

# Appendix A

GEHRICKE ROAD RISK ASSESSMENT DATA



# Appendix A: Community Survey

Below are summarized findings and observations for each of the following areas regarding the Community Survey that was sent to Gehricke Road neighbors. This questionnaire was sent through Google Forms and fielded questions regarding access and evacuation, structural ignitability/home hardening, and defensible space/fuel reduction. This survey yielded 37 responses. Collectively they are meant to show areas for priority focus and treatments.

## ACCESS AND EVACUATION (AREA ENCOMPASSING 42 HOMES)

- 88.1% say there is only one way out from the road they live on and 11.7% say they have two ways out.
- 87.5% have not identified an alternate evacuation route; 3.1% have, and 15.6% have identified temporary refuge areas.
- 41.7% say that tall grass, brush and trees border and overhang the roadways
  - 47.2% say it is mostly maintained but some areas require improvement.
- 60% say a motorhome and fire engine cannot pass and 34.3% say they would have difficulty passing.
- 9.4% will require assistance evacuating.
- 41.2% say they have approved address numbers and 17.6% say the street signs are at both ends of the street.

## STRUCTURAL IGNITABILITY / HOME HARDENING

- 58.8% have open decks.
- 41.2% say they have wood siding.
- 26.5% (conversely 73.5%) say they have enclosed eaves/soffits.
- 29.4% (conversely 70.6%) say they keep rain gutters clean.
- 47.1% say they have dual-pane windows.
- 70.6% say they have a class A roof.

## DEFENSIBLE SPACE/ FUEL REDUCTION

- 2.9% are less than one-acre parcels.
- 63% say they have adequate defensible space in the immediate zone.
- 52.9% say they have adequate defensible space in the 5–30-foot zone.
- 17.6% say they have adequate defensible space up to or beyond the 100 feet or more. (small lots drive this response).

## IGNITION RISK AND HAZARD ASSESSMENT OVERVIEW FOR Gehricke Road

FACTORS	RATING
<b>IGNITION RISK ASSESSMENT</b>	
<b>CONTRIBUTING RISK FACTORS</b>	
History of Lightning	Moderate
Camping Activities	No
High Level of visitors/activities	Moderate
Understory receptive to ignition	High
Thick brush and trees	High
Unmaintained Powerline Corridors	Moderate
High fuel loads	High
High Winds	High
History of fire ignitions	Choose
Vacation Rentals	Low
Add other risk factor	Choose
Add other risk factor	Choose
Add other risk factor	Choose

FACTORS	RATING	
<b>HAZARD ASSESSMENT</b>		
<b>ACCESS</b>		
Ingress/Egress	Inadequate	5
Width of Primary Road	Inadequate	5
Passability	Moderate	3
Secondary Road Terminus	Inadequate	5
Primary Slope	Moderate	3
Street Signs	Inadequate	5
Address Signage	Inadequate	5
Roadside Vegetation	Adequate	1
Narrow Secondary	Inadequate	5
Secondary Paved	Inadequate	5
Secondary Road Slope	Moderate	3
Unrated Bridges		0
Wooden Bridges	Adequate	1
Gates	Moderate	3
<b>BUILT ENVIRONMENT</b>		
2007 Standards	Inadequate	5
Roofing Materials	Inadequate	8
Siding Materials	Inadequate	3
Unenclosed Features	Moderate	3
<b>UTILITIES</b>		
Utility Ignition Risk	Moderate	3
Lot Size	Moderate	3
Defensible Space	Inadequate	5
<b>FIRE PROTECTION</b>		
Water Source	Moderate	5
Fire Protection	Adequate	3
<b>FIRE BEHAVIOR</b>		
Fire Hazard Safety Zone	High	5
Slope	Steep	7
Aspect	Extreme	10
Fuels	Extreme	5
Fire Behavior	Extreme	10

### Final Scores

Summary Rating<sup>1</sup>

Summary Rating / Score      108

Hazard Category	Score
Low Hazard	< 41
Moderate Hazard	41-60
High Hazard	61-75
Very High Hazard	76+

<sup>1</sup> Summary rating for Ignition Risk Assessment is a judgment call determined by planning committee.

Use this chart to consider which projects might be tackled, and how. Some Green colored risks could potentially be tackled by neighborhood groups for little or no cost. The risks in the yellow category may need considerable planning and perhaps funding, but are modifiable. The Orange risks are physical features or infrastructure that are not easily modified. Risks in this area will be better modified by education and planning.

Risks that can probably be modified	Mitigation Strategies Include:	
<b>Access</b>		
Gates	Evacuation Planning, install "Knox Keys"	Moderate
Roadside vegetation	Fuels Management, education, funding	Adequate
<b>Signage</b>		
Street	Education, outreach, funding	Inadequate
House	Education, outreach, funding	Inadequate
<b>Home Hardening/Construction</b>		
Roofing	Education, outreach, retrofit, funding	Inadequate
Siding	Education, outreach, retrofit, funding	Inadequate
Unenclosed Features	Education, outreach, retrofit, funding	Moderate
<b>Defensible Space</b>		
Defensible Space	Education, outreach, funding, inspections	Inadequate
Risks that possibly can be modified	Mitigation Strategies Include:	
<b>Access: Bridges</b>		
Unrated Bridges	Evacuation Planning, modification	
Wood Bridges	Evacuation Planning, modification	Adequate
<b>Water and Fuels</b>		
Water Sources	Develop further sources.	Moderate
Fire Behavior (strategic fuel breaks)	Planning, funding, education, outreach	Extreme
Fuels Density (fuels modification)	Planning, funding, education, outreach	Extreme
Risks that cannot likely be modified	Mitigation Strategies Include:	
<b>ACCESS</b>		
Primary Roads out	Evacuation Planning	Inadequate
Primary Road width	Evacuation Planning	Inadequate
Primary Road Slope	Evacuation Planning	Moderate
Secondary width	Evacuation Planning	Inadequate
Secondary Terminus	Evacuation Planning	Inadequate
Secondary Slope	Evacuation Planning	Moderate
Secondary Surface	Evacuation Planning	Inadequate
<b>Utilities</b>		
Underground	Education, outreach, report issues	Moderate
<b>Fire Behavior</b>		
Fire Hazard Severity Zones	Education, outreach, planning	High
Slope	Education, outreach, planning	Steep
Predominant Aspect	Education, outreach, planning	Extreme

# Appendix B

PROJECT DEVELOPMENT



# Appendix B: Project Development

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## INTRODUCTION

In collaboration with community members, local, county, state and federal government agencies, and local and state fire officials, this CWPP establishes and prioritizes wildfire risk reduction projects that have been developed to address the most significant risks identified in the Gehricke Road Community Risk Assessment. This project list is a living document and will be periodically updated in the future to reflect progress and changing priorities.

### Priority Ratings

- **H** = High Priority
- **M** = Medium Priority
- **L** = Low Priority

### Project Categories

Projects have been categorized as follows:

- Vegetation Management
- Education & Outreach
- Evacuation

**PROJECT: DEVELOP AND PUBLISH A COMMUNITY WILDFIRE PREPAREDNESS PLAN (CWPP)**

**Priority:** H

**Category:** Education & Evacuation

**Goal:** Produce a high-quality booklet available to all residents in the Gehricke Road Fire Safe Council, Inc. (GRFSC) area to further their awareness of:

- Preparation and planning
- Evacuation preparedness and procedures
- Preparing to return after a wildfire and have it available on the Gehricke Road Fire Safe Council website

**Participants:** Fire Safe Sonoma, CAL FIRE, Schell Vista Fire Protection District, Sonoma Valley Fire District, Department of Emergency Management, and Sonoma County Sheriff's Offices

**Timing:** Publish in December 2022 and maintained on the GRFSC website.

**Potential Cooperating Agencies and/or Programs:** Fire Safe Sonoma, Gehricke Road Landowners, GRFSC Board Members

**Funding Sources:** Fire Safe Sonoma



## **PROJECT: GEHRICKE ROAD VEGETATION MANAGEMENT AND MAINTENANCE**

**Priority:** H

**Category:** Fuels Reduction, Ignition Reduction, Access & Evacuation

**Goal:** Reduce/remove hazardous vegetation along primary and secondary roads to support ingress and egress of residents evacuating, emergency vehicles, and reduce wildfire intensity.

- Gehricke Road is a County and privately maintained road and the only primary access road that serves the community.
- Identify critical areas and prioritize. Including:
  - Trimming overhanging branches, chipping all cut and dead material, removing (cut, pull and/or spray) understory shrubs and pruning.
  - Removal of trees and/or tree branches:
    - Reduce overall fuel levels, particularly lower-level fuels (dead and alive) that dramatically increase wildfire intensity (Fuel Reduction)
    - Pose a risk of falling on powerlines (Ignition Reduction)
    - May fall on the road and block access (Access & Evacuation)
- Identify funding and potential resources to implement work
  - Secured funding through Sonoma County Ag + Open Space for 2022
- Maintenance
  - Gehricke Road is primarily a privately maintained roadway, and part of funding requirements for the Vegetation Management Grant was maintenance of work done. GRFSC is in communication with all neighbors to ensure that the work is maintained in the years to come.
- Sonoma County Transportation and Public Works (TPW) has responsibility to keep the roadway clear of vegetation within their right of way. This distance should be a minimum of 10 feet from the edge of either side of Gehricke Road. Environmental review will be required in the likely case if government funding will be used for this project.

**Participants:** Licensed tree removal contractors, CAL FIRE, Sonoma County Ag + Open Space, Sonoma County TPW and Department of Emergency Management, Fire Safe Sonoma, and property owners.

**Timing:** Completed October 2022; maintenance to avoid bird nesting season and red flag days.

**Cooperating Agencies and/or Programs:** Fire Safe Sonoma, CAL FIRE, Sonoma Valley Fire District, Schell Vista Fire Protection District, Sonoma County Ag + Open Space

**Secured Funding Sources:** Sonoma County Ag and Open Space Vegetation Management grant program.

## PROJECT: DEVELOPMENT OF EVACUATION PROCEDURES AND PROTOCOLS

**Priority:** H

**Category:** Evacuation

**Goal:** To develop a comprehensive set of procedures, protocols, and guidelines (the “Evacuation Plan”) for the safe, efficient, and orderly evacuation of the Council area in the event of a wildland fire incident. Gehricke Road Fire Safe Council, Inc. will collaborate with the following agencies and stakeholders to develop the Evacuation Plan:

- Sonoma County Sheriff’s Office
- Sonoma County Department of Emergency Management
- Sonoma County Department of Public Works
- CAL FIRE
- Schell Vista Fire Protection District
- Pacific Gas & Electric
- Adjoining landowners

The objective of the Evacuation Plan is to provide residents with practical evacuation guidelines they should follow before and during a wildfire incident. The Evacuation Plan must be developed in collaboration with the agencies listed above and stakeholders to obtain their approval and authorization.

It is anticipated that the Evacuation Plan will include, but not be limited to, consideration of the following topics:

- Sources of situational awareness.
- Evacuation alerts and notifications.
- Agency roles and functions regarding evacuations.
- Voluntary evacuation procedures and guidelines.
- Shelter in place guidelines.
- Evacuation routes and protocols for their use.
- Evacuation alternatives (Temporary Refuge Areas, Safety Zones).

**Participants:** Gehricke Road Fire Safe Council Board Members, Fire Safe Sonoma, CAL FIRE, Sonoma Valley Fire District, Sonoma County Department of Emergency Management, Sonoma County Sheriff’s Office, Sonoma County Department of Public Works, PG&E, adjoining property owners.

**Timing:** It is anticipated that development of the Evacuation Plan will begin in 2022, with completion as soon as possible in early 2023.

**Potential Cooperating Agencies and/or Programs:** American Red Cross

**Potential Funding Sources:** Individual donations, CAL FIRE grants, PG&E grants.

**PROJECT: COMMUNITY CHIPPING PROGRAM**

**Priority:** H

**Category/s:** Fuels Reduction

**Goal:** Reduce/remove hazardous vegetation on residential properties to minimize wildfire intensity.

- Removal of fallen branches, overgrown brush and other vegetation around residential properties that comply with County regulations (13A) and create strong defensible spaces around structures.
- The chipper program will offer service to residents who are working on their wildfire safety clearance and creating their defensible space around their homes.
- The program provides an alternative to burning or hauling fire hazardous brush.
- Ease of vegetation disposal will increase the likelihood of residents removing hazardous vegetation. Include execution plan.

**Participants:** Licensed tree contractors, CAL FIRE, property owners

**Timing:** Year-round; avoiding bird nesting season and red flag days

**Potential Cooperating Agencies and/or Programs:**

**Potential Funding Sources:** National Fire Plan grant from the Cooperative Fire Program of the U.S. Forest Service, Department of Agriculture, Pacific Southwest Region, through the California Fire Safe Council.

## **PROJECT: POWER LINE IGNITION TREE REMOVAL**

**Priority:** H

**Category:** Ignition Reduction, Fuels Reduction

**Goal:** Reduce/remove hazardous vegetation in powerline corridors.

- Remove any trees, branches, or vegetation (alive, dead, or dying) that pose a risk of falling on powerlines.
- PG&E has the responsibility to keep the power lines clear of vegetation that poses risk of wildfire ignition. In many cases, there have been trees marked for removal (over the last 3 years) but PG&E has either lost track of this management or has yet to complete the project.
- Include execution plan.

**Participants:** PG&E, licensed contractors, Fire Safe Sonoma, property owners

**Timing:** Year-round; avoiding nesting season and red flag days

**Potential Cooperating Agencies and/or Programs:**

**Potential Funding Sources:** See the following for potential funding choices and cooperating Agencies.

## **PROJECT: DEFENSIBLE SPACE EDUCATION**

**Priority:** H

**Category:** Education & Outreach

**Goal:** To educate and inform residents and property owners regarding the principles of defensible space to minimize structural ignition and damage from wildfire. To create a culture of year-round implementation of defensible space strategies. To provide the knowledge property owners can use to control and mitigate wildfire risks from vegetation adjacent to structures.

- Conduct an ongoing, year-round education/awareness campaign via community workshops and presentations (live and/or virtual), website information, and newsletters to educate residents and property owners about defensible space fuel reduction.
- Conduct educational sessions to show specific examples of defensible space implementation using before-and-after case studies.
- Provide educational brochures, checklists, research articles, and other materials for residents to use as references while implementing defensible space strategies.

**Participants:** Gehricke Road Fire Safe Council Board Members, Fire Safe Sonoma, CAL FIRE, Sonoma Valley Fire District, Permit Sonoma, PG&E, property owners, licensed arborists, landscape designers, and landscape contractors.

**Timing:** Year-round educational workshops, presentations, newsletters, and website maintenance. On-site educational sessions scheduled for spring through early fall.

**Potential Cooperating Agencies and/or Programs:** Sonoma Ecology Center, The Resilient Landscapes Coalition, and Sonoma Master Gardeners.

**Potential Funding Sources:** Individual donations, CAL FIRE grants, PG&E grants.

**PROJECT: CONSTRUCTION AND MAINTENANCE OF INGRESS/EGRESS ON GEHRICKE ROAD**

**Priority:** H

**Category:** Evacuation

**Goal:** To widen the road to allow for emergency vehicles and residential evacuation in the event of an emergency.

The community survey sent to residents in April/May 2022 identified property owners who were willing to allow widening of the roadway to allow for ingress/egress construction on the roadway.

- Homeowners
- Fire Safe Sonoma
- Sonoma County Department of Emergency Management
- Sonoma County Department of Public Works
- CAL FIRE

**Potential Funding:** Landowners, Sonoma County Open Space Vegetation Management, CAL FIRE grants.

## **PROJECT: STRUCTURAL RESILIENCE EDUCATION**

**Priority:** M

**Category:** Education

**Goal:** To educate and inform residents and property owners regarding the principles of fire-wise design and construction to minimize structural ignition and damage from wildfire. To create a culture of year-round implementation of fire-wise design, retrofitting, and construction. To provide residents the knowledge they need to control and mitigate wildfire risks to structures from radiant heat, embers, and direct flame impingement.

- Conduct an ongoing, year-round education/awareness campaign via community workshops and presentations (live and virtual), website information, and newsletters to educate residents and property owners about the sources of structural ignition and the design and construction strategies to mitigate such sources.
- Conduct educational sessions to show specific examples of fire-wise design and construction using before-and-after case studies.
- Provide educational brochures, checklists, research articles, and other materials for residents to use as references while implementing fire-wise design, retrofitting, and construction principles.

**Participants:** Gehricke Road Fire Safe Council Board Members, Sonoma Ecology Center, Fire Safe Sonoma, CAL FIRE, Sonoma Valley Fire District, Permit Sonoma, PG&E, property owners, licensed contractors, architects, and engineers.

**Timing:** Year-round educational workshops, presentations, newsletters, and website maintenance. On-site case studies scheduled for spring through early fall.

**Potential Cooperating Agencies and/or Programs:** Insurance Institute for Business & Home Safety

**Potential Funding Sources:** Individual donations, CAL FIRE grants, PG&E grants.

**PROJECT: ADDRESS SIGNAGE AND GATE ACCESS FOR EMERGENCY VEHICLES**

**Priority:** H

**Category:** Education & Outreach

**Goal:** To allow for easier navigation of our road in the event of emergencies, establish address signage for all homes that is reflective, noncombustible material. In addition to the address sign campaign, we will reach out to homeowners who identified themselves as having a gate with no emergency access override. Gates that are not equipped with Knox boxes will impede emergency access.

**Participants:** Homeowners, Gehricke Road Fire Safe Council, Sonoma Valley Fire District, and CAL FIRE

**Timing:** Education campaign to be posted on the Gehricke Road Fire Safe Council Website, and installation will happen in 2023 as funding is secured.

**Potential Cooperating Agencies and/or Programs:** Fire Districts, CAL FIRE

**Potential Funding Sources:** Homeowners, donations to Fire Safe Council



## **PROJECT: WILDLAND FIRE BEHAVIOR EDUCATION**

**Priority:** L

**Category:** Education

**Goal:** To educate and inform residents and property owners about the commonly accepted fundamental scientific principles of wildland fire behavior. The educational topics will provide residents with knowledge they can use to evaluate wildland fire risks based on fire science research, and to dispel commonly held misconceptions. The purpose is to encourage better understanding of the sources and nature of wildfire risks in the Wildland Urban Intermix and Interface. The objective is to provide knowledge that residents can use to manage and mitigate wildfire risks and to understand evacuation strategies.

- Conduct an ongoing, year-round education/awareness campaign via community workshops and presentations (live and virtual), website information, and newsletters to inform residents and property owners of the fundamentals of wildland fire behavior.
- General topics will include fundamental aspects of fuels, topography, and weather.
- The general principles will be applied to the specific conditions in the Council area.
- Provide educational brochures, research articles, and other materials for residents to use as references to understand and evaluate risks and the most effective means of mitigating them.

**Participants:** Gehricke Road Fire Safe Council Board Members, Fire Safe Sonoma, CAL FIRE, Sonoma Valley Fire District, Permit Sonoma, PG&E, property owners, licensed contractors, architects, and engineers.

**Timing:** Year-round educational workshops, presentations, newsletters, and website maintenance. On-site educational sessions scheduled for spring through early fall.

**Potential Cooperating Agencies and/or Programs:** Insurance Institute for Business & Home Safety (IIBHS)

**Potential Funding Sources:** Individual donations, CAL FIRE grants, PG&E grants.

## **PROJECT: FIRE METEOROLOGY EDUCATION**

**Priority:** L

**Category:** Education

**Goal:** To educate and inform residents regarding basic meteorological principles relevant to wildfires and how they apply to the Council area. To provide a basic understanding of the large-scale climatological systems that produce Red Flag Warnings so residents may better anticipate them. To provide an understanding of how local meteorological conditions are affected by the large-scale systems and how local fire behavior is affected by local conditions.

- Conduct an ongoing, year-round education/awareness campaign via community workshops and presentations (live and virtual), website information, and newsletters to educate residents and property owners about fundamental meteorological principles applicable to wildfire conditions, prediction, and local effects.
- Provide educational resources, research articles, and other materials to allow residents to understand the causes and nature of fire weather incidents.
- Inform residents of online sources of fire weather conditions, predictions, and data.

**Participants:** Gehricke Road Fire Safe Council Board Members, Fire Safe Sonoma, CAL FIRE, PG&E.

**Timing:** Year-round educational workshops and presentations, newsletters, and website features.

**Potential Cooperating Agencies and/or Programs:** National Weather Service, San Jose State Fire Weather Research Laboratory.

**Potential Funding Sources:** Individual donations, CAL FIRE grants, PG&E grants.  
Sources of Funding and Reference for Potential Projects

# Appendix D

Wildfire Risk Index



# Appendix D:

## What is the Wildfire Risk Index?

The Sonoma County Wildfire Risk Index was developed in cooperation with input from subject-matter experts, Sonoma County staff, Fire Safe Sonoma, the Sonoma County CWPP Steering Committee, and the project team (Tukman Geospatial and Digital Mapping Solutions).

Wildfire Risk Index (WRI) is a model that predicts relative wildfire risk. Higher index values represent a higher relative risk of wildfire. For the Wildfire Risk Analysis, the county's landmass was divided into 100-acre hexagons. Conditions will vary significantly across the area of each polygon—it is entirely possible that areas of relatively low risk could exist within a polygon whose overall risk is high. For parcel level analysis, "ground truthing" to verify data and conditions will be necessary. The value of the WRI is to identify overall trends, which then can be used to suggest the need for and nature of measures that can be taken to reduce risk.

The WRI should be viewed as a high-level analysis and is not appropriate for parcel level detail.

### HOW THE WRI IS CALCULATED

Many different factors contribute to wildfires. The Risk Index inputs were curated from best available data sources for Sonoma County.

#### Wildfire Hazard Index

The Wildfire Hazard Index (WHI) (as opposed to this risk index) took into consideration predicted flame length, transmission line location, suppression difficulty, and fire weather potential. In 2020, as part of Sonoma County's Multi-jurisdictional Hazard Mitigation planning, a Wildfire Hazard Index was developed to quantify the relative wildfire hazard within Sonoma County.

A fuller discussion on the inputs and how it was developed can be found here. <https://sonoma-county-cwpp-hub-site-sonomacounty.hub.arcgis.com/apps/sonoma-county-wildfire-hazard-index/explore>

#### Ember Load Index

Developed by Pyrologix, the ember load index is based on surface and canopy fuel characteristics, climate, and topography and incorporates downwind ember travel. The index also incorporates burn probability.

The model can only estimate embers created by trees and brush - wildland fuels. To date, a good model of embers produced by burning structures is not available. In urban areas, the embers produced by burning buildings will have the potential to influence fire spread, yet this value is not represented in this model.

The Ember Load Index can help identify priority areas where hardening buildings may be needed to resist ignition, yet recent fire behavior indicates that it is important for all Sonoma County residents to consider undertaking structure hardening, regardless of the ember load risk. More information regarding the Ember Load Index can be found here.

<http://pyrologix.com/reports/Contemporary-Wildfire-Hazard-Across-California.pdf>

### **Structure Density**

The structure density is a count of all structures found within each 100-acre hexagon. The counts were then classed into five quantiles and assigned a number from 1 through 5. Hexagons with no structures were assigned 0 (zero).

### **Road Network Rank**

These values are based on road density, number of roads into and out of a community, and speed limits. The road network rank was developed by Kevin Lacefield of Sonoma County's ISD for a preliminary evacuation analysis (completed in 2019). New evacuation analyses are under development for the County. As they are developed, new data may be integrated into the CWPP Risk Index. Note that the road network rank does not impact an individual property's or project's compliance with Sonoma County Fire Safe Standards (Chapter 13, Section V) or Board of Forestry Fire Safe Regulations, because the road network rank provides a high-level analysis of the aforementioned data inputs whereas the local standards and state regulations govern site-specific perimeters and access.

## **DATA INPUTS**

The following are inputs used to inform the Sonoma County Wildfire Risk Index.

### **Wildfire Hazard Index:**

The Sonoma County Wildfire Hazard Index (WHI) is a compilation of predicted flame length, potential fire weather, and other factors. The average WHI in each 100-acre hexagon in Sonoma County are classed here into five categories: 1 is low hazard, 2 is moderate hazard, 3 is high hazard, 4 is very high hazard, and 5 is extreme hazard.

### **Wildfire Hazard Index within 1 Mile Buffer:**

The average WHI within 1 mile of each 100-acre hexagon is classed the same way the WHI data is classed and is designed to estimate how hazardous surrounding areas are.

### **Ember Load Index:**

Developed by Pyrologix for the entire state, this layer was included to help quantify where embers from wildland fuels (see above) would accumulate. The lower the value, less accumulated embers and a lower burn probability are expected. The higher the value, more accumulated embers and a

higher burn probability are expected. This layer is classed into five categories: 1 (brown) is low, 2 (orangish) is moderate, 3 (yellow/orange) is high, 4 (teal) is very high, and 5 (dark teal) is extreme.

#### **Ember Load Index within 1 Mile:**

Similar to the 1-mile buffer used for the WHI, the average Ember Load Index within 1 mile of any 100-acre hexagon in Sonoma County was calculated. Again, the idea is to help characterize the surrounding areas of any 100-acre hexagon in the county.

#### **Structure Density (count):**

These classes represent the following number of structures found within the 100-acre hexagon: A ranking of 0 represents no structures are present; a ranking of 2 represents 1 to 3 structures; a ranking of 3 represents 4 - 10 structures; a ranking of 4 represents 11 to 37 structures; and a ranking of 5 represents over 38 structures are present in the given area.

#### **Structure Density within 1 Mile:**

Like the WHI and the Ember Load Index, the number of structures within a 1-mile radius of each 100-acre hexagon was also averaged. This was done to quantify the structure density surrounding any given location within the county. The average structure counts are classed in a similar way.

#### **Road Network Rank**

Lastly, a Road Network Rank developed by Sonoma County's GIS department is included wherein street network data was analyzed to quantify the street accessibility within the county. Accessibility is thus measured on a scale of one to five, with five being the least accessible and one being the most accessible.

### **CALCULATING WILDFIRE RISK**

Relative wildfire risk was calculated by simply adding up all nine inputs. Each was classed from 1 to 5 for a total range of 1 to 35. No hexagons got a 1 ranking (lowest is 5) and none got a 45 ranking (highest is 32).

# Appendix E

COMMUNITY HISTORY OF SONOMA VALLEY  
AND GEHRICKE ROAD



# Appendix E: Community History of Sonoma Valley and Gehricke Road

## SONOMA VALLEY

Sonoma Valley is located in southeastern Sonoma County, California, about 45 miles north of San Francisco. The 17-mile valley extends just north of San Pablo Bay and is defined by the Sonoma Mountain range to the west and the Mayacamas Mountain range to the east.

Indigenous people have called the Sonoma Valley home for at least 12,000 years before the arrival of the Spanish missionaries in the early 19th century. The local tribes include the Coast Miwok, Pomo, and Wappo. The Coast Miwok village of Huchi was located roughly in the present-day town of Sonoma. Sonoma Creek was probably the eastern border, which means Gehricke Road was likely near the border of the traditional Coast Miwok and Wappo lands. The area's Native American population was decimated in the smallpox epidemic of 1837, known as the "Miramontes Epidemic."

## CITY OF SONOMA

On July 4, 1823, Mission San Francisco Solano de Sonoma, the northernmost and final of the 21 missions established in California by the Franciscans, was founded in Sonoma by Father José Altamira.

Lieutenant Mariano Guadalupe Vallejo was sent to Sonoma to secularize its mission under a Mexican Government program being implemented for all California and Mexican missions. Vallejo received an order from Governor José Figueroa, dated June 24, 1835, to found the Pueblo de Sonoma. He laid out the eight-acre central Plaza (still the largest in California) and the street grid for the new pueblo.

On June 14, 1846, a group of Americans rode into a pre-dawn Pueblo de Sonoma and aroused Vallejo's household from sleep. This group of non-affiliated individuals who were dissatisfied with the immigration policies of the Mexican Government, were intent on establishing their own rule of law to avoid expulsion by the Mexican authorities. To that end, they declared a Bear Flag Republic, raised a flag with a bear and a star in what is now known as the Sonoma Plaza, and declared a California Republic with Sonoma as its capital.

This California Republic lasted only until July 9, 1846, when Lieutenant Joseph Warren Revere, U.S. Navy, (Lt. Revere was a grandson of the Revolutionary War hero, Paul Revere) rode into Sonoma to raise the stars and stripes of the United States.

Sonoma was first incorporated as a city on April 4, 1850. General Vallejo had the city unincorporated on April 26, 1862, for the benefit of certain landowners such as himself. It was then re-incorporated



as a city on September 3, 1883, and the cornerstone of the Sonoma City Hall was laid on February 24, 1906.

Known as the birthplace of the California wine industry, Sonoma Valley is home to some of the earliest vineyards and wineries in the state. The area includes an amazing variety of landscapes, microclimates, and weather, from meadows and valleys to rolling hills and mountains, from cool fog and wind to hot sunny summer days.

## **GEHRICKE ROAD**

Gehricke Road begins at Lovall Valley Road and follows Nathanson Creek over four miles along what the locals call Gehricke Canyon in the hills northeast of the town of Sonoma. The road is bordered by Nathanson Creek to the east, the original Alta Vista Ranch to the northeast, Schocken Hill to the southwest, The Ranch properties in the hills to the east, and Mission Highlands properties in the hills to the west.

### **Nathanson Creek**

The headwaters of Nathanson Creek lie in the rugged terrain along the Sonoma / Napa County border in the Mayacamas Mountains. From the slopes of Hogback Mountain, the upper portion of the creek courses in a southwesterly direction through a narrow V-shaped canyon, along Gehricke Road, and into Sonoma Valley. Continuing through the town of Sonoma, the creek converges with Schell Creek south of Vineburg, and eventually flows into San Pablo Bay, the northern arm of San Francisco Bay.

Nathanson Creek is named for the Nathansons, a pioneer family who lived along the creek in the mid 1800s.

In February 1849, German newlyweds Martin and Dorothea Nathanson boarded the Steinberger, a sailing ship bound for California where gold had been discovered a year earlier. The two teenagers had been married on Dorothea's 16th birthday following a whirlwind courtship. When Martin's family promptly disowned him, Dorothea's father agreed to finance a journey to America where they hoped to make a fresh start.

On the way around Cape Horn, the ship was badly damaged by several storms and barely made it to Valparaiso, Chile. There, Dorothea gave birth to their first child, a daughter they named Caroline. For three weeks she nursed her newborn while the Steinberger lay at anchor for repairs. The first night back at sea Caroline passed away, and at dawn while the captain read the burial service, was buried at sea.

Dorothea was not yet 17 when, after a nine-month voyage, the Steinberger finally reached San Francisco. She and Martin opened a restaurant right on the water where they could see the bay through cracks in the floorboards. Women were scarce in Gold Rush San Francisco and Martin grew jealous of the customers flirting with his wife. After accusing her of flirting back, he decided the only solution was for the two of them to leave town. The couple moved to Sonoma in 1851, at first sharing

Casa Grande with the Vallejo family while the General waited for his new home at Lachryma Montis to be finished. Martin ended up purchasing a lot from Vallejo and, using surplus lumber from a newly completed church, he built a grocery store next to the barracks.

Eventually the family homesteaded a farm east of town on the banks of the creek that now bears their name. Martin and Dorothea went on to have seven more children, all of whom reached adulthood.

### **Alta Vista Ranch**

#### **OTTO & JULIA GEHRICKE**

*(There is some confusion as to the spelling of Gehricke, sometimes spelled Gericke.)*

Alta Vista Ranch, a 500 ranch on upper Gehricke Road, was established by Otto Gehricke in the 1860's.

Otto Gehricke was from a prominent California family and became a widely known Sonoma County rancher. His wife, Julia Gehricke was the daughter of Mr. and Mrs. Patrick Mulluly, pioneer settlers of Western Sonoma County. The Gehrickes lived at Alta Vista for many years, but eventually leased the ranch and relocated to Sebastopol. The ranch remained in the Gehricke family until it was purchased in 1935 by Inez and Lee Ettelson.

#### **INEZ & LEE ETTELSON**

A native of San Francisco and a member of a prominent Bay Area family, Inez married Dr. Harold Fletcher, divorcing him in 1933. A year later she married Lee Ettelson, who was then the editor of the San Francisco Examiner.

Wanting a simple, country life, Inez and Lee purchased the Otto Gehricke Ranch in 1935 and moved to Sonoma from Palo Alto with their children to make their home on the rugged and beautiful hilltop acreage. Established at the north end of Gehricke Road in the 1860s, the ranch included a prune orchard and a vineyard. Inez and Lee purchased the first 500 acres for \$15,000, and additional property was purchased over the years to eventually total 1,100 acres.

From the mid-1930's until World War II, the Ettelsons were engaged in turkey raising, but abandoned this pursuit when it became financially unsound. Subsequently, a shorthorn dairy herd was developed. In the late 1940's this was replaced by a herd of registered Black Angus cattle, the last of which were sold in 1978. Over the years, the farm was home not only to turkeys and cattle, but also pigs, horses, chickens, and sheep.

Inez, a very strong and independent woman, lived alone for some time following her divorce from Harold Fletcher in the 1940s. The ranch became a gathering place for three generations of family: her children, their spouses, and her grandchildren. Inez's son Dr. Grant Fletcher, then the founder of the Inhalation Therapy Program at Stanford University, left his position and moved to the ranch with his wife Ginny 1972.

Although the Gehrickes had a small vineyard of Zinfandel on the ranch in the late 1890's, more than half a century passed before the next planting of grape vines on the historic acreage. It was during the period of 1963 to 1965 that Inez and her Grant converted the ranch to wine grapes.

In 1965 they replaced the old Gehricke vineyard with 3.5 acres of Gewurztraminer vines. Grant recalled that this then represented about 80 percent of all Gewurztraminer grapes in Sonoma County. "Not many people around here knew much about them at the time," Fletcher said. Ginny chimed in "It was Mom's (Mrs. Ettelson's) idea. She was a romanticist and remembered that some of her ancestors grew Gewurztraminer grapes in the Australian Alps." Grant said that his mother had checked with UC Davis, and they had assured her that Gewurztraminer would do well there. The 3.5-acre vineyard yielded a small but high quality crop of grapes each fall.

Impressed with the success of Inez's vineyard project and the growing demand for white wines, from 1972 to 1977 Gewurztraminer was planted on the acreage that Otto Gehricke had in his Zinfandel vineyard and prune orchard.

Grant and Ginny continued to live at the ranch following the death of Inez Ettelson in 1982. In 1986 the ranch was subdivided into four parcels and sold.

### **Milani Ranch**

The Milani family purchased 350 acres on lower Gehricke Road in 1880, which included what later became Ravenswood Winery as well as the Haywood property. The section of Gehricke Road from Lovall Valley Road to Brazil Street was then known as Milani Road.

In 1936 relatives of the Milani family, cousins Bill and Margaret Paganini and Del and Art Bruschera, purchased the property for a summer retreat and getaway from San Francisco. In 1947 they built their summer houses and put in the original pool. The pool, built over a year-round spring that provided water for the homes as well, was hand dug and lined with cobblestones. The Paganini and Bruschera families often traveled to Sonoma from San Francisco until 1960 when they moved to their Sonoma ranch.

Brothers Gene and Les Sebastiani, distant cousins of the family, purchased their properties from the Paganini and Bruschera families. They built their houses and eventually retired there. The property retained after the 1973 sale to Peter Haywood remains in the Bruschera and Paganini families today.

### **Haywood Estate**

Peter Haywood purchased over 300 acres from the Bruschera and Paganini families in 1973. Three years later he planted 75 acres of vineyards, eventually expanding to 90 acres of zinfandel, cabernet sauvignon, cabernet franc, and malbec wine grapes. Peter named his vineyard Los Chamizal, which translates roughly to "a thicket of hardwoods."

In 1980, Peter purchased a small winery on lower Gehricke that was built by Walter Benson in 1978-1979. He crushed his first grapes and sold a selection of wines under the Haywood Estate Winery label. He then expanded production, built the wine storage building and tasting room, and opened it to the public. In 1992 the winery was sold to Ravenswood Winery and Peter moved production of Haywood wines to Buena Vista Winery.

Peter and Maggie Haywood continue to maintain the vineyards and reside on the property today.

### **Schocken Hill**

Schocken Hill borders Gehricke Road on the southwest, standing between the road and Sonoma Valley. In the 1880s Schocken Hill was an active quarry that supplied millions of basalt cobblestones to San Francisco and other Bay Area cities.

Basalt is a fine-grained rock formed by quickly cooled lava and is the most common form of volcanic rock. The basalt on Schocken Hill is of the columnar type, perfectly suited for crafting blocks. “The west and south slopes of the Mayacamas Mountains north of Sonoma were considered one of the best areas of quality basalt deposits and small quarries began in 1882,” according to local historian Peter Meyerhof. Though the main quarries were on Schocken Hill, there are smaller quarries scattered throughout the hills and along Gehricke Road, the remnants of some still visible today.

Solomon Schocken, a Jewish immigrant who moved to Sonoma, became one of its most prominent businessmen and leaders. Among his many entrepreneurial activities was developing a booming basalt block quarry business. In 1886 he leased property on Battery Hill known as the Rock Quarry. In July 1888 he bought 62 acres for \$2,250 and an additional 7.5 acres for \$375 in 1892. Battery Hill was soon referred to as Schocken Hill.

Schocken’s enterprise continued to grow and soon dominated the basalt extraction industry in Sonoma. At its peak he employed over one hundred workers. In 1886 Schocken’s quarries produced 350,000 blocks and stimulated a boom in the economy of Sonoma. This basalt stone was used extensively for paving the streets of San Francisco, helping the city to expand its cable car system.

### **SOURCES**

**The Sonoma Index-Tribune archives courtesy of Bill Lynch.** The Index-Tribune was founded in 1879 and was owned and operated by members of the Lynch family from 1884 to 2012. The archives date back to 1880.

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# Appendix F

POTENTIAL FUNDING



# Appendix F: Potential Funding

Below are available programs for potential funding and reference for planning and/or implementing wildfire prevention and community protection in the Gehricke Road Fire Safe Council CWPP area:

## CAL FIRE

CAL FIRE provides cost-share funding assistance for forest stand improvement projects and other vegetation treatments through the following programs:

**California Forest Improvement Program (CFIP):** The purpose of the CFIP program is to encourage private and public investment in, and improved management of, California forest lands and resources. This focus is to ensure adequate high-quality timber supplies, related employment and other economic benefits, and the protection, maintenance, and enhancement of a productive and stable forest resource system for the benefit of present and future generations.

**Vegetation Management Program (VMP):** CAL FIRE's VMP is a cost-sharing program that focuses on the use of prescribed fire, and some mechanical means, for addressing wildland fire fuel hazards and other resource management issues on State Responsibility Area (SRA) lands. VMP allows private landowners to enter into a contract with CAL FIRE to use prescribed fire and/or mechanical treatments to accomplish a combination of fire protection and resource management goals. Implementation of VMP projects is by CAL FIRE Units. The projects which fit within a unit's priority areas (e.g., those identified through the Fire Plan) and are considered to be of most value to the unit are those that will be completed. Landowners who choose to apply for participation in the Vegetation Management Program should contact their local Battalion Unit for more details. CAL FIRE also provides several competitive grant funding programs for vegetation treatments:

**California Climate Investments (CCI) grants – Fuels Reduction:** CAL FIRE will solicit and competitively award grants that reduce hazardous fuels and are designed to meet greenhouse gas emission objectives. Payments will be made to grantees via reimbursements. All projects shall be designed to meet greenhouse gas emission objectives. These objectives include increased carbon sequestration in trees retained on the project site, reduction of wildfire hazards to reduce wildfire emissions, utilization of biomass to offset use of fossil fuels, and utilization of solid wood materials to offset emissions resulting from removal of vegetation. Vegetation treatment forestry prescriptions will focus on treating understory trees and brush with a goal of reducing fire hazards, improving tree growth, stabilizing carbon in retained trees, and increasing forest resilience.

All projects will include a scientific methodology to calculate and quantify the GHG emission reductions resulting from the project. Priority shall be given to projects which utilize biomass and other solid wood products; provide assurance of achieving and retaining GHG benefits, projects which are included in a local fire plan or conservation plan; and projects that have a documented assessment of need for providing wildfire protection of human infrastructure and watershed values, while providing other co-benefits (reduced forest pest damage, air-shed improvements in non-attainment air basins, invasive weed control, improvement to wildlife habitat, etc.)

**Forest Health (CCI) Grants:** The Forest Health GGRF Grant Program is a new program and will use funds provided by the Greenhouse Gas Reduction Fund for California Climate Investments administered by CAL FIRE. Through the Forest Health CCI Grant Program, CAL FIRE funds and implements projects to proactively restore forest health in order to reduce greenhouse gases, to protect upper watersheds where the state’s water supply originates, to promote the long-term storage of carbon in forest trees and soils, minimize the loss of forest carbon from large, intense wildfires, and to further the goals of the California Global Warming Solutions Act of 2006 (Assembly Bill 32, Health and Safety Code Section 38500 et seq.) (AB 32).

Forest Health CCI Grant projects must focus on large, landscape-scale forestlands composed of one or more landowners, which may cover multiple jurisdictions. Projects must be comprised of logical management units and greater consideration will be given to organizations with a proven record of success in achieving consensus-based solutions between stakeholder groups with different priorities and perspectives.

Forest Health CCI Grant projects may include reforestation, fuel reduction, pest management, conservation, and biomass utilization intended to increase forest health, increase carbon storage in forests, reduce wildfire emissions and protect upper watersheds, where much of the State’s water supply originates. Projects that implement a mix of these activities, with multiple partners will be given priority.

#### **California Fire Safe Council (CFSC) Wildfire Prevention Grants**

Funding from the California Fire Safe Council is provided through master grants to CFSC by the USFS to administer the Grants Clearinghouse program, with CFSC issuing subawards to successful applicants for the following areas of hazard mitigation competitive grants:

- Hazardous fuels reduction and maintenance projects on non-federal land
- Community Wildfire Protection Plans (CWPP) and other planning or assessment documents
- Prevention and mitigation education and outreach opportunities for landowners and residents in at-risk communities

#### **Sonoma County Ag + Open Space Vegetation Management Grants**

The Vegetation Management Grant Program provides resources and grant funding for vegetation management in high-risk areas throughout Sonoma County. This program was the County’s effort to fund immediate vegetation management in areas of imminent threat from wildfire or recovering from the impacts of a recent wildfire.

Since the creation of this program in 2021, the Vegetation Management Grant Program has worked to support 46 different projects across the county. This funding has supported the work of local fire districts, local Firewise and Community Wildfire Protection Plan projects, Resource Conservation Districts, nonprofit organizations, Tribes, and technical advisors.



The Board of Supervisors authorized two years of funding for this grant program and are now discussing future paths towards strengthening wildfire resilience, ecological health of our county landscapes, and the safety of our communities.

**USDA Natural Resource Conservation Service (NRCS)**

This entity provides cost-share funding assistance for forest practice and road-related projects through the following program:

The Environmental Quality Incentive Program (EQIP) provides financial and technical assistance to agricultural producers and forest landowners in order to address natural resource concerns and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, reduced soil erosion and sedimentation or improved or created wildlife habitat.