upper Gehricke have several newly constructed buildings, either new construction or extensive remodels, with different design and construction teams. Studies show that

more recently constructed buildings are more likely to survive a wildfire due to fire resistant materials required by building codes.

MEASURES TO REDUCE STRUCTURAL IGNITABILITY

The best opportunity to protect our largely built out community would be to harden existing properties. Large ticket items, such as roofing and windows, require periodic replacement albeit at longer periods of up to 40 years. Sonoma County requires Class A Roofing Materials for replacement of more than 50% of an existing roof or a remodel adding 640 square feet or more of floor area. Class A is the highest rating, offering the highest resistance to fire, and unrated is the worst. Examples of a Class A roof covering include concrete or clay roof tiles, fiberglass asphalt composition shingles, and metal roofs. Since most roofing projects require permits, this code requirement will lead to hardening of vulnerable roof surfaces over time. However, there are educational opportunities to evaluate existing roof stocks for fire resistance and to encourage upgrades sooner rather than later as appropriate.

Sonoma County does not require permits to replace existing windows provided the replacement windows are the same size as existing windows. Windows form a front-line defense in fire hardening, and selecting double or triple pane, tempered or annealed glass, provide significantly greater fire resistance than do the single pane glass windows that exist in some older homes. In addition, metal window screens and some window films enhance fire resistance. Finally, shutting windows in a wildfire scenario is crucial to prevent embers from entering a home and igniting a fire. Windows present an excellent opportunity to educate building owners. New windows also reduce energy use and ambient sound penetration into the home.

LOW-COST RECOMMENDATIONS

Some of the most effective things that can be done to fire harden a structure do not require large expenditures. In a study based on more than 40,000 records of structures exposed to wildfires from 2013–2018, it was found that, overall, defensible space distance explained very little variation in home survival, and that structural characteristics were generally more important. Structure survival was highest when homes had enclosed or no eaves, screened vents, and multiple-pane windows. These results suggest that potentially one of the most effective methods of protecting homes from wildfire destruction would be to perform simple building retrofits—such as placing fine mesh screens over vents, and coverings over other openings in the structures such as gaps in roofs, and enclosing structure eaves.

Similarly, since firebrands or embers are the most common source of structure ignition, it is important to ensure that all building material joints and connections are well maintained and sealed or caulked as necessary. Lap joints in siding and blocking in eaves and window frames are all areas that can separate, creating gaps which allow wind-driven embers to enter and ignite the structure. Other maintenance items, such as cleaning leaves from gutters and removing accumulated leaves, debris, and other combustible materials from under decks or wind-trap areas are important to remaining fire safe. Combustible materials, such as firewood, stored adjacent to structures or on decks should be relocated.

HOME ASSESSMENTS

Assessments of structures at the request of owners to identify opportunities to fire harden can be performed by trained wildland fire risk assessors. The Wildland Fire Assessment Program (WFAP) is a joint effort by the U.S. Forest Service and the National Volunteer Fire Council to provide training on how to properly conduct assessments for homes located in the wildland urban interface (WUI). This is the first program targeted to volunteers that specifically prepares them to evaluate a home, and provide residents with recommendations to protect their property from wildfires in order to make their community more fire adapted. WFAP offers in-person and online training, and a toolkit for conducting assessments. The GRFSC will recruit, train, and offer assessments to property owners in our area.

EDUCATION

The partnership that exists between the listed organizations and citizens in this CWPP allows GRFSC members to provide structural hardening education and outreach for the community to promote structural hardening projects and reduce the risk of structural ignition due to a wildland fire.

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SECTION III: FUEL REDUCTION

VEGETATION TREATMENT OPTIONS

There are a wide variety of methods and programs available to help reduce the fuel load in a forested area, and several vegetation treatment options to better manage our forests for fire resilience and other natural characteristics. Several of the most common techniques are described below. Many techniques may be used concurrently or in succession to achieve the desired effect. Consultation with a Registered Professional Forester (RPF) and the pertinent natural resource agencies may need to occur prior to planning or conducting any action that might have an impact on protected resources, as permits may be necessary in many cases.

Fuel Reduction

Reduced fuels along roadside (i.e., roadside clearing) allows citizens to evacuate and first responders to enter the fire area safely. Secondly, roads are often utilized as containment and control lines for wildfires. Fuel reduction along a given road before a fire occurs allows responders to concentrate suppression efforts at the fire's forward advance—thus reducing the need to dedicate heavy resources to holding and reinforcing roadside fire edges.

Fuel reduction along highways and roadside right-of-way easements have proven inadequate to positively contain a fast-moving fire. Extending fuel reduction into private and public lands beyond a roadway easement is necessary for forming an effective fire break. Landowner and manager cooperation is critical for fuel reduction projects and establishing a reliable network of effective roadside fuel breaks.

Fuel reduction treatments improve forest resiliency by reducing wildfire severity and related mortality, improving tree growth, and stabilizing carbon retained in trees. Thinning activities implemented could change stand structure to concentrate carbon storage in more widely spaced trees that are more resistant to wildfire, drought, and insect attack, and reduce the likelihood of wildfire transitioning into the forest canopy.

Treatments should focus on treating understory trees or brush to reduce surface and ladder fuels, disrupting both vertical and horizontal continuity of vegetative fuels, and utilizing forest management practices intended to stabilize sequestered carbon by changing forest stand structure to increase carbon storage in more widely dispersed trees in a more fire-resilient stand. Selection of practices must be done on a site-specific basis, and an assortment of practices to suit the circumstance should be selected.

Available management options for thinning the forested areas of the Gehricke Road area include:

- Mechanical (using large machines such as masticators)
- Manual labor
- Grazing of domestic livestock

- Pile burning
- Broadcast burn/prescribed fire
- Use of herbicide
- and shaded fuel breaks

MECHANICAL

Employing large machines such as masticators, grinders, and chippers—trees are taken down and chipped on-site. Chips can be disposed of by on-site broadcasting, or removed off-site for disposal or reuse (firewood, chips for cogeneration, finished wood products, etc.). Mechanical treatment can only be used where roads allow access to the site. Cost per acre for mechanical treatments is variable, due to differences in fuel load, steepness, and difficulty of access to terrain. Disruption to sensitive natural resources must be considered when using mechanical means.

MANUAL LABOR

Chainsaws and other tools are used to cut trees and brush, either lopping and scattering, chipping debris in place, or burning in piles. Per-acre cost for hand work varies considerably, and the cost of treatment will increase along with fuel density, difficulty of access, and steepness of terrain.

GRAZING

Properly managed, grazing of domestic livestock such as sheep, goats, and cattle can be an efficient and cost-effective means to control grasses and brush, and can greatly benefit soil health and the ecosystem. Grazing animals can browse noxious plants such as poison oak that are difficult to manage, and greatly reduce fuels on slopes which are too steep for maintenance.

PILE BURNING

Pile burning is a method of eliminating vegetative material by incineration. Material is cut down and piled in relatively open areas with decent access by vehicles. The piles are fully or partially covered with waterproof material to cure, typically for one year, until they are dry. The piles are burned on cool moist days, and typically on days where rain is expected. Pile burning requires permits from the Bay Area Air Quality Management District (BAAQMD).

BROADCAST BURN/PREScribed FIRE

Prescribed fire is the intentional use of fire to help control and reduce vegetation by removing small trees and brush. Broadcast burning, often called prescribed burning, is conducted during times of the year when fuel moisture tends to be higher, such as the spring or winter.

Not all fuels are the same. Fine fuels start, and carry fire, while large fuels sustain fire. Large-diameter logs and snags often provide habitat for various animals, and their retention should be considered despite concerns of fire. Snags (dead-standing trees) over 24 inches in diameter are often prioritized for retention, unless they pose a hazard to people, property, or access routes. Snags and downed logs of this size are too large to start a fire, although in the event of a fire they will potentially increase the intensity of fire due to their low moisture content. This issue will be negligible if the forest is maintained in a condition as described above.

By reintroducing fire into the fire-adapted environment, one can improve the health of the local ecosystem; however, it does come with inherent risks and complications. Anyone planning a prescribed burn must have all the necessary permits and permissions and ensure that there are sufficient qualified individuals on hand to support burn activities. In areas where there are significant fuels build up, prescribed burns cannot be attempted until mechanical treatment have reduced available fuel. “Prescribed Burn Associations” are forming across the county to help property owners use prescribed fire. For example, Fire Forward in Sonoma County works to build ecological and community resilience in the face of ever-pressing destructive wildfires and the loss of biodiversity, by building capacity for stewardship-based prescribed burning utilizing a unique blend of science, implementation, and community organizing to promote fire-adapted communities tending to fire-adapted landscapes.

Community and fire agency acceptance and buy-in for any burn operation is critical. Increasing capacity for prescribed burning across the Project Area is a high priority.

There are many benefits to restoring a regular fire return interval to forested landscapes. Frequent fire consumes fuels while they are at a moderate level, resulting in flame length and fire line intensities which are moderate, allowing larger trees to survive unscathed. This reduction in fuel loading lowers the risk of catastrophic wildfire over the long term, and it has the added benefit of creating park-like conditions which are preferred for hiking and recreation. Fire creates habitat elements, especially in redwood ecosystems, in the form of basal cavities (often called goose pens). Fire is also known to stimulate responses in forest foods, as acorns flush from oaks and tanoaks in response to fire.

In order to realize the benefits of moderate-intensity, low-severity fire, broadcast burning must be conducted in a safe and controlled manner. Prior to any burns, fuels reduction treatments are often necessary. Usually, treatments involve cutting down vegetation and laying it closer to the ground, so when prescribed fire is applied there are no fuel ladders to carry the fire into the forest canopy.

HERBICIDE

Licensed and permitted herbicide application can be a useful tool for removing invasive and undesirable vegetation in selected areas—especially for maintaining safe, clear roadsides and along shaded fuel breaks where emerging and flammable plants can be quickly eradicated before they create a fire hazard.

SHADED FUEL BREAKS

Shaded fuel breaks, including reduction of ladder fuels, opened canopies, and reduced ground fuels, are helpful features on the landscape because they provide relatively safe areas for firefighters to fight wildfire, and they provide areas of relatively light fuels from which to begin prescribed fire treatments. They can also be utilized to reduce fuels near roads and utility lines which are the largest sources of ignitions. The exact location of where to strategically create shaded fuel breaks should be done in consultation with an RPF and relevant regulatory land agencies.

Treatments may also include creating fuel breaks that are completely cleared of fine fuels and readily combustible material, so that prescribed burns can be directed into areas where the fire will burn itself out in a predictable way.

FOREST MANAGEMENT PLANS (FMPS)

Forest Management Plans are individual plans created for a parcel which outline goals and objectives for a forested property, identify both cultural and biological resources on site and constraints to management, and provide recommendations or prescriptions for silvicultural treatments, vegetation management, road maintenance, etc. The plan clearly describes the current and desired conditions of the forest resources, what short- and/or long-term goals the landowner has for the land, what management actions can be taken to achieve those goals, and what resources are needed for implementation.

These documents are required to utilize government incentives programs, such as the California Forest Improvement Program (CFIP) under CAL FIRE and the Environmental Quality Incentives Program under the Natural Resource Conservation Service (NRCS). A completed plan can also help the landowner meet grant requirements when collaborating with state and federal agencies for project funding. Workshops could be conducted to help landowners develop Forest Management Plans to increase the forest resilience and help them meet their ecological, economic and fire management goals. The FMP workshops could address landowner management objectives and planning, forest restoration, fuels reduction, project development, permitting, and cost-share opportunities. Participants could connect with other landowners and learn how to collect information to develop their own management plans. Participants who complete their plans could be eligible for a visit by an RPF to assess its content and discuss next steps.

POST-FIRE TREATMENTS

The strategies discussed above all have the goal of fuel reduction to help mitigate the risk and damage from a wildfire. A wildfire will inevitably come, and substantial effort will be required to promote and restore forest health in a post-fire scenario. Potential projects in a post-fire scenario might include toxic waste containment for the protection of the watershed, debris removal, salvage logging, slash/fuel removal, road work for erosion control, water quality, stream sediment reduction replanting, reforestation, and habitat recovery. Given the recent fire history in Sonoma County, there is much local expertise to draw from on this topic.

SECTION REFERENCES

CAL FIRE Sonoma-Lake-Napa Unit 2021 Strategic Fire Plan
https://osfm.fire.ca.gov/media/lpaffiu/2021_lnu_fireplan.pdf

SECTION IV: CONCLUSIONS

Maintaining properties and roadways with the appropriate defensible space and strategic fuel breaks are keys to protecting lives and properties.

Other wildland fire risk reduction efforts, including but not limited to early notifications, wildland fire safety education and outreach, home hardening to reduce structural ignitability, and improved street signage, are also keys to protecting lives and properties.

This Section identifies areas that will be the most effective for reducing wildland fire risk within the base map area based on a thorough study and analysis that included objective risk assessments for each of the communities identified within the base map, objective risk assessments of assets identified as at-risk assets, and community surveys received from nearly all community members that measure the primary wildland fire risk concerns of the community residents.

EXISTING PROJECTS

At the time of the development of this CWPP, the following projects have either been implemented or discussed:

- Outreach and education
- Fire-wise workshops
- Home assessments
- Home address numbers project
- Fuels reduction along parts of Gehricke Road
- Ingress/Egress roadway improvement

PRIORITIES

This section summarizes projects that we believe will be the most effective for reducing wildland fire risk within the GRFSC base map area. The projects are based on a thorough study and analysis that included objective risk assessments for each of the three communities identified within the base map. The projects are also based on objective risk assessments of assets identified as “at-risk assets” and community surveys received from community members & government stakeholders. The surveys measured the primary wildland fire risk concerns of the community residents.

Priorities include the protection of people, structures, infrastructure, natural resources, and unique ecosystems that contribute to our way of life. Our CWPP balances private property rights of landowners with personal safety and responsibility to prepare residents for wildfire situations.

We will continue to identify projects that are consistent with the Council's goals and that meet or exceed the requirements of all applicable statutes and ordinances.

We have prioritized the following areas to reduce wildfire risk to the community:

Emergency Evacuation

- Collaborate with County agencies and private landowners to develop protocols, procedures, and criteria for the controlled and supervised evacuation of residents at the appropriate stage of a fire incident. GRFSC's role in such an initiative will be focused on collaboration with the appropriate agencies, adoption of 'Best Practices' by other communities and education of Council residents.

Vegetation Management

- Seek grants to conduct fuels reduction and vegetation mitigation projects, including a community chipping program. Initially, such projects will be focused on Gehricke Road and powerline corridors. Projects on privately and publicly owned properties will be explored and pursued as circumstances dictate.

Education and Outreach

- Conduct wildfire risk education to establish an informed and engaged community, including but not limited to installation and maintenance of fire danger signs, early notifications, wildfire safety education and outreach, such as home hardening, to reduce structural ignitability, and improved street signage.

A detailed list of proposed projects in each of these categories is provided in **Appendix B**.

SECTION V: DEVELOPMENT

PROJECT METHODOLOGY

The methodology used to craft this CWPP included team meetings, site evaluations, historical research, community meetings, objective risk assessments, and community surveys to establish risk priorities and reduction treatments. The development team made a significant effort to reduce subjective bias to a minimum.

Community Collaboration

This CWPP as developed for the GRFSC was collaboratively developed. It is intended to meet the intent of the Healthy Forest Restoration Act (HFRA) in emphasizing the need for agencies to work collaboratively with communities in developing hazardous fuel reduction projects, and it places priority on treatment areas identified by communities themselves in a CWPP.

CWPP Development Team

Representatives directly involved in the development of the GRFSC CWPP are included in the following table along with their roles and responsibilities.

CWPP DEVELOPMENT TEAM	
Name	Role
Brietta Linney	GRFSC President
Suzanne Harmon	GRFSC Treasurer
Connie McCann	GRFSC Vice President
Patricia Summers	GRFSC Board Member
Erin Linney	GRFSC Secretary

Governmental Stakeholders

PARTICIPATING GOVERNMENTAL/QUASI-GOVERNMENTAL STAKEHOLDERS	
Name	Organization
Susan Gorin (or Representative)	County Supervisor
Division Chief Ben Nicholls	CAL FIRE
Captain Steve Millosovich	CAL FIRE
Battalion Chief Sean Jerry	CAL FIRE
Captain Gary Johnson	Sonoma Valley Fire District
Chief Ray Mulas	Schell Vista Fire Department
Sergeant Greg Piccinini	Sonoma County Sheriff's Office
Nancy Brown, PhD	Sonoma County Emergency Management

Risk Assessment Methodology

A wildfire hazard risk assessment has been completed to help identify and prioritize the most at-risk and vulnerable areas of the Gehricke Road Plan Area with a focus on an evaluation of the following:

- Fire Department access
- Public egress
- Structural ignition potential
- Fire Department capabilities (including firefighting water supply)
- Weather influences
- Wildland fire history
- Other risk factors

The risk assessment(s) was based on a combination of wildfire research analytical tools, and information and maps available to the team including a Community Survey, a Fire Department Capabilities Survey, CAL FIRE's Fire and Resource Assessment Program (FRAP) data, Wildfire Risk Index (WRI) analytical tools available through the County of Sonoma's Community Wildfire Protection Plan Hub Site, a public meeting and communities at risk exercise, and a Community Wildfire Risk Assessment tool developed by Fire Safe Sonoma.

Community Survey

The Community Survey was developed jointly by Fire Safe Sonoma and the GRFSC. The survey was developed using generally accepted standards of measurements of wildfire risk. The survey was distributed digitally via email as a Google Forms survey through an email listserv and yielded 37 responses. Data from the survey is summarized at **Appendix A**.

The Fire Department Capabilities Survey

The Fire Department Capabilities Survey was developed by Fire Safe Sonoma and is based on the National Fire Protection Association (NFPA) Standard 1720, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments. This instrument was a Google Forms survey sent as a link directly to Chief Ray Mulas of the Schell Vista Fire District, which provides initial attack response to the plan area.

CAL FIRE's Fire and Resource Assessment Program (FRAP)

CAL FIRE's Fire and Resource Assessment Program (FRAP) assesses the amount and extent of California's forests and rangelands, analyzes their conditions, and identifies alternative management and policy guidelines. This plan analysis considers the FRAP Fire Hazard Severity Zones and Fire Threats within the plan area.

Sonoma County Wildfire Risk Index (WRI)

To further quantify and assess the hazard and risk posed by wildfire, newer data sources available through the Sonoma County Wildfire Hazard Index (WHI) and Wildfire Risk Index (WRI) were

integrated into the overall assessment. The WHI quantifies the relative wildfire hazard, which is the inherent wildfire hazard on the landscape due to available fuels, weather patterns, potential ignition sources, and suppression difficulty. The WRI adds to the WHI three additional components:

1. The likely areas embers will accumulate in the event of a wildfire,
2. the presence of structural assets, and
3. the relative usability of the road network in Sonoma County.

GEHRICKE ROAD WRI AREA STATS	
Average WRI (risk)	4
Average WRI (1-mile buffer)	4
Average WRI (hazard)	4
Average Ember Load Index	3
Number of Structures	312
Average Road Rank	5
FHSZ in SRA Stats	
Average CAL FIRE Hazard	2

COMMUNITY WILDFIRE RISK ASSESSMENT

The community Wildfire Risk Assessment instrument was developed in 2015 by Fire Safe Sonoma with funding from CAL FIRE and is based on wildland fire risk elements contained in the National Fire Protection Association (NFPA) Standard 1144, Standard for Reducing Structure Ignition Hazards from Wildland Fire. This instrument is used to receive and interpret the other datasets and render an overall assessment of wildfire risks in the Plan Area.

The data collected was synthesized by the core team, collaborating with Fire Safe Sonoma, WRA staff, fire service professionals, and other subject matter experts. The purpose of this assessment is to provide a framework and basis for prioritizing a range of wildfire mitigation strategies across the Plan Area.

COMMUNITY RISK ASSESSMENT

Overall Community Assessment

THE GEHRICKE ROAD AREA

The Gehricke Road area has a predominantly southern aspect, with approximately 41 percent of the Study Area in the the Very High Severity Zone, 58 percent in the High Severity Zone, and 1 percent in the Moderate Severity Zone (Appendix C).

The area includes small parcels with continuous fuels in close proximity to structures, composition of fuels is conducive to crown fires or high intensity surface fires, steep slopes, predominantly south aspects, dense fuels, heavy duff, prevailing wind exposure and/or ladder fuels that may reduce suppression effectiveness, and a history of some large fires and/or moderate fire occurrence.

The overall risk ranking for the area is 108, a “Very High Hazard,” according to the Fire Safe Sonoma Risk Analysis tool. (*Low Hazard = 41 or less; Moderate = 41 to 60, High = 61 to 75, Very High = 76 or greater.*) **Fire behavior in this area is likely to be extreme.**

ACCESS/EVACUATION

Primary and secondary access and evacuation routes in this area do not permit fire engines and large vehicles (such as a motor home) to pass simultaneously during an evacuation. Of those surveyed, 44 percent will be evacuating with at least one pet, and 9.4 percent will require assistance evacuating. Also, of those surveyed, 88.1 percent stated that they have not identified a secondary evacuation route.

STRUCTURAL IGNITABILITY

Most buildings in this area were constructed prior to 2008 and do not meet modern construction standards for buildings built in wildland-urban interface areas. In general, buildings in this area have open wood decks, and lack fire-safe roofs, siding, and enclosed features such as enclosed under-deck areas. Also, 61.8 percent of those surveyed indicated that they have outbuildings near their residence. Moreover, some comments from survey respondents indicated potential issues with utility power lines running through trees and branches, etc.

DEFENSIBLE SPACE/FUEL REDUCTION

Overall, defensible space around structures in this area are described as inadequate. 29.4 percent of those surveyed indicated that they have defensible space in the area within five feet of their home, and 52.9 percent indicated that they have defensible space out to 30 feet from their home. Additionally, CAL FIRE has recommended at least two community fuel breaks in this area and several throughout neighboring areas.

CAL FIRE FIRE HAZARD SEVERITY ZONE (FHSZ) MAP UPDATE

The last approved update to the CAL FIRE Fire Hazard Severity Zone (FHSZ) for the entire State Responsibility Area (SRA) was last updated in 2007. CAL FIRE worked with local governments to make recommendations of the Very High FHSZs within Local Responsibility Area (LRA) between 2008 and 2011. Over the past few years, CAL FIRE has been building the new model for a 2022

update. The Draft 2022 FHSZ maps were released for public comments on December 16, 2022. The public comment period will end on April 4, 2023. It is unclear when the Draft 2022 FHSZ maps will be adopted by CAL FIRE at time of preparing this document.

The Draft 2022 FHSZ maps indicate that a higher percentage of the Study Area has been classified as Very High FHSZ (92 percent in 2022 compared to 58 percent in 2007), but the overall risk ranking score for the area does not change when assessing risk with either the 2007 or 2022 FHSZs data. Because the 2022 FHSZ maps have not yet been adopted by CAL FIRE, the community risk assessment discussed above for the Study Area was conducted based on FHSZs data from the 2007 FHSZ maps. A map showing the 2022 FHSZ Update of the Study Area was prepared by Esther Mandeno of Digital Mapping Solutions and has been included in the map set at **Appendix C**.

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SECTION VI: RESOURCES & REFERENCES

APPENDICES

Appendix A: Risk Assessment Data

Appendix B: Priority Projects

Appendix C: Community Maps

Appendix D: Sonoma County Wildfire Risk Index (WRI)

Appendix E: Community History

Appendix F: Potential Funding