APPENDIX A :

Existing Regulations, Ordinances, and Programs

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CONTENTS

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This appendix provides background information on legislation and existing guidance and planning across jurisdictions in the county. This information is provided to facilitate future planning alignment between entities.

A.1 LEGISLATIVE DIRECTION

A.1.1 MUNICIPAL DIRECTION

Solano County Fire Code

The Solano County Code contains the Fire Code in Chapter 6 Section 3-03, which is cited as "Uniform Codes adopted" (Solano County Code, Solano County 2022a). The Solano County Fire Code is adopted from the 2019 edition of the California Fire Code and the 2018 International Wildland-Urban Interface (WUI) Code and is amended to suit the needs of the county. The Fire Code is effective within the county boundaries where a municipal code does not have jurisdiction, including private land. Implementation, administration, and enforcement of the code are carried out by the building official of Solano County. The code pertains to all construction that will be used for human habitation including new construction, additions, repairs, and renovations (Solano County Code, Solano County 2022a).

The Solano County Code contains a chapter titled "Abatement of Fire Hazards," which provides guidance on clearance of flammable material, including dry grass, brush, and litter, on unincorporated land. Chapter 12 Section 5-20 charges the county officer with the responsibility of identifying flammable material buildup hazard areas and is tasked with removing the material or ordering its removal (Solano County Code, Solano County 2022a).

Solano County Public Works Roadside Vegetation Management

The Solano County Division of Public Works is part of the Department of Resource Management, providing roadway maintenance, land development, and permitting services to the county. The Division has an herbicide application and mowing program to reduce fuel loads along county roads to build wildfire resilience.

To learn more about the work done by Solano County Public works, please visit: https://www.solanocounty.com/depts/rm/public_works/operations_division.asp

Solano Land Trust Vegetation Program

Founded in 1986, Solano County Land Trust began as cooperative effort by open space advocates, land developers, and a municipal government to protect the natural landscape and agricultural legacy of Solano County. The organization aims to promote conservation and proper stewardship by building a strong relationship between the community and the county's landscape. The Land Trust, which protects over 22,000 acres of land in Solano County, has implemented a program aimed at reducing fuels on its properties. The program involves the use of herbicide application, mowing, and grazing.

For more information on the Solano Land Trust, please visit: https://solanolandtrust.org/

Benicia Standard G-701

Benicia's maintenance standard for vegetation management aligns with Benicia's City Code and seeks to regulate weed growth and the accumulation of flammable materials within the city. These maintenance standards apply to those owning, occupying, or managing property in Benicia, all of which are required to take part in vegetation management activities to reduce the individual and community levels risks to wildfire hazards. General rules surrounding weed and rubbish control are outlined within the Chapter 8 City Code, wherein the city asserts authority to enforce required weed removal at the property owners' expense. For more information on Benicia's vegetation management Standard G-701, please visit: https://www.codepublishing.com/CA/Benicia/html/Benicia08/Benicia0808.html#8.08.060

Dixon Weed and Rubbish Program

The City of Dixon Municipal Code has designated weed and rubbish accumulation as a public nuisance, posing as a fire hazard and menace to public health. The City Code provides the public with a collection of definitions pertinent to weed abatement, ensuring that the message is clear for property owners to follow. Also outlined within the City Code are the responsibilities of property owners in carrying out weed abatement, with specific requirements regarding abatement extent and property characteristics. For more information on weed abatement within the city of Dixon, please visit: https://www.codepublishing.com/CA/Dixon/html/Dixon09/Dixon0901.html#9.01.500

Fairfield Fire Prevention Standard 95-45

The City of Fairfield's Fire Prevention Standard 95-45 outlines the vegetation maintenance requirements set by the City. The standard is part of Chapter 23 ("Weed and Rubbish Abatement") of the Fairfield Municipal Code. In alignment with CAL FIRE defensible space guidance, these maintenance standards assist in limiting fuel loads and reducing the risk of severe fire on properties throughout the city. These standards include management activities such as weed maintenance, weed removal, and clearance of dead brush. The standard can be viewed at: https://www.fairfield.ca.gov/home/showpublisheddocument/4274/637553975487800000

Firework Ordinances

In 2022, communities throughout Solano County were issued strengthened ordinances to limit the use of illegal fireworks. All aerial fireworks are banned in Solano County unless they are used for permitted shows in select communities around the county. Outlined below are the varied firework ordinances in the cities and unincorporated areas within Solano County (Solano NewsNet 2022). It should be noted that these ordinances were for 2022; thus, ordinances may change for 2023.

- **Benicia**: All fireworks are banned in Benicia, including "safe and sane" fireworks that remain legal in surrounding communities. Firework shows that are conducted with proper licensing are permitted.

- **Dixon**: The City of Dixon allows for the sale and use of "safe and sane" fireworks. However, they can only be used during specified times.

- **Fairfield**: The use of any type of fireworks in the City of Fairfield is banned, and those caught with or using illegal fireworks can face fines and jail time.

- **Rio Vista**: The City of Rio Vista allows for the use and permitted sale of "safe and sane" fireworks. Fireworks conforming to this ordinance can only be used from 8 a.m. to 10 p.m. on July 4.

- **Suisun City**: Suisun City allows for the use and permitted sale of "safe and sane" fireworks. However, they can only be used during specified times.

- **Vacaville**: All fireworks are banned in Vacaville, including "safe and sane" fireworks that remain legal in surrounding communities. Fireworks purchased legally cannot be used in this community, and violators may be fined up to $1,000.

- **Vallejo**: All fireworks are banned in Vallejo, including "safe and sane" fireworks that remain legal in surrounding communities. Fireworks purchased legally cannot be used in this community, and violators may be fined up to $1,000.

- **Unincorporated areas**: All fireworks are banned in rural Solano County (unincorporated Solano County), including "safe and sane" fireworks that remain legal in surrounding communities. Fireworks purchased legally cannot be used in unincorporated communities.

Rio Vista Weed and Rubbish Abatement Program

The standards set forth in the Rio Vista Municipal Code (Section 8.24) guide the weed abatement program and aim to address fire safety issues on private property throughout the city. Outlined within Chapter 8.24 are the standards for abatement, procedures regarding maintenance and removal notices, inspection processes and fees, violation penalties, and other key information to ensure that proper vegetation management is carried out and fire hazards are reduced within the city. The Rio Vista Fire Department has released an explanation of the weed abatement program and has provided stakeholders with definitions for important terminology surrounding the maintenance of vegetation. For more information, please visit:
https://www.riovistacity.com/sites/default/files/fileattachments/fire_department/page/3234/standard_3.2_weed_abatement.pdf

Suisun City Weed and Rubbish Program

The Suisun City Municipal Code outlines weed and rubbish accumulation as an act of public nuisance, which is enforced by ordinance through the police department. Those failing to take part in management practices that reduce weeds present on their property will receive an infraction or be liable for the costs to abate the property. The Suisun City Fire Department works with commercial and vacant lot owners to ensure that hazardous fuel loads are abated to increase fire safety for the community. In the spring, when weed growth in abundant, the fire department issues weed abatement notices to remind property owners and occupants of their responsibility to carry out these activities. For more information on weed abatement and Suisun City's Municipal code, please visit:
https://library.municode.com/ca/suisun_city/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.12PUNU

Vacaville Weed Abatement Program

Vacaville's Municipal Code Section 8.04.200 and adoption of California Fire Code Section 304.1.5 in Chapter 14.20.271.040.S requires the removal of dry vegetation, weeds, rubbish, and other debris leading to increased fire hazards. Properties falling within the minimum lot clearing requirements must carry out the necessary vegetation clearance to reach compliance, with all violations being abated by the City at the property owner's expense. Vacaville's robust code enforcement program ensures 100%

compliance each year on or before June 1. The City's strict weed abatement ordinances, which are more stringent than state-level requirements, have led to significant fuel reductions. Outcomes of the recent LNU Lightning Complex have highlighted successes regarding the City's weed abatement programs; for example, several treated areas slowed the spread of fire and reduced fire severity (Multi-Jurisdictional Hazard Mitigation Plan Annexes, Solano County Office of Emergency Services [Solano OES] 2022). Additional information regarding the ordinance and minimum lot requirements can be found at: https://www.ci.vacaville.ca.us/home/showdocument?id=12734.

Vallejo Weed Abatement Program

The City of Vallejo's weed abatement program aims to reduce the quantity and severity of vegetation fires within the service area of the Vallejo Fire Department (Weed Abatement Program, City of Vallejo 2022b). Among the lot and parcel types inspected are those that fall within the city limits of Vallejo and those that are within both Solano County and the area protected by East Vallejo Fire Protection District. Property owners with lots or structures that fit the specification of the weed abatement program are provided with annual notifications regarding their need to abate the flammable materials on their property. All activities conducted through this program are in accordance with the California Fire Code and local ordinances, following proper defensible space and roadway clearance guidelines. Property owners with endangered or threatened plants and wildlife present on their property must notify the California Department of Fish and Wildlife (CDFW) before taking part in vegetation clearance. For additional details on the City of Vallejo's weed abatement program, please visit: https://www.cityofvallejo.net/cms/One.aspx?portalId=16925451&pageId=17958374

A.1.2   STATE DIRECTION

The 2021 California Wildfire and Forest Resilience Action Plan recognizes that California faces continued and urgent threats from catastrophic wildfire. The purpose of this plan is to provide a foundation for supporting healthy, resilient, fire-adapted forests. The plan is organized into four overarching goals that break down into sub-goals and their respective action items. Some of the goals/strategies specific to wildfire include:

1. **Increase Fuel Breaks:** Reduce the risk of wildfire and slow fire spread within the WUI.

2. **Protect Wildfire-Prone Homes and Neighborhoods:** Expand and extend defensible space programs.

3. **Improve Utility-Related Wildfire Risk:** Ensure utility providers are compliant with wildfire regulations.

4. **Create Fire-Safe Roadways:** Ensure emergency evacuation routes can function as a fuel break.

The 2014 National Cohesive Strategy, California's 2019 Strategic Plan, California's Wildfire and Forest Resilience Action Plan, and Federal Emergency Management Agency (FEMA) Disaster Mitigation Act of 2000, all mandate community-based planning efforts with full stakeholder participation, coordination, project identification, prioritization, funding review, and multiagency cooperation. In compliance with Title 1 of the Healthy Forests Restoration Act of 2003 (HFRA), a community wildfire protection plan (CWPP) must be mutually agreed upon by the local government, local fire departments, and the state agency responsible for forest management. As outlined in HFRA, this Plan is developed in consultation with interested parties and the federal agencies managing land surrounding the at-risk communities. See Figure A.1 for an overview of California's wildfire regulatory environment.
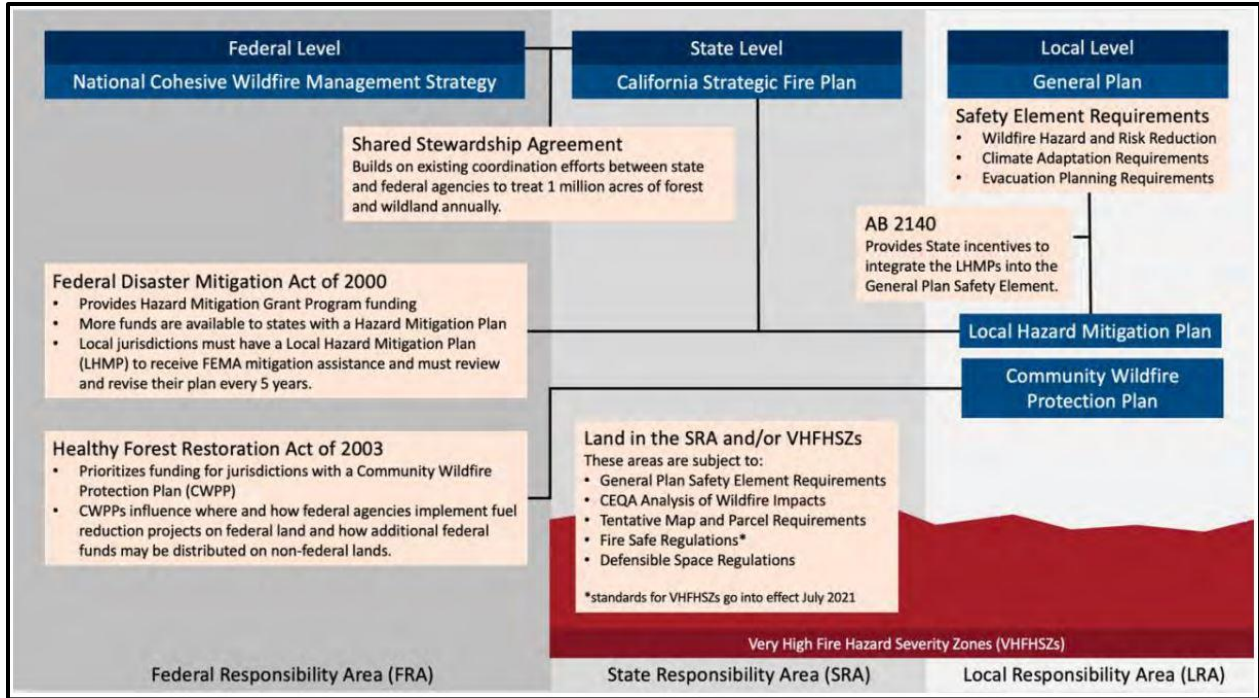
Figure A.1. California's wildfire regulatory framework. Source: CA GOPR (2022)

California Bills and Regulations

Assembly Bill 179: In September 2022, Governor Newsom signed Assembly Bill 179 authorizing $1.3 billion over the next 2 years to build wildfire resilience and bolster forest health throughout the state. The bill allocates $472 million toward forest health and fire prevention planning, $130 million toward state-owned land stewardship, $50 million for post-fire reforestation, $170 million for state conservancy forest health projects, $70 million for fire crews and prescribed burning activities, $40 million for the Regional Forest and Fire Capacity Program, $30 million for workforce development, and $25 million to assist small landowners (California Wildfire & Forest Resilience Task Force 2022). This plan is part of the Governor's Wildfire and Forest Resilience Action Plan, which aims to increase and expedite forest health projects to sustain and protect communities and meet economic and environmental goals (California Department of Water Resources 2021).

Assembly Bill 1823: Assembly Bill 1823 amended Public Resources Code (PRC) 4290.1 to require that on or before July 1, 2022, the State Board of Forestry and Fire Protection to develop criteria for and maintain a "Fire Risk Reduction Community" list of local agencies located in a State Responsibility Area (SRA) or a very high fire hazard severity zone (FHSZ) that meet best practices for local fire planning. The existing law requires the State Board to consider specific factors when developing the criteria for the list, including recently developed or updated CWPPs (California Governor's Office of Planning and Research [CA GOPR] 2022). This Plan is in alignment with the requirement stipulated by Assembly Bill 1823 (2019).

PRC 4124.7: PRC 4124.7 requires CAL FIRE to prioritize local agencies in the "fire risk reduction community" list for Fire Prevention Grants. The Solano Resource Conservation District (RCD) is a local agency currently listed in the "fire risk reduction community" (Fire Risk Reduction Community List, CAL FIRE 2023b).

Senate Bill 1241: Senate Bill 1241 (2012) revised the safety element stipulations in state law to instruct all cities and counties whose planning area is within the SRA or a very high FHSZ to address and include specific information concerning wildfire hazards and risk, and strategies and policies to address and minimize unreasonable risks associated with wildfire. The specific requirements are codified in Chapter 311 of the Bill. As a result, CAL FIRE maintains FHSZ maps and data for the entire state. Three classes of fire hazard severity classifications exist: moderate, high, and very high. Fire hazard severity considers the amount of vegetation, temperature, wind, humidity, and topography, and represents the likelihood of an area burning over a 30- to 50-year interval (CA GOPR 2022).

Senate Bill 379: Senate Bill 379 (2015) amended Government Code Section 65302(g)(4) to require that all general plans in California address climate change adaptation and resilience as part of the safety portion of the plan. This amendment requires local jurisdictions to add this change as part of the next revision to their local hazard mitigation plan or, if a local hazard mitigation plan has not been adopted, the safety element must be reviewed and updated to include applicable climate adaptation and resilience strategies (CA GOPR 2022). This Plan may be integrated into the Safety Element of the City General Plan during the next scheduled revision.

Senate Bill 246: As established by Senate Bill 246 in 2015, the Integrated Climate Adaptation and Resiliency Program (ICARP) is the leading program responsible for coordinating response to climate change impacts on a local, regional, and state scale. ICARP utilizes the Adaptation Clearing House, an online database of climate resources, and coordinates with the Technical Advisory Council to aid in facilitation of resiliency efforts. CA GOPR recommends that climate change–related safety updates be made in alignment with ICARP vision, principals, definitions, and wildfire requirements where applicable (CA GOPR 2022).

Senate Bill 901: Senate Bill 901 (2018) requires the State Board to regularly update regulations for fuel breaks and greenbelts close to communities to enhance fire safety within the SRA or areas designated as very high FHSZs. The Bill also requires that the updated regulations include measures to maintain undeveloped ridgelines to minimize fire risk and enhance fire protection (CA GOPR 2022).

PRC 4290: PRC 4290 confers the State Board with the authority to adopt regulations for base level fire safety standards with respect to SRAs and to lands designated as very high FHSZ. The fire safety standards address multiple issues, including fuel modification standards for fuel breaks and greenbelts; road and driveway standards for emergency response access and public evacuation; minimum private water supply reserves for fire suppression; and standards for street, road, and building signage. However, these standards do not replace local regulations that meet or exceed minimum requirements adopted by the State Board (CA GOPR 2022).

PRC 4291: PRC 4291 details mandatory defensible space requirements for any person who owns, leases, controls, operates, or maintains a building in an SRA or very high FHSZ within a Local Responsibility Area (LRA). The requirements include, but are not limited to, 100 feet of defensible space around homes, removal of vegetation debris from the perimeter and the roof of homes/structures, and removal of vegetation from chimneys or stovepipes. This code was updated in January 2021 to require an ember-resistant zone within 5 feet of a home/structure on or before January 1, 2023 (CA GOPR 2022).

Assembly Bill 38: Assembly Bill 38 (2019) amended sections of the Civil, Government, and Public Resources Codes to set forth a comprehensive wildfire mitigation financial support program, which facilitates cost-effective home/structure hardening and retrofitting to create fire-resistant homes, businesses, and public structures. The amendments require the State Fire Marshal, in consultation with the Director of Forestry and Fire Protection and the Director of Housing and Community Development, to identify building retrofits and hardening measures eligible for financial assistance under the program.

Additionally, the amendments require that CAL FIRE identify defensible space, vegetation management, and fuel treatment procedures eligible for financial assistance. Wildfire hazard areas eligible for financial assistance under the program include LRAs situated within very high FHSZs and SRAs within any FHSZ (CA GOPR 2022).

Senate Bill 1035: Senate Bill 1035 (2018) amended Section 65302 of the California Government Code to require local agencies to update the climate adaptation section (safety element) of the general plan at least every eight years. This mandate would require local agencies to identify new information relating to fire hazards, climate adaptation, and resiliency measures that were not available during the last revision of the safety element (CA GOPR 2022).

Senate Bill 535: Senate Bill 535 (2012) outlines the initial funding requirements to communities that have been identified as "Disadvantaged Communities." The designation is based on pollution burden, prior designation as a disadvantaged community, and federal land status (i.e., federally recognized tribes) (California Office of Environmental Health Hazard Assessment 2023). Several communities within Solano County have been designated as "disadvantaged" by the California Environmental Protection Agency (CalEPA) (see Figure 1.6). Through their designation as a disadvantaged communities, these communities will receive priority for funding through the California Climate Investments program, including the Wildfire Prevention Grants Program, which is a part of the California Climate Investments program and is administered by CAL FIRE (State of California 2022).

Evacuation Planning Requirements: Assembly Bill 747 (2019), Assembly Bill 1409 (2020), and Senate Bill 99 (2019) were signed into law to enhance evacuation planning at the local level. Assembly Bills 747 and 1409 require local agencies to assess evacuation routes and locations under a variety of emergency scenarios, whereas Senate Bill 99 requires municipalities to identify communities with fewer than two evacuation routes. These planning mandates should be considered when assessing wildfire risk in the safety element of the general plan (CA GOPR 2022).

PRC 4290.5: Assembly Bill 2911 (2018) added Section 4290.5 to the PRC, which requires the State Board, in consultation with the State Fire Marshal and the local jurisdiction, to identify existing subdivisions with more than 30 dwelling units in the SRA or areas designated as very high FHSZs without secondary egress routes, that are at high risk for fire. Following identification of subdivisions without secondary egress routes, the State Board must provide recommendations to the local government to enhance public safety in such subdivisions. This process must begin on or before July 1, 2021, and be repeated every 5 years thereafter. If available, recommendations made by the State Board should feed directly into the community's general plan update (CA GOPR 2022).

Agricultural Pass Program: Section 2350 of California Food and Agricultural Code provides local government authorities with the ability to set up pass programs with the aim of allowing vetted agricultural operators with the necessary access to closed areas during emergency or for conducting eligible activities. The decision-making process for agriculture pass considerations will be carried out by incident commanders and law enforcement that have jurisdiction for the site. Eligible activities that prompt access to these restricted zones include livestock care and evacuation, water system management, access to agricultural properties or facilities, and the transportation of necessary equipment for reestablishing water systems (University of California, Agriculture and Natural Resources [UCANR] 2022).

PRC 4202: PRC 4202 mandates that the State Fire Marshal classify lands within the SRA into FHSZs. There are three classes of fire hazard severity ratings within FHSZs: moderate, high, and very high (CA GOPR 2022). FHSZs are used for many purposes, such as to identify areas where California's defensible space standards, WUI codes, and the State Minimum Fire Safe Regulations are mandated, as well as to

identify the level of hazard in a specified area or region. It's important to note that mitigation requirements apply to all zones within the SRA (Fire Hazard Severity Zones, CAL FIRE 2023a).

CAL FIRE 2022 Fire Hazard Severity Zones Update: In accordance with PRC 4202, CAL FIRE maintains FHSZ data for the entire state. FHSZs were originally determined and released in 2007; however, CAL FIRE recently updated these zones for the SRA in December 2022. The new FHSZs are currently in the public review process. FHSZs are defined based on vegetation, topography, and weather, and represent the probability of the area burning and potential fire behavior in the area. The new iteration of the FHSZs also accounts for land use changes, recent fire history, new wind data, and local climate data. FSHZs for the LRA are currently in development and expected for release in summer 2022 (Frequently Asked Questions About: 2022 Fire Hazard Severity Zones, CAL FIRE 2022a).

A.1.3   FEDERAL DIRECTION

In response to a landmark fire season in 2000, the National Fire Plan was established to develop a collaborative approach among various governmental agencies to actively respond to severe wildland fires and ensure sufficient firefighting capacity for the future. The National Fire Plan was followed by a report in 2001 entitled *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-year Comprehensive Strategy*, which was updated in 2002 and again in 2006 (Forests and Rangelands 2006).

In 2003, the U.S. Congress recognized widespread declining forest health by passing the HFRA, and President Bush signed the act into law (Public Law 108–148, 2003). The HFRA was revised in 2009 to address changes to funding and provide a renewed focus on wildfire mitigation (H.R. 4233 - Healthy Forest Restoration Amendments Act of 2009). The HFRA expedites the development and implementation of hazardous fuels reduction projects on federal land and emphasizes the need for federal agencies to work collaboratively with communities. A key component of the HFRA is the development of CWPPs, which facilitate the collaboration between federal agencies and communities in order to develop hazardous fuels reduction projects and place priority on treatment areas identified by communities in a CWPP.

A CWPP also allows communities to establish their own definition of the WUI, which is used to delineate priority areas for treatment. In addition, priority is placed upon municipal watersheds, critical wildlife habitat, and areas impacted by wind throw, insects, and disease. Communities with an established CWPP are given priority for funding of hazardous fuels reduction projects carried out in accordance with the HFRA.

In 2014, the final stage of the development of a national cohesive strategy for wildfire was developed: *The National Strategy: The Final Phase in the Development of the National Cohesive Wildland Fire Management Strategy* (Forests and Rangelands 2014). The national strategy takes a holistic approach to the future of wildfire management:

To safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a Nation, live with wildland fire.

A.2 PAST PLANNING EFFORTS

A.2.1 LOCAL

There are several existing documents and/or programs relating to fire management in the ounty. This plan is meant to supplement and not replace any other existing plans.

Wildfire Preparedness Guide: In 2021, Solano County updated the Wildfire Preparedness Guide (Solano County 2021). The guide serves to educate and inform Solano County residents about wildfire preparedness and prevention. The guide provides homeowners and renters with several preventive measures to mitigate wildfire risk, including implementation of defensible space, fire-resistant landscaping, and home hardening measures. The guide also contains information about the county's emergency notification system, Alert Solano (Solano County 2021).

Solano County General Plan: In 2008, Solano County updated its general plan in accordance with the California State mandate. The purpose of the plan is to guide development, land use, and conservation in the county while incorporating the values of the community to maintain desired use and services (Solano County 2008). The plan is broken down into several chapters, with each covering key aspects of community wellbeing and growth, including agriculture, resources, public health and safety, economic development, transportation, public facilities, housing, and parks and recreation (Solano County 2008). The public health and safety chapter contains a section on fire safety. This includes information on wildfire planning, such as vulnerable areas and resources, fire-safe building and defensible space methods and policies, and recommendations for reducing vulnerability and increasing response capacity (Solano County 2008).

Solano County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP): In 2022, Solano County updated its hazard mitigation plan. The purpose of the MJHMP is to identify potential hazards and mitigation strategies in the county. This plan is intended to guide decision-makers on the best approaches for protecting life and property, and to aid in prioritizing projects and resource allocations. The stated goals of the MJHMP are to significantly reduce risk of injury and loss of life during disaster events; minimize damage to critical infrastructure and property and minimize interruption of essential services and activities; protect the environment; and promote community resilience through integration of hazard mitigation with public policy and standard business practices (Multi-Jurisdictional Hazard Mitigation Plan, Solano OES 2022). The prioritized hazards in the county are wildfire, flood, earthquake, drought, slope failure, extreme weather, and climate change (Multi-Jurisdictional Hazard Mitigation Plan, Solano OES 2022). The MJHMP includes a risk assessment section that profiles potential hazards and vulnerability of geographic locations, populations, and infrastructure. This is followed by recommended mitigation approaches and a capacity assessment to identify needs for addressing expected hazards. The MJHMP identifies the foothills and mountainous areas in the northwestern portion of the county and the grasslands present throughout as high risk for wildfire (Multi-Jurisdictional Hazard Mitigation Plan, Solano OES 2022). A few specific wildfire-related mitigation actions identified in the MJHMP are outlined below.

- Conduct annual defensible space inspection program in the unincorporated county and enforce code violations.

- Maintain and improve, where needed, wildfire emergency access.

- Develop a CWPP for neighborhoods and communities with particularly high threats; support ongoing community efforts to do the same.

- Establish a county chipper program.

- Develop spatial data for wildfire emergencies.

Solano County Multi-Jurisdictional Hazard Mitigation Plan City Annexes: To allow for tailored recommendations on a jurisdictional level and continued access to FEMA assistance programs, the Solano County MJHMP noted above contains annexes for all cities in Solano County (Multi-Jurisdictional Hazard Mitigation Plan Annexes, Solano OES 2022). Specific wildfire-related mitigation actions identified in the MJHMP for each city are outlined below.

City of Benicia:

- The Defensible Space Program with Site Specific Assessment was adopted by the City Council in January 2023 and is active.

- Conduct Public Education Campaign to increase awareness of threats of wildfire due to recreational use.

- Implement recommendations from City's 2021–2022 Defensible Space Program & Site-specific Assessment Project.

- Develop a WUI ordinance.

City of Fairfield:

- Develop a CWPP that identifies and prioritizes areas for hazard fuel reduction treatments and recommend the types of methods of treatments.

- Develop a wildfire education program in collaboration with local fire entities to conduct a public outreach and education campaign to encourage homeowners to mitigate their properties and vegetation accumulation around their homes.

City of Rio Vista:

- Conduct public education campaign to increase awareness of threats of wildfire due to recreational use.

City of Suisun City

- Develop a wildfire mitigation plan to identify specific projects the City may wish to undertake related to wildfire.

City of Vacaville:

- Increase fuel management and fuel reduction in open space, creeks, around critical facilities, and WUI areas. Continue cow grazing and pursue goat grazing as effective fuel management techniques.

- Maintain and improve access to fire prone areas.

- Evaluate and modify as needed weed abatement policies and enforcement throughout the city.

- Develop public education for wildfire risks and mitigation in areas of extreme fire danger.

- Repair burned sloped; landslides/mudslides/slope stabilization after a fire.

Sonoma-Lake-Napa Unit Strategic Fire Plan: The collaboratively developed Sonoma-Lake-Napa Unit Strategic Fire plan was updated in 2021 to include new goals, updated communities and policies, and new project objectives. The goal of the plan is to work with communities to evaluate fire exposure and prevention; gather fire event data to extrapolate trends related to weather, fuels, and project needs; monitor project effectiveness and initial attack success; and prepare the WUI (CAL FIRE LNU 2021).

The plan includes an overview of the CAL FIRE response capacity and resources within the unit, as well as community resources and Fire Safe Councils. A discussion of valued natural and human-made resources at risk is followed by prevention methods with guiding codes and regulations. This plan lays out priority projects to reduce unit vulnerability; these include recommendations for strategic fuel breaks, home hardening, and planning and response projects (CAL FIRE LNU 2021). A section is included that examines the effectiveness of several ongoing methods to bolster unit resilience through community engagement and notifications, fuel reduction, and cooperative management. A list of past fires and ignition sources in the unit rounds out the plan and identifies equipment use and power lines as main ignition sources (CAL FIRE LNU 2021).

Climate Action Plan: In June 2011, Solano County and AECOM completed the County's Climate Action Plan to provide leadership and guidance on reducing contributions to greenhouse gas (GHG) emissions, which are the primary driver of climate change. The plan is focused on GHG emissions inventory and reduction methods and was guided by state policies and plans that require the reduction of GHG emissions, such as Executive Order S-3-05, Assembly Bill 32, and the Climate Change Scoping Plan (Solano County 2011). The plan begins by discussing the potential impacts of climate change to the county and identifies local and state agencies addressing these impacts. Following an inventory of current emissions and scenario modeling, the plan highlights actionable measures for industries and citizens to reduce GHG emissions. The final chapter describes the Solano County's approach and methodology for achieving these goals, including funding options. Wildfire concerns are not directly addressed in this plan; however, the plan recognizes the increased risk of wildfire due to a changing climate (Solano County 2011).

City of Benicia Open Space Vegetative Fuels Management Plan 2023:

In 2022, the City of Benicia Fire Department drafted its first Vegetative Fuels Management Plan with the intention of developing adaptive management for the city's open spaces and WUI (City of Benicia 2022). The development of the plan was motivated by the high intermix of residential and mixed vegetation open space in the city, which created a need to identify cost-effective landscape management that accounts for diverse vegetation. The management plan has the following objectives (City of Benicia 2022):

- To maintain original integrity and purpose of open space as a socioenvironmental resource

- To quantify the degree to which structures and parcels are exposed to wildfire hazards originating in open space areas and lots

- To evaluate the efficacy of "business-as-usual" vegetation management strategy in terms of both reduction of wildfire risk and cost

- To enable the City of Benicia Fire Department vegetation management program to provide long-range planning and decision-making tools to allocate financial and administrative resources efficiently across a range of vegetation treatment options

The plan begins with an analysis of current environmental conditions, ownership information, fire history, and relevant planning and fuel reduction projects. This is followed by a risk assessment that examines wildland fuels, topography, and parcel-level exposure. A community engagement section includes resources for public education such as risk maps, outreach opportunities, and results from a community survey. The final management section defines fuels treatment techniques that the city will use such as prescribed burning and herbivory and provides final recommendations for improved management and priority target areas (City of Benicia 2022). Additionally, the Defensible Space Program was adopted by the City Council in January 2023.

City of Benicia Vegetation Management: The City of Benicia has been conducting vegetation management since the 1980s, when the City exclusively used herbicides to reduce fuel loads in open space areas. Herbicidal application was discontinued due to public concerns over its environmental impacts and was later replaced with annual discing contracts arranged by the City of Benicia in the late 2000s to early 2010s. Today, Benicia uses both discing and goat grazing, often employing discing to make up for the limitations of goat grazing under certain fuel types and conditions and herd staffing shortages. Planned projects follow this same combination of strategies (City of Benicia 2022).

Specific planned or ongoing efforts by the City of Benicia include:

- Annual goat grazing around 43 residential open spaces within Benicia to create 50-foot vegetation breaks around the perimeter of each open space.

- Annual goat grazing around three public works open spaces within Benicia to create 50-foot vegetation breaks around the perimeter of each open space.

- Annual vegetation maintenance (primarily grazing with some discing) within 14 City of Benicia–owned lots and along the city perimeter.

Solano Resource Conservation District: The Solano RCD is a non-regulatory special district working in coordination with the Natural Resources Conservation Service (NRCS) with the goal of providing the county with ecological benefits through restoration, protection, education, and enhancements. These acts of stewardship are carried out strategically with a wide array of willing stakeholders and are achieved utilizing a scientific approach. Among these stakeholders are private citizens, research institutions, private organizations, and all levels of government agencies. Led by the Board of Directors that have been appointed by the County Board of Supervisors, the RCD staff play an instrumental role in program implementation by providing the necessary specialized expertise, education, and experience. Through acquired grant funding, the RCD will be conducting habitat impact surveys in areas impacted by the LNU Lightning Complex and Quail Fires of 2020, implementing vegetation management and restoration to address the detected impacts. Solano RCD is a local agency listed as a "fire risk reduction community" by CAL FIRE. This designation requires CAL FIRE to prioritize Solano RCD for Fire Prevention Grants (Fire Risk Reduction Community List, CAL FIRE 2023b).

For more information visit https://www.solanorcd.org/projects-and-programs/wildfire/wildfire-resources.html.

Pacific Gas and Electric Company (PG&E) 2023 Wildfire Mitigation Plan: In alignment with California SB 901, Assembly Bill 1054 and guidelines from the Office of Energy Infrastructure Safety, PG&E has developed a 2023–2025 wildfire mitigation plan. The wildfire mitigation plan highlights the mitigative actions that PG&E has taken to reduce the potential for ignitions and wildfire spread in relation to their equipment and land usage. This includes wildfire safety programs, maintenance plans, vegetation management, and other activities that work to mitigate wildfire risk and prevent hazardous ignition. Additionally, PG&E conducted public outreach and collaborated with local wildfire mitigation planners to ensure effective management of a local scale (PG&E 2023)

A.2.2   ADJACENT COUNTIES

Whenever possible, CWPPs and project recommendations should be designed to align with adjacent projects across county and jurisdictional boundaries.

Napa County Community Wildfire Protection Plan: The Napa County CWPP was developed in 2021 to provide residents and Napa County authorities with an analysis of the wildfire risk throughout Napa

County lands and extend recommendations of mitigation actions to reduce the threat of wildfire to community values. The plan aims to educate stakeholders about the potential severity of wildfire hazards within the county and encourage them to participate in activities that will contribute to minimizing the threat of wildfire for the community. Similar to the Solano County Plan, the Napa County CWPP places emphasis on addressing priority fuel reductions and methods for minimizing structural ignitability.
In addition to capturing community-level goals, the CWPP is guided by the standards set forth in by CAL FIRE and other federal pre-fire planning strategies (Napa County 2021). Moreover, Napa and Solano Counties share many of the same high wildfire threat areas, and many priority fuels reduction projects identified in the Napa County CWPP are adjacent to Solano County. Therefore, this Plan identifies collaboration with Napa County as a high-priority objective.

Yolo County Community Wildfire Protection Plan: The Yolo County CWPP is currently being developed to address wildfire risks throughout Yolo County and formulates an array of wildfire mitigation practices and response protocols to be adopted by Yolo County authorities. Recognizing fire as a core ecological function of California and Yolo County's natural history, the plan outlines fire preparedness and collaborative efforts to reduce ignition potential across structures. The plan also serves as an educational tool for the public by outlining the level of wildfire risk throughout the county and offering guidelines that individuals can follow to take part in increasing community wildfire resilience with practices (e.g., creating defensible space on private property). This plan was drafted to reflect local fire management objectives while incorporating the standards set forth by the HFRA and recognizes Solano County as a key collaborative partner for the wildfire planning process (Yolo County 2023)

A.2.3   STATE

Strategic Fire Plan for California: In 2018, CAL FIRE, along with the State Board of Forestry and Fire Protection, developed the Strategic Fire Plan for California (Strategic Fire Plan for California, CAL FIRE 2018b). The plan was developed to create a more wildfire-resistant environment and community, increase the understanding of wildfires, and increase cooperation amongst local, state, federal, tribal, and private partnerships. Goals outlined within the plan include identifying natural resources at risk, integrating fire and fuels management tactics with landowners, and implementing post-fire assessments and programs (Strategic Fire Plan for California, CAL FIRE 2018b).

California State Hazard Mitigation Plan: In 2018, the California Governor's Office of Emergency Services (Cal OES) released the latest California State Hazard Mitigation Plan. The intention of the plan was to provide a current update of all past and potential hazards and disasters within California and outline mitigation strategies, risk reduction methods, goals, objectives, strategies, and priorities (Cal OES 2018). Mitigation strategies recommended include strengthening interagency coordination, incorporating climate change into future planning efforts, and establishing a mitigation registry (Cal OES 2018).

Fire Hazard Planning Technical Advisory: In 2022, the CA GOPR updated the Fire Hazard Planning Technical Advisory. The goal of the guide is to provide a framework for planners and decision-makers in addressing hazards, increasing resilience, and reducing risks associated with fire. This guide provides a brief history of fire in the state, impacts to communities, and implications of climate change; it also describes several local, state, and federal wildfire policies and regulations to inform required planning elements and available resources. This regulatory overview sets the stage for the fire hazard planning guidance chapter, which has recommendations regarding the integration of fire hazard specific elements into general plans. This guide also provides guidance to align hazard plans with broader plans and connect fire hazard planning to relevant matters such as climate adaptation (CA GOPR 2022).

Wildland Urban Interface Planning Guide: In 2022, in accordance with the requirements of Assembly Bill 75, the CA GOPR, with the Community Wildfire Planning Center and CAL FIRE, created the WUI planning guide to provide recommendations and examples to aid communities in planning for living in the WUI (CA GOPR et al. 2022). The guide serves as a supplement to the Fire Hazard Planning Technical Advisory and discusses several plan categories, detailing their respective purpose and how they relate to WUI planning. Some plan types referenced include general, hazard, climate, and wildfire plans. The regulation section of the guide provides required and recommended codes for resilient WUI planning and rationale for how these measures promote a fire safe community. Additional tools and programs that enhance community resilience are detailed in the plan (CA GOPR et al. 2022).

California Cooperative Forest Management Plan: In 2020, the California Cooperative Forest Management Plan was developed for use by CAL FIRE, U.S. Forest Service (USFS), and NRCS. This plan functions as a template for fire management plans and outlines topics that should be discussed while planning for fires, such as road systems, property history and conditions, wildlife, water resources, and others (California Cooperative Forest Management Plan, CAL FIRE 2020a).

California's Forests and Rangelands 2017 Assessment: In 2017, CAL FIRE published California's Forests and Rangelands 2017 Assessment. CAL FIRE's Fire and Resource Assessment Program evaluates the amount and size of California's forests and rangelands and analyzes their conditions to establish management and regulatory guidelines. The assessment is used to delineate priority landscapes that aid in focusing investments and other programs to ameliorate issues. The goal of the assessment is to meet both state and federal mandates for natural resource inventories and planning (California's Forest and Rangelands 2017 Assessment, CAL FIRE 2018a).

Community Wildfire Prevention and Mitigation Report: In 2019, CAL FIRE published the Community Wildfire Prevention and Mitigation Report in response to Executive Order N-05-19, which directs CAL FIRE and other state agencies to recommend administrative, regulatory, and policy changes to prevent and mitigate wildfires. The order stresses taking necessary actions to protect vulnerable populations and to identify backlogs in fuels treatments projects. CAL FIRE identified 35 priority projects that could be immediately implemented to reduce public safety risk for over 200 communities. Potential projects included removal of dead trees, vegetation clearing, creation of ingress and egress paths, and creation of fuel breaks and community defensible spaces (Community Wildfire Prevention & Mitigation Report, CAL FIRE 2019a).

California's Wildfire and Forest Resilience Action Plan: In 2021 the California Forest Management Task Force developed California's Wildfire and Forest Resilience Action Plan (California Forest Management Task Force 2021). The purpose of the plan was to sustain economic strength of the forests, improve forest health and resilience, and increase the level of fire safety within communities. The plan is broken up into four major goals (California Forest Management Task Force 2021): increasing the pace and scale of forest health projects, strengthening the protection of communities, managing the forest to achieve the state's economic and environmental goals, and driving innovation while measuring progress. Strategies for increasing community fire safety include increasing fuel breaks, creating fire-safe roadways, and supporting community risk reduction (California Forest Management Task Force 2021).

Vegetation Management Program: In addition to the Strategic Fire Plan, CAL FIRE operates a vegetation management program that focuses on addressing resource management and wildfire fuel hazards within SRA lands (CAL FIRE Vegetation Management Program, CAL FIRE 2021). The program has three management objectives with various sub-goals. The management objectives are the reduction of conflagration of fires, optimization of soil and water productivity, and the protection and improvement of intrinsic floral and faunal species (CAL FIRE Vegetation Management Program, CAL FIRE 2021).

California Vegetation Treatment Program: In addition to planning documents, the State of California operates the California Vegetation Treatment Program (CalVTP). This program was developed by the Board of Forestry and Fire Protection to create healthy fire regimes, reduce hazardous vegetation that increases wildfire risk, and reduce risk within communities. Prescribed burning, prescribed herbivory, herbicides, mechanical treatments, and manual treatments are used for vegetation management. In addition, the CalVTP Implementation Database provides information regarding current and approved projects. To learn more about this program, visit the following URL: https://bof.fire.ca.gov/projects-and-programs/Calvtp

Safer from Wildfires Initiative: This partnership program was established to increase home hardening and defensible space efforts on homes that were not built to current CAL FIRE standards. The program was developed in partnership with the Cal OES, Planning and Research, California Department of Insurance (CDI), Public Utilities Commission, and CAL FIRE to create pathways for more accessible home insurance by requiring insurers to reward safety and mitigation actions (Safer from Wildfires, CDI 2022a). The program works within the three mitigation topics of protecting the structure, protecting the surroundings, and working as a community to identify actionable steps to improving community resilience in a cost-effective way. Each topic has specific measures, such as upgrading to ember resistant vents, clearing under deck vegetation, or working as a community to achieve a Firewise rating (Safer from Wildfires, CDI 2022a). The list of actions creates consistency in home hardening. This program has been used to negotiate insurance discounts for individuals and communities based on mitigation achievements at each level. For example, State Farm offers a discount to communities that achieve a Firewise Community rating (Insurers Currently Offering Discounts, CDI 2022b). More information about the Safer from Wildfires initiative and currently available insurance discounts are available at the following URL: https://www.insurance.ca.gov/01-consumers/200-wrr/saferfromwildfires.cfm

California's Strategic Plan for Expanding the Use of Beneficial Fire: In 2022 the Governor's Wildfire and Forest Resilience Task Force developed California's Strategic Plan for Expanding the Use of Beneficial Fire (California Office of Governor 2022). The purpose of the plan was to broaden use of prescribed fire and cultural burning throughout California's forests and WUIs with the aim of improving forest health and minimizing the likelihood of high-severity fire occurrences. The plan included a collection of key elements that build the capacity for residents, land managers to reduce the wildfire risk for California communities. Among these strategies was launching an online prescribed fire permitting system, establishing reducing liability for private burners, revitalizing cultural burning practices for tribal communities, creating a prescribed fire training center, undertaking large-scale pilot landscape burn projects, and reviewing the state's smoke management programs to improve public health (California Office of Governor 2022). In accordance with the plan, this Solano County Plan recommends the use of cultural burning as a means to enhance and maintain landscape resiliency.

A.2.4   FEDERAL

Bureau of Land Management

The Bureau of Land Management (BLM) has a fire management program in California and is a member of the California Forest Management Task Force (BLM 2022a). The BLM also collaborates with several federal, state, and local organizations to develop and implement wildland fire programs. For instance, the BLM's fuels management program directs a wide range of active management vegetation treatments using mechanical, biological, and chemical tools and prescribed fire. The program consists of creating fuel breaks, reducing fuel loads, reducing fire risk near communities, targeted grazing, and herbicide to

break fire-grass cycles. Fuels treatments are planned and implemented jointly with other BLM programs, and with federal, state, local, and non-governmental collaborators (Fuels Management, BLM 2022b).

The only BLM-managed land in Solano County is the southern terminus of the Berryessa Snow Mountain National Monument. The monument sits on the Vaca Mountains in northwestern Solano County, in areas that have been designated as very high FHSZs by CAL FIRE (Fire Hazard Severity Zones, CAL FIRE 2023a).

U.S. Air Force

Travis Air Force Base, which is adjacent to the City of Fairfield, is the busiest (in terms of cargo and passenger traffic) military air terminal in the United States. The base also has a major impact to the economy and community as many military families, employees, and retirees permanently reside in Fairfield (Travis Air Force Base 2019). Wildland fire management in and around the base is guided by the Wildland Fire Management Plan. The purpose of the plan is to "*reduce total costs and losses from wildfire by protecting assets at risk through focused pre-fire management and increasing initial attack success*" (Travis Air Force Base 2021). Strategies to reduce fire risk around the base include the use of prescribed fire and the installation of firebreaks.

A.3 PUBLIC LAND MANAGEMENT

A.3.1 LAND MANAGEMENT STRATEGIES

In 2020, the State of California and the federal government signed an agreement of the shared stewardship for California forests and rangelands. The agreement sets many goals for the State of California and the federal government to accomplish together (California Office of Governor 2020). These goals include treating at least 1 million acres of California land per year to reduce the risk of wildfires, developing a 20-year cooperative forest management plan that will outline projects and priorities, encouraging and increasing the use of sustainable land management practices such as prescribed fire, increasing the forest management workforce and, in turn, increasing the pace and scale of forest management, and prioritizing forest health benefits such as carbon sequestration and healthy watersheds. Funding for this agreement will be provided from the Great American Outdoors Act (California Office of Governor 2020).

Forest managers in the region are addressing land management objectives by using prescribed fire, mechanical, and manual treatments to promote more resilient forest lands. Private, state, and federal lands are interspersed, creating a matrix of land ownership, which is often a hurdle to implementation of landscape-level treatments. By working with private landowners, forest managers are enhancing landscape-scale efforts to create more resilient forest communities.

State Land

State Responsibility Area (SRA) is a legal term defining the area where the State has financial responsibility for the prevention and suppression of wildfire. The majority of Solano County is within Local Responsibility Areas (LRAs); however, SRA lands occur in the western portion of the county. Federal Responsibility Areas (FRAs) are also present in the county, e.g., Berryessa Snow Mountain National Monument (BLM) and Travis Air Force Base (U.S. Air Force).

In California, CAL FIRE maintains FHSZ data for the entire state. There are three classes of fire hazard severity ratings within FHSZs: moderate, high, and very high (CA GOPR 2022). FHSZs are defined based on vegetation, topography, and weather, and represent the probability of the area burning and potential fire behavior in the area. In Solano County, the mountain and foothill communities of the Vaca Mountains are designated as very high FHSZs (Fire Hazard Severity Zones, CAL FIRE 2023a).

California Department of Fish and Wildlife–Managed Land

The CDFW manages well over 1 million acres of fish and wildlife habitat across 749 properties throughout California. These properties serve as habitat for a great diversity of fish, wildlife, and plant species and include varied habitats from major ecosystems in the state. Furthermore, various private land conservation programs assist landowners with the management of riparian environments, native grasslands, wetlands, and wildlife-friendly farmlands (CDFW 2022).

The CDFW offers consultations to landowners for implementing effective fuel reduction and vegetation management near waterways. Best management practices (BMPs) are provided to minimize impacts to the bed, bank, and channel of a water resource and an evaluation is given as to whether the project will necessitate a 1600 Notification due to significant impacts. The CDFW strongly encourages landowners and project proponents to pre-consult with CDFW early in the process to ensure any impacts to special-status animals and plants are resolved and that any required permits are obtained.

In 2021, the CDFW initiated the largest wildfire protection and resiliency endeavor in its history, with a focus to improve wildfire protection and resiliency in most of its ecological reserves, wildlife areas, and surrounding communities. Methods employed by the CDFW to accomplish its wildfire resiliency goals include the installation of fire breaks, brush removal, vegetation thinning, livestock grazing, and controlled burns (CDFW Initiates Massive Wildfire Protection Effort at Wildlife Areas, Ecological Reserves Statewide, CDFW 2021a).

Solano County is home to several CDFW wildlife areas and ecological reserves, which are listed below.

- Putah Creek Wildlife Area (https://wildlife.ca.gov/Lands/Places-to-Visit/Putah-Creek-WA)

- Grizzly Island Wildlife Area (https://wildlife.ca.gov/Lands/Places-to-Visit/Grizzly-Island-WA#45872431-history)

- Miner Sough Wildlife Area (https://wildlife.ca.gov/Lands/Places-to-Visit/Miner-Slough-WA)

- Hill Slough Wildlife Area (https://wildlife.ca.gov/Lands/Places-to-Visit/Hill-Slough-WA)

- Peytonia Slough Ecological Reserve (https://wildlife.ca.gov/Lands/Places-to-Visit/Peytonia-Slough-ER)

- Liberty Island Ecological Reserve (https://wildlife.ca.gov/Lands/Places-to-Visit/Liberty-Island-ER)

- Calhoun Cut Ecological Reserve (https://wildlife.ca.gov/Lands/Places-to-Visit/Calhoun-Cut-ER)

- Suisun Marsh (https://wildlife.ca.gov/Regions/3/Suisun-Marsh)

University of California Davis Natural Reserve System

The University of California (UC) Davis Natural Reserve System is part of the larger UC Natural Reserve System in California. The Davis Natural Reserve System manages six of 41 sites in the UC Natural Reserve System in California. Solano County is home to two reserves, the Jepson Prairie and the

Stebbins Cold Canyon. Both preserves protect valued ecosystems and species and also provide educational opportunities for students and recreational opportunities for visitors.

Stebbins Cold Canyon Reserve encompasses 638 acres and is located at the northern border of Solano County, east of Lake Berryessa. The topography is mostly steep canyons and contains inner and outer coastal range habitats, including various grasslands, blue oak woodlands, chaparral, and riparian woodlands along its intermittent streams (University of California Natural Reserve System 2022). Wildfires swept through the reserve in both 2015 (Wragg Fire) and 2022 (Quail Fire) (University of California Davis 2016). Although these fires caused lengthy closures, they have provided researchers with the opportunity to study species and ecosystems post wildfire recovery.

The Blue Ridge Trail Loop, situated at the northern periphery of Solano County, forms an integral part of the UC Davis Natural Reserve System. Renowned for its popularity, the trail attracts frequent visits from both local residents and tourists, making it a notable candidate for potential human-caused ignitions.

Jepson Prairie Reserve is a 1,566-acre prairie-wetland that is located in central Solano County. The reserve is situated among a heavily agricultural landscape, protecting remnant species such as native forbs and grass, and wetland birds, amphibian, and invertebrate species. The reserve contains rare vernal pools and playa lakes that exist for a short period following the rainy winter months (Solano Land Trust 2022). These ephemeral waterways are home to many rare and endangered species like the California tiger salamander, Solano grass, and the delta green ground beetle. Fire does not have a major role in the reserve, and little to no fire activity has occurred on the landscape (Solano Land Trust 2022). Solano Land Trust is the primary management agency for the reserve.

Federal Land

Travis Air Force Base

The Travis Air Force Base, which is located east of Fairfield, is owned and managed by the U.S. Air Force. The base comprises over 6,000 acres and engages in cargo and passenger operations, humanitarian airlift operations, and medical training. The base is a significant contributor to the local economy, contributing $2.1 billion in 2019 to Solano County (Travis Air Force Base 2019). The base houses its own fire department and has a wildland fire management plan, which includes goals such as reducing fire risk around the base and protecting and enhancing valuable natural resources (Travis Air Force Base 2021).

Berryessa Snow Mountain National Monument

Berryessa Snow Mountain is a 330,780-acre national monument designated in 2015. The monument contains diverse topography with mountains reaching 7,000 feet above mean sea level. This creates flourishing habitats with chaparral and oak woodland at low elevation; fir, pine, and cedar dominating the rocky mountain areas; and old-growth swaths accompanying the waterways of the monument (Berryessa Snow Mountain National Monument, USFS 2022a). Cache Creek runs through the preserve, providing additional recreational opportunity on top of the hiking, camping, hunting, and fishing allowed in the preserve.

Prior to its designation in 2015, Berryessa Snow Mountain National Monument consisted of Mendocino National Forest and BLM-administered land. Fifteen of the USFS's 43 national forest management areas fall within the national monument boundaries (USFS 2019). The USFS evaluated and altered its land and resource management plan to ensure resources identified in the proclamation are managed as intended.

The management baseline identifies USFS-national monument land overlap areas, resources of concern, and policies and practices in place that protect said resources. Wildfire has been identified as a vulnerability for cultural resources, surface water and groundwater, and vegetation and soil health (USFS 2019).

San Pablo Bay National Wildlife Refuge

The U.S. Fish and Wildlife Service (USFWS) manages all 19,000 acres of the refuge as part of the San Francisco Bay National Wildlife Refuge complex. The refuge is made up of mud flats, salt marshes, open bay, and wetland habitats that provide wintering and migratory habitat for waterfowl and shorebirds (San Pablo Bay National Wildlife Refuge, USFWS 2022a). The wetlands and estuary are home to endangered and threatened birds and mammals like the California clapper rail and Suisun shrew. Additionally, 11 endangered fish species rely on the bay and marsh as they migrate upstream to spawn. The refuge is managed with the objective of preserving a piece of disappearing tidal marshes to benefit fish and wildlife while providing recreational opportunities for citizens (San Pablo Bay National Wildlife Refuge, USFWS 2022a).

The USFWS established a fire management program to manage fuels and wildfire to foster healthy fuel loads and fire regimes on USFWS lands. The USFWS recognizes the natural role fire plays in the health of wildlands and adopts the use of prescribed burns as an effective conservation tool (Fire Management, USFWS 2022b). USFWS manages wildfire risk by thinning vegetation mechanically or through prescribed burns, cooperatively fighting fires when they do happen, and rehabilitating and restoring burned areas.

A.3.2 STEWARDSHIP AGREEMENTS

In 2020, the State of California and USFS signed a shared stewardship agreement to commit to collaborative forest management and set landscape-scale priorities. The shared stewardship agreement includes a commitment to coordinate and share tools, processes, and innovative approaches with respect to fire management. The stewardship agreement is provided here: https://www.gov.ca.gov/wp-content/uploads/2020/08/8.12.20-CA-Shared-Stewardship-MOU.pdf

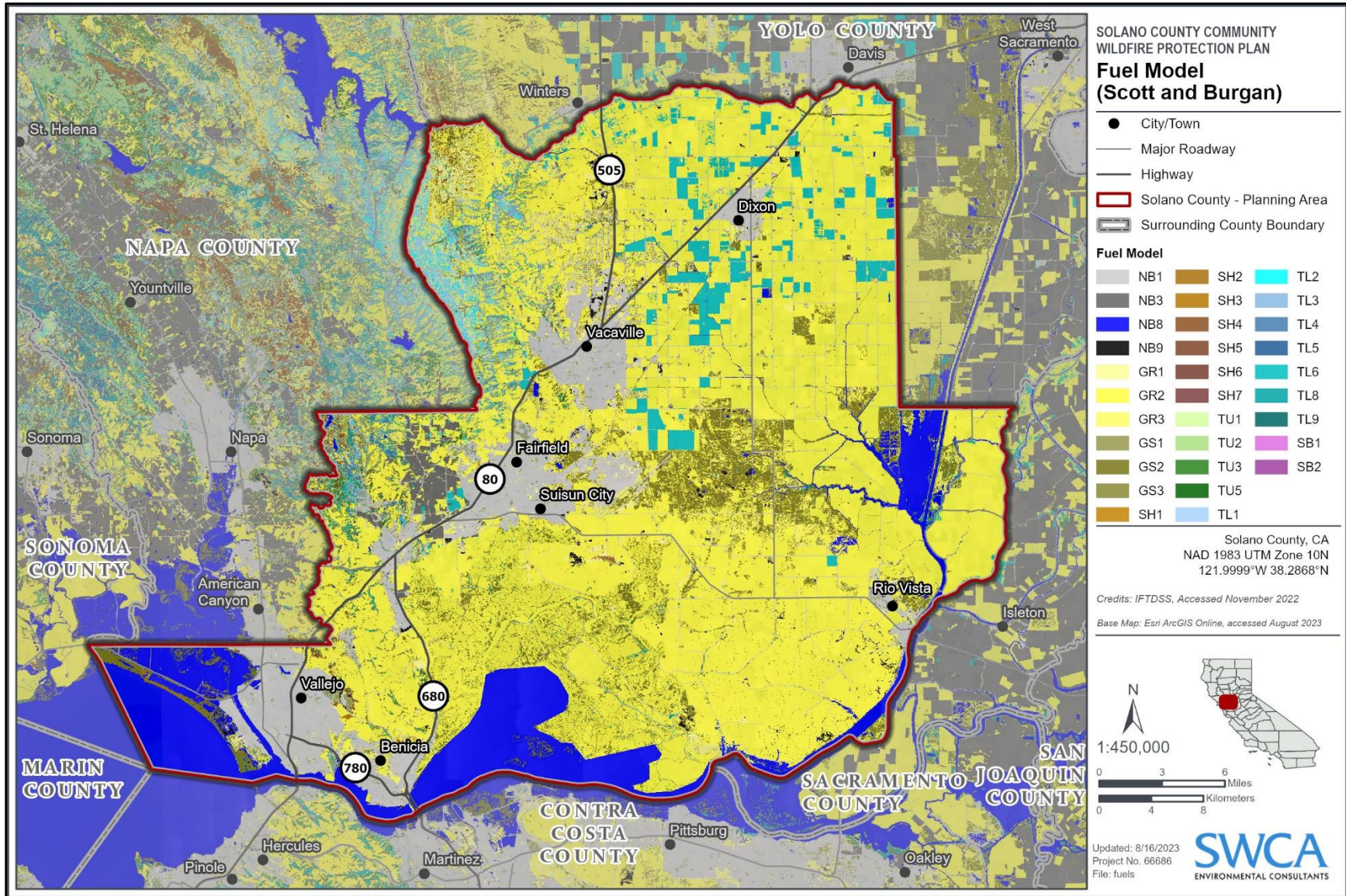*This page intentionally left blank.*
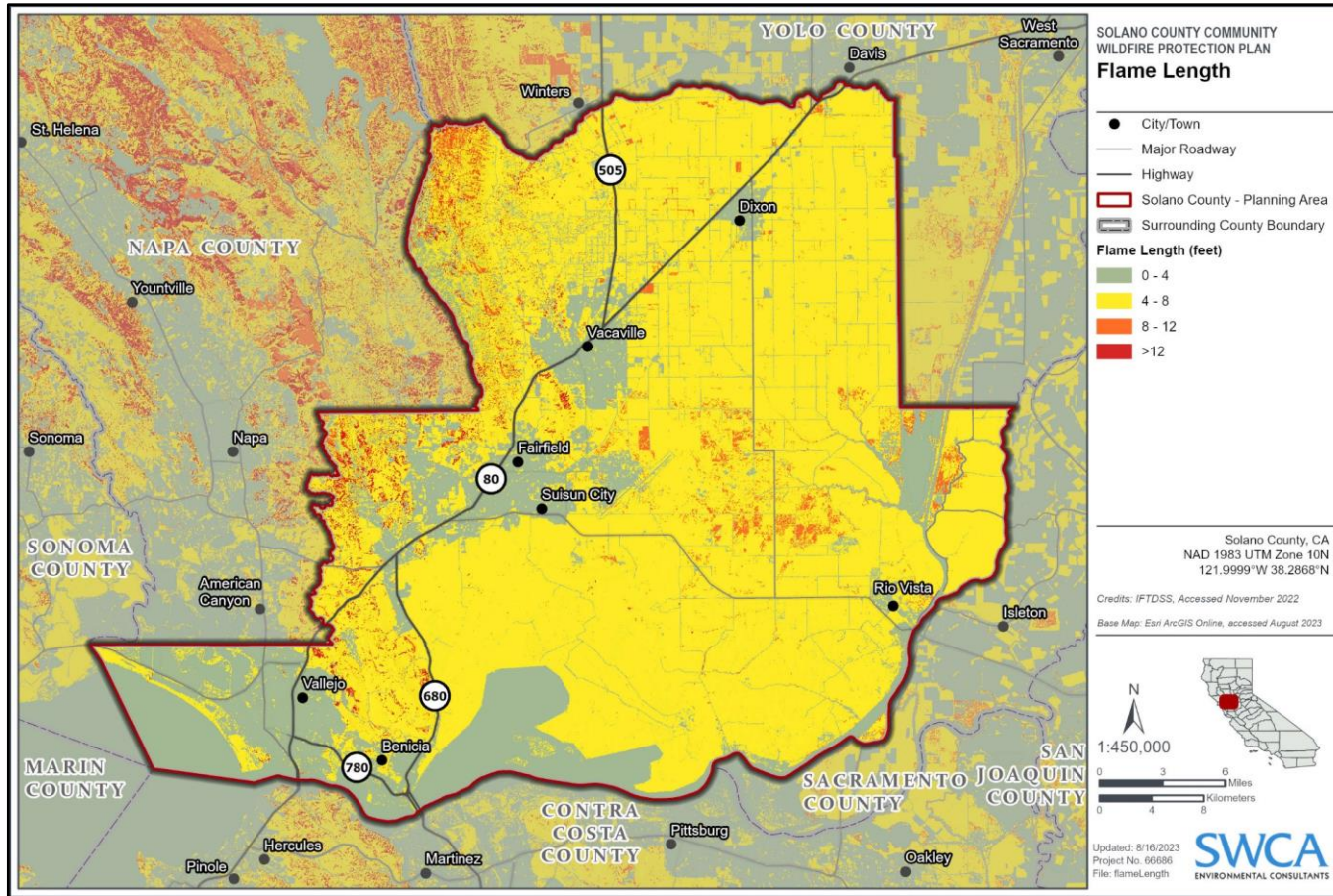
APPENDIX B :

Mapbook Supporting Maps

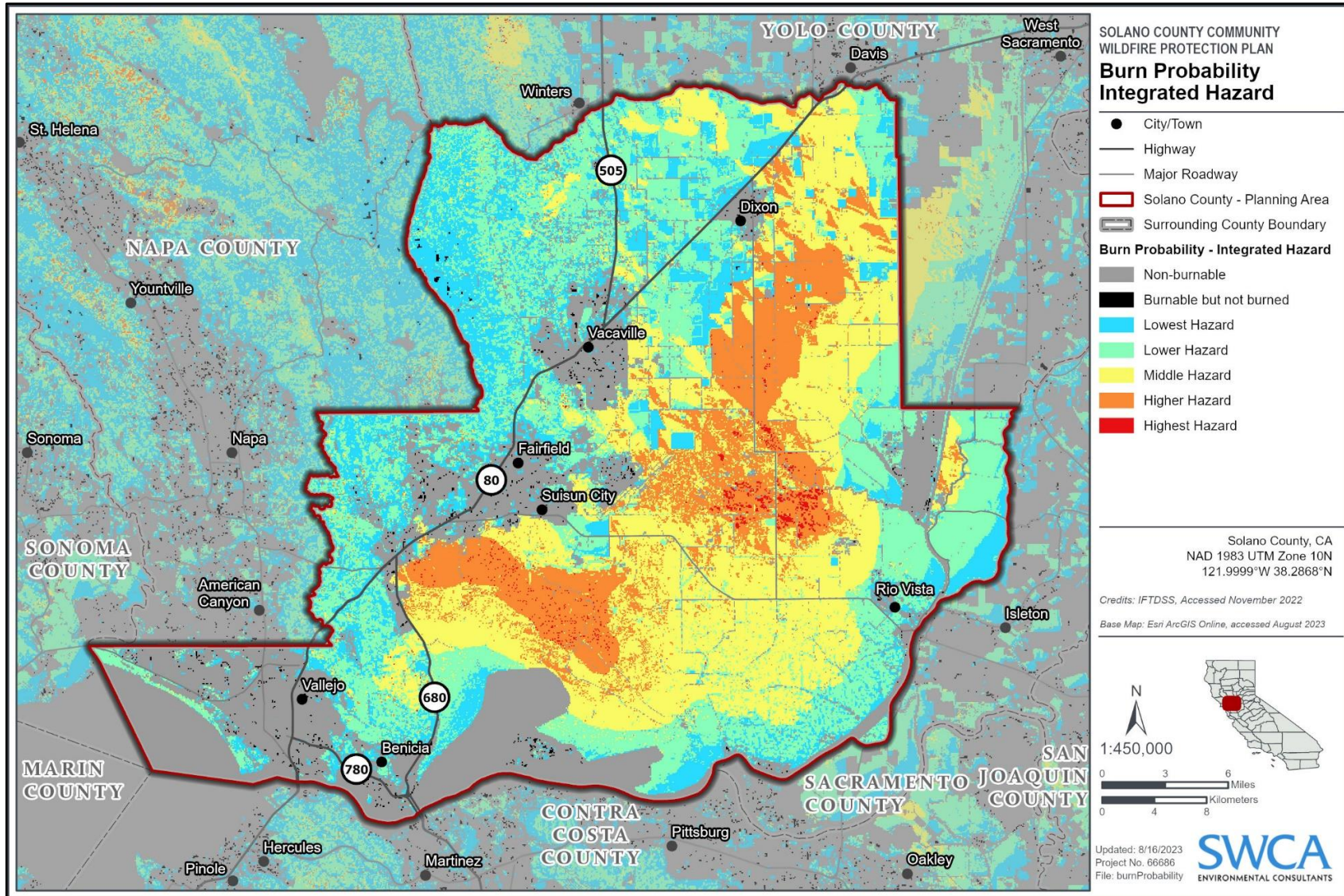*This page intentionally left blank.*

Map B.1. Fire behavior model based on Scott and Burgan 40 Fire Behavior Fuel Models. See Chapter 3 for fuel model breakdown.
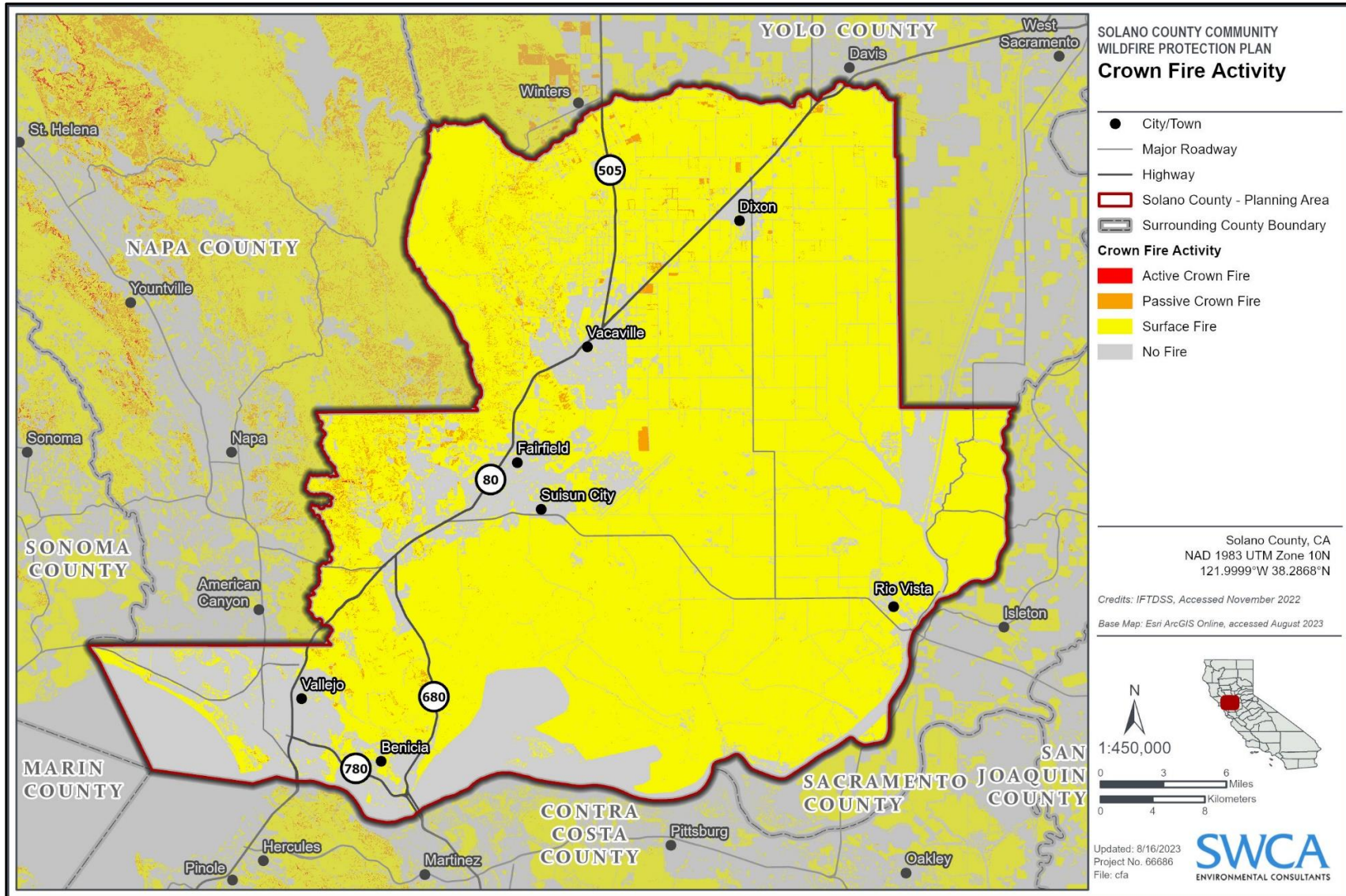
Map B.2. Risk-Hazard Assessment inputs: flame length, generated using the Interagency Fuel Treatment Decision Support System

Map B.3. Risk-Hazard Assessment inputs: burn probability, generated using the Interagency Fuel Treatment Decision Support System
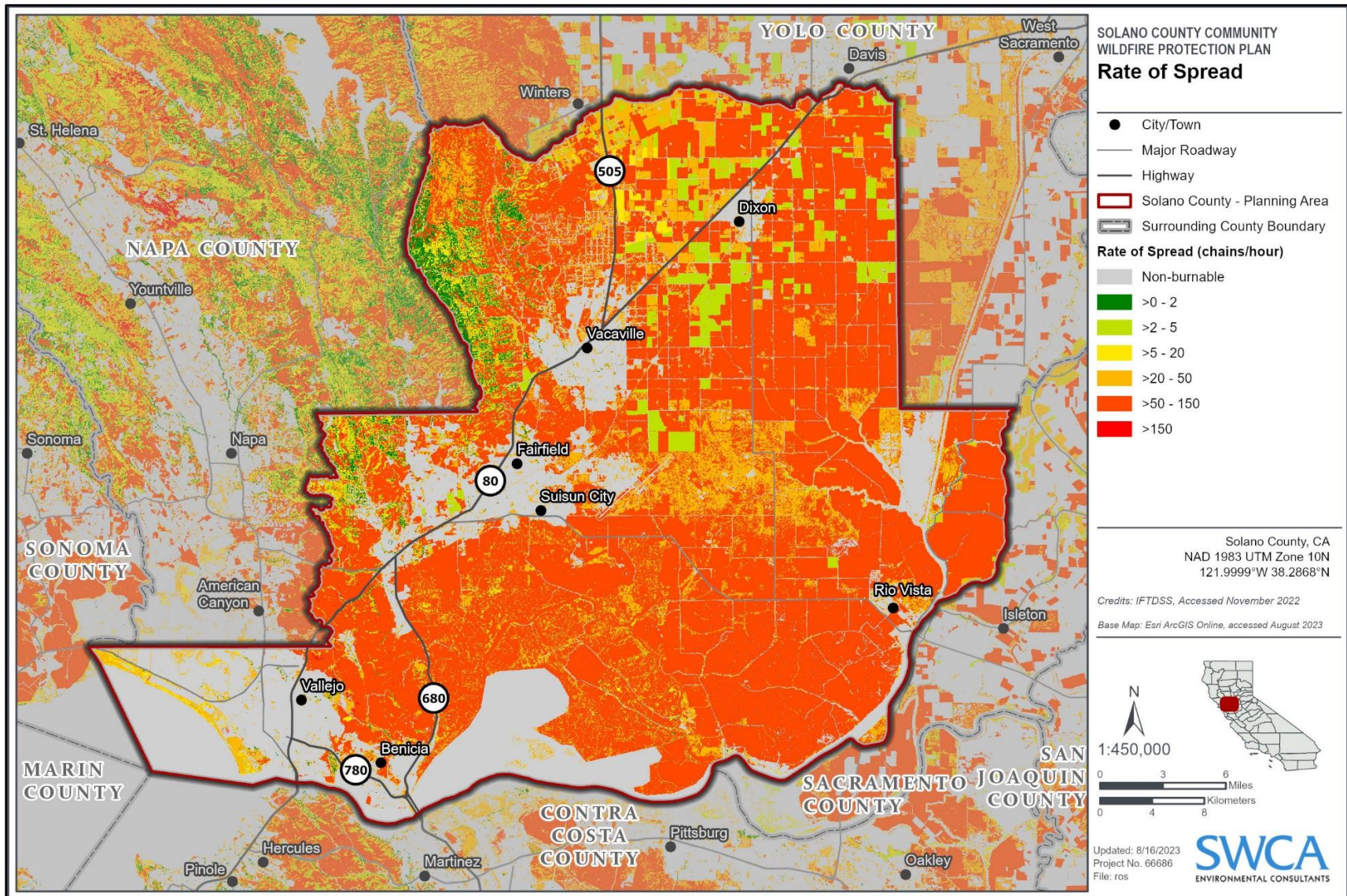
Map B.4. Risk-Hazard Assessment inputs: rate of spread, generated using the Interagency Fuel Treatment Decision Support System
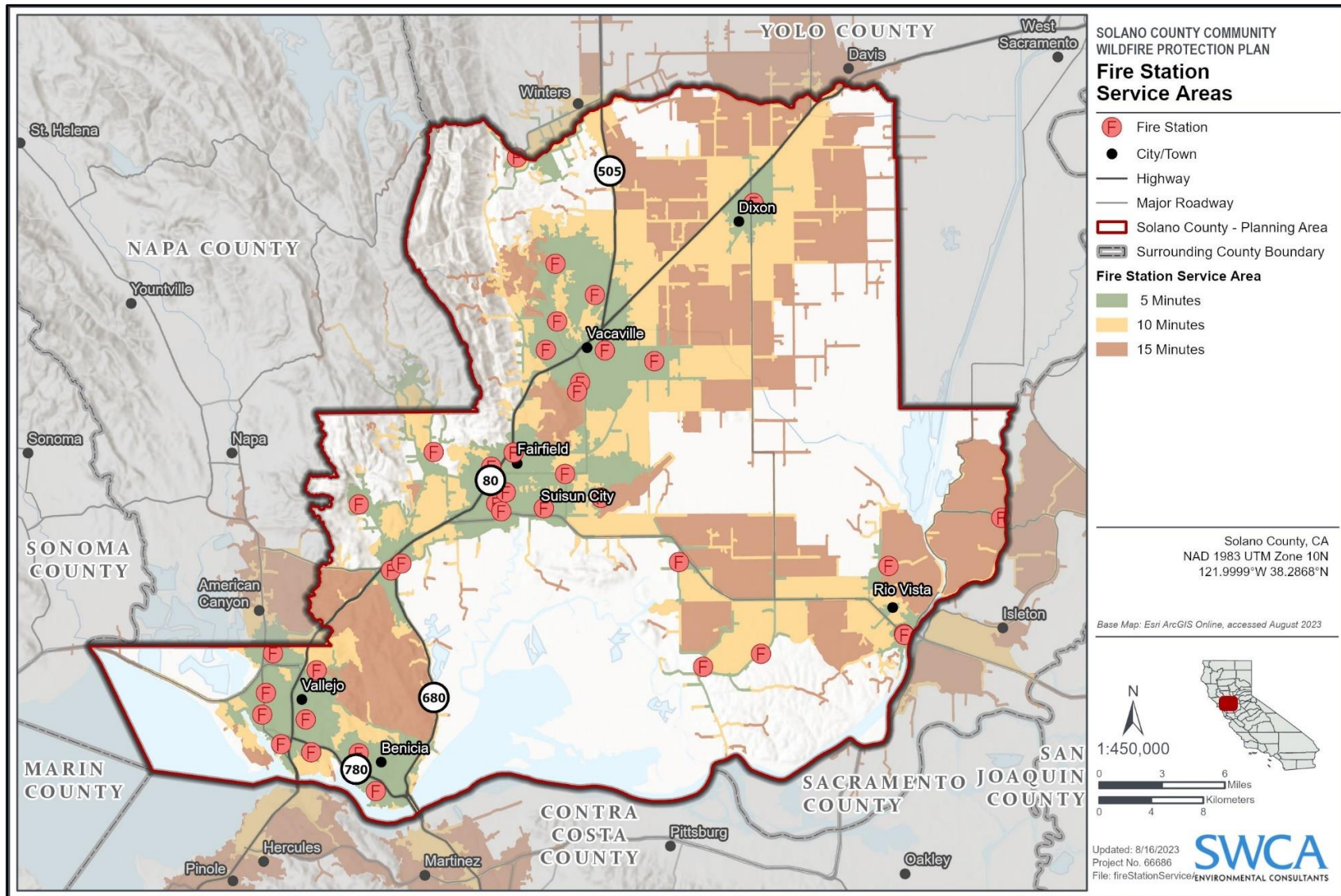
Map B.5. Risk-Hazard Assessment inputs: crown fire activity, generated using the Interagency Fuel Treatment Decision Support System

Map B.6. Risk-Hazard Assessment based on distance from fire station service areas
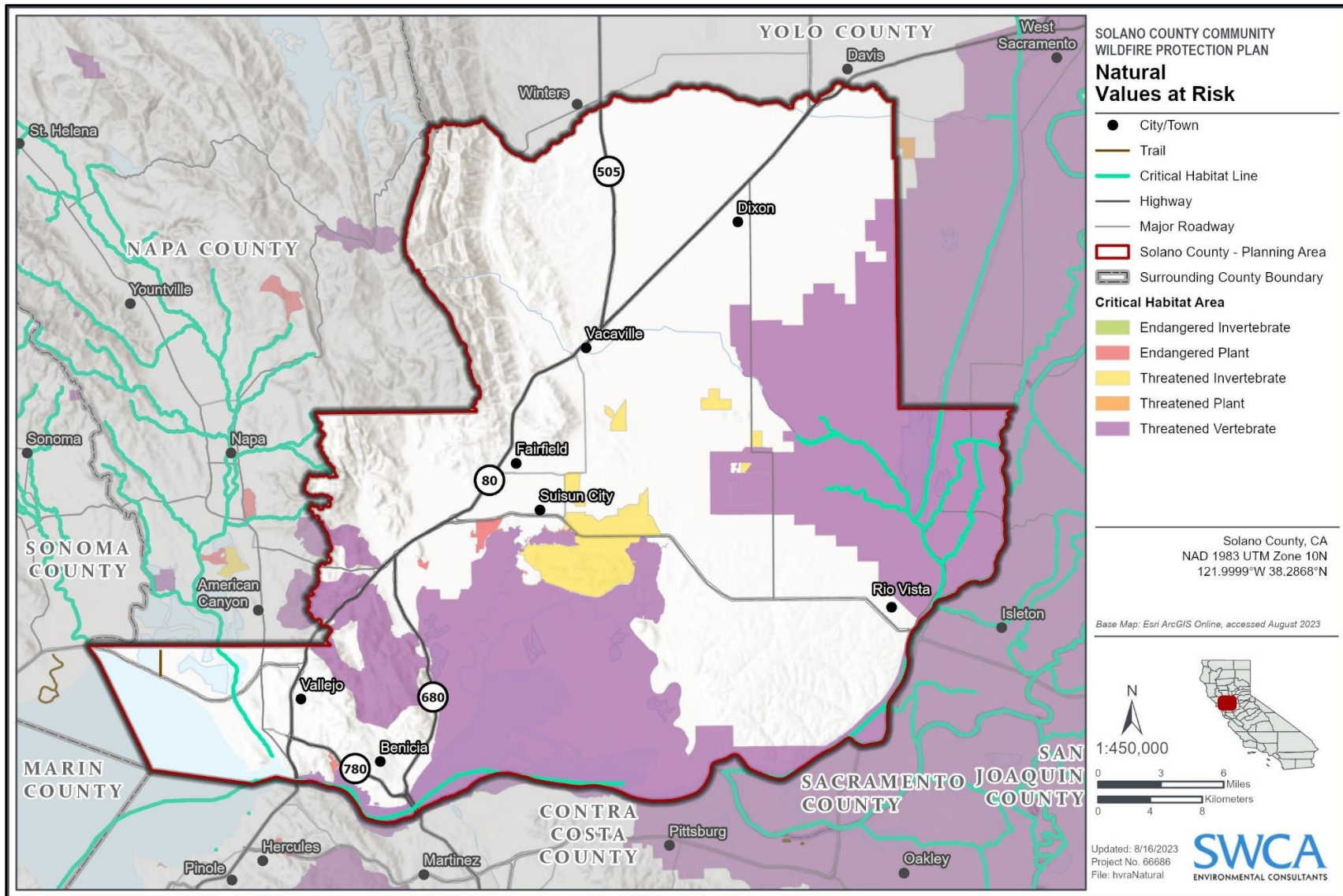
Map B.7. Risk-Hazard Assessment inputs: natural values at risk
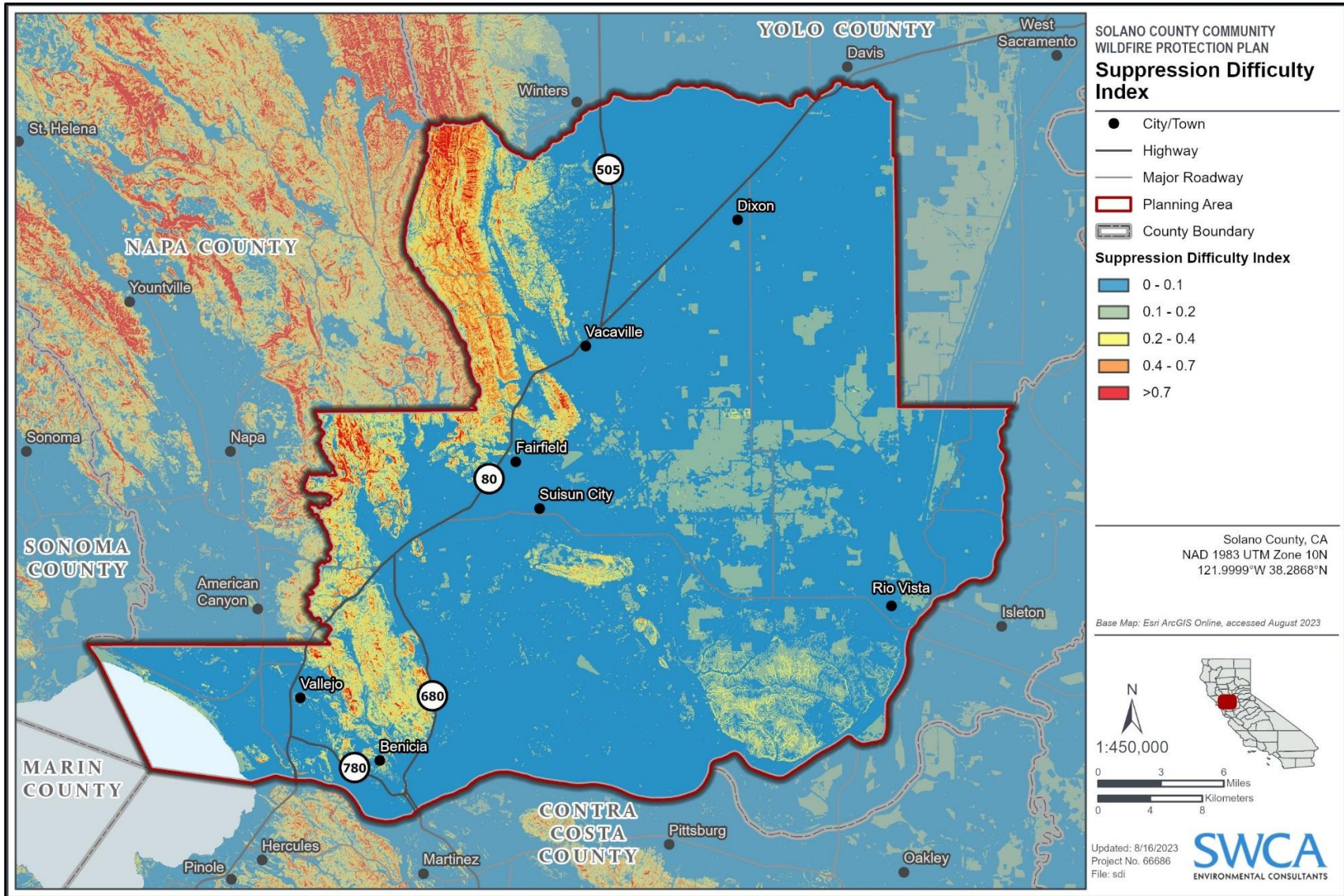
Map B.8. Risk-Hazard Assessment inputs: suppression difficulty index, based on analysis of fuels and fire suppression options
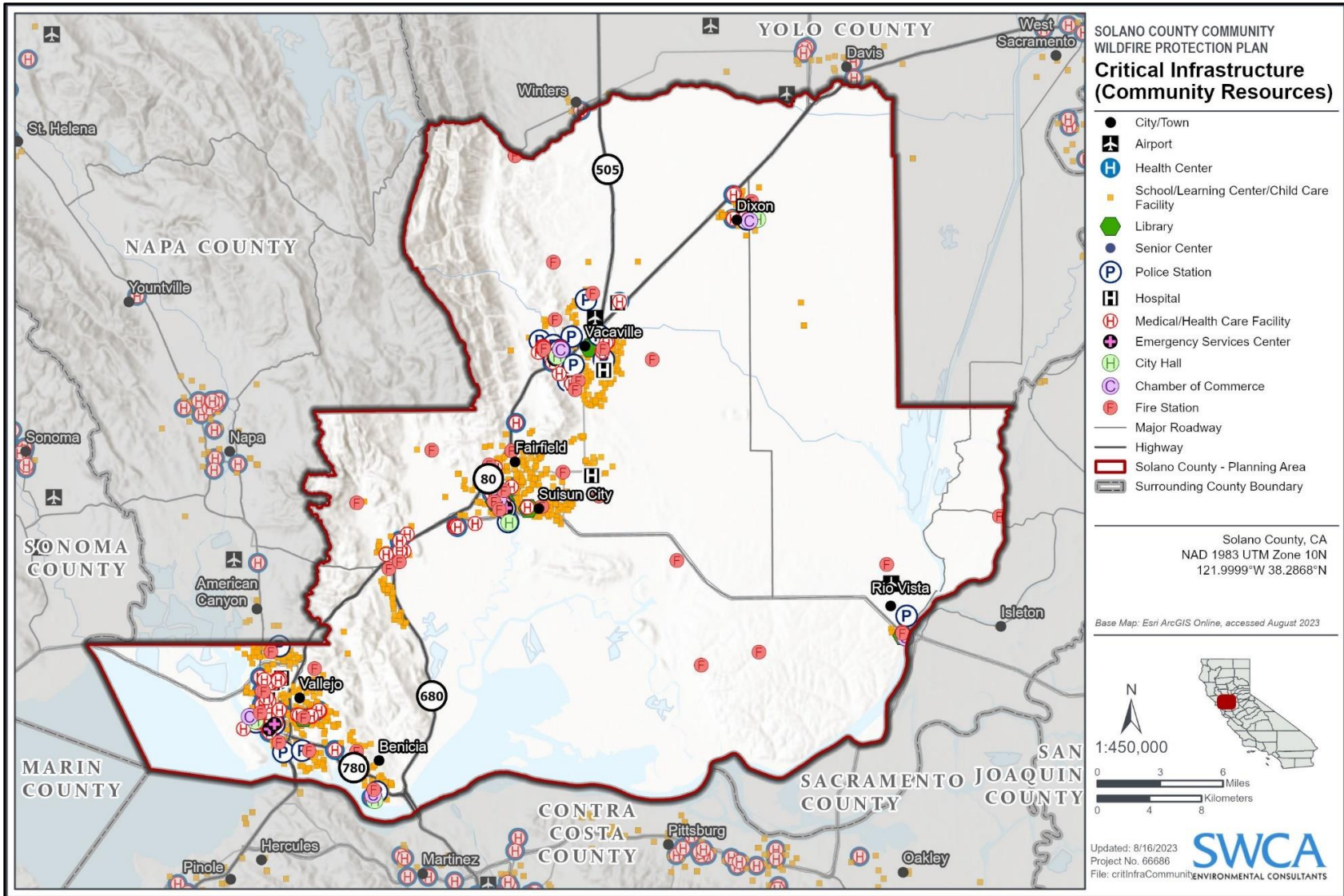
Map B.9. Community resources within Solano County
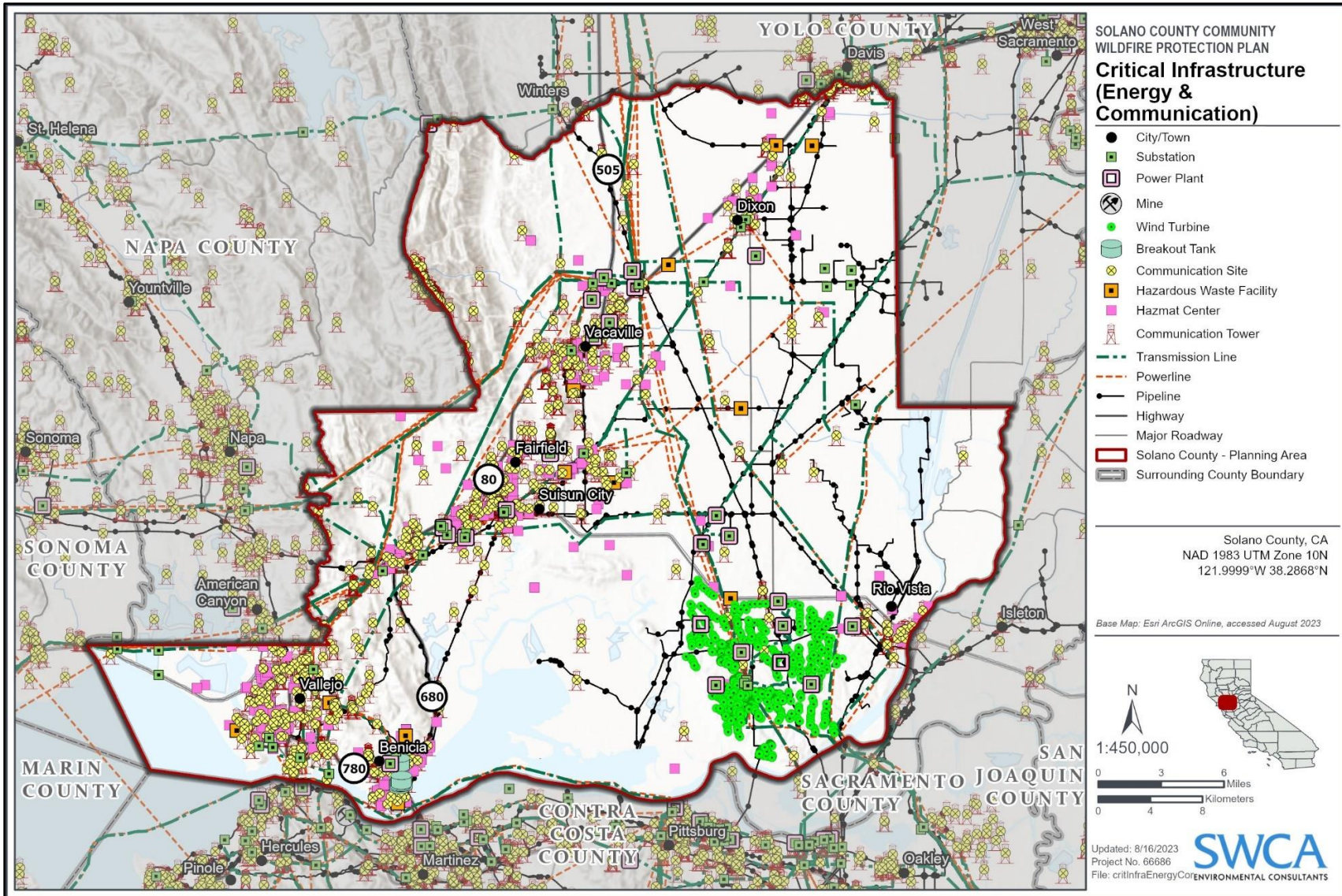
Map B.10. Critical infrastructure: energy and communications
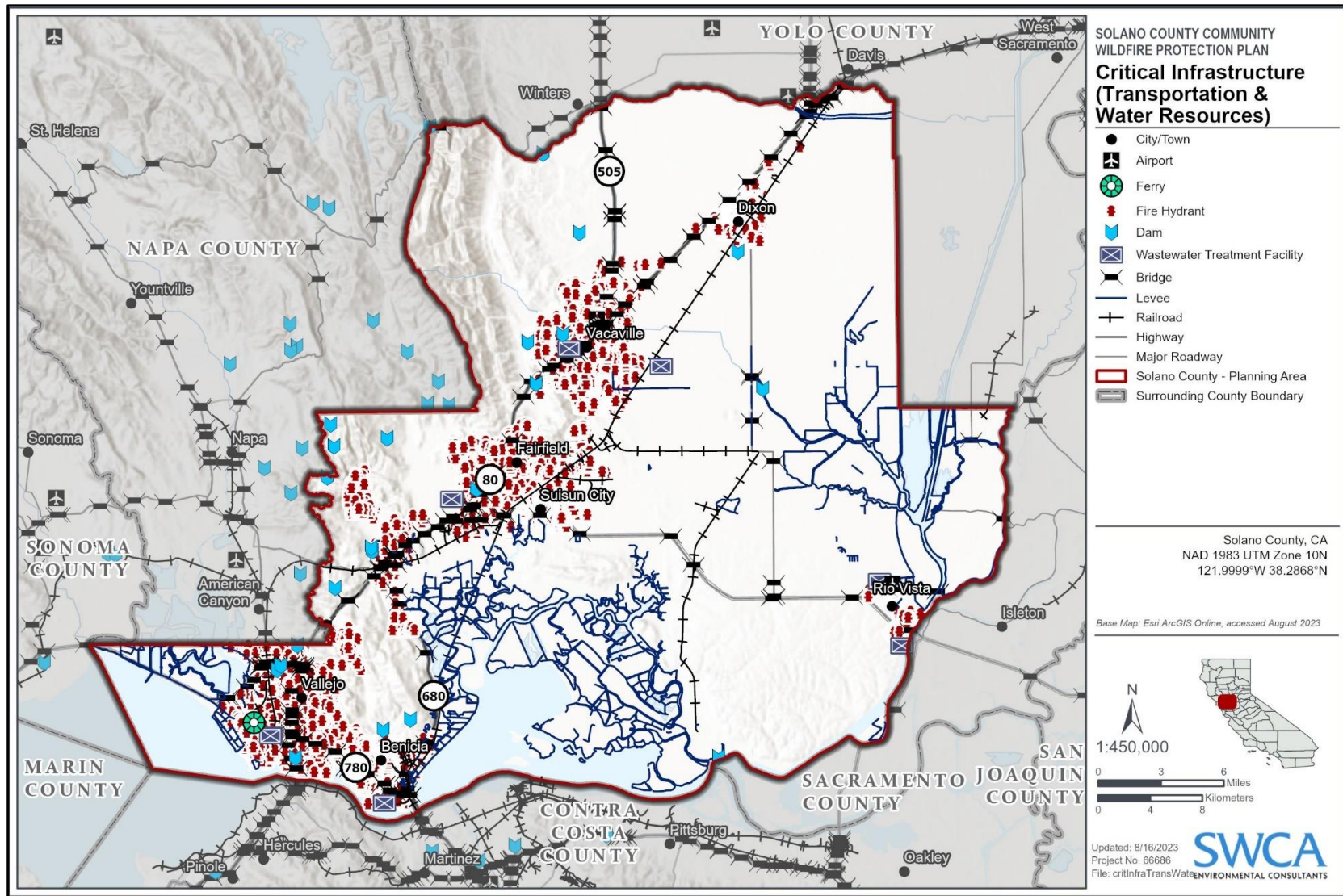
Map B.11. Critical infrastructure: transportation and water resources

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APPENDIX C :

Community Risk-Hazard Assessments for

Wildland-Urban Interface Communities

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CONTENTS

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C.1 SOLANO COUNTY

C.1.1 COMMUNITY ASSESSMENT SUMMARIES

This appendix provides a summary of the data gathered in each community during on-the-ground assessments. The assessment summaries capture average conditions within each community area; therefore, the provided ratings (e.g., moderate, extreme, etc.) may not universally apply to every parcel within the community. It's important to note that these ratings reflect the collective evaluation of the community as an entity and not necessarily the classification of extreme (or any other category) for every individual parcel. These ratings are indicative of the overall assessment of the community's vulnerability, guiding strategies for informed mitigation actions.

Please note that city boundaries may have been shifted to encompass surrounding development, so the boundaries may not reflect the proper city limits.
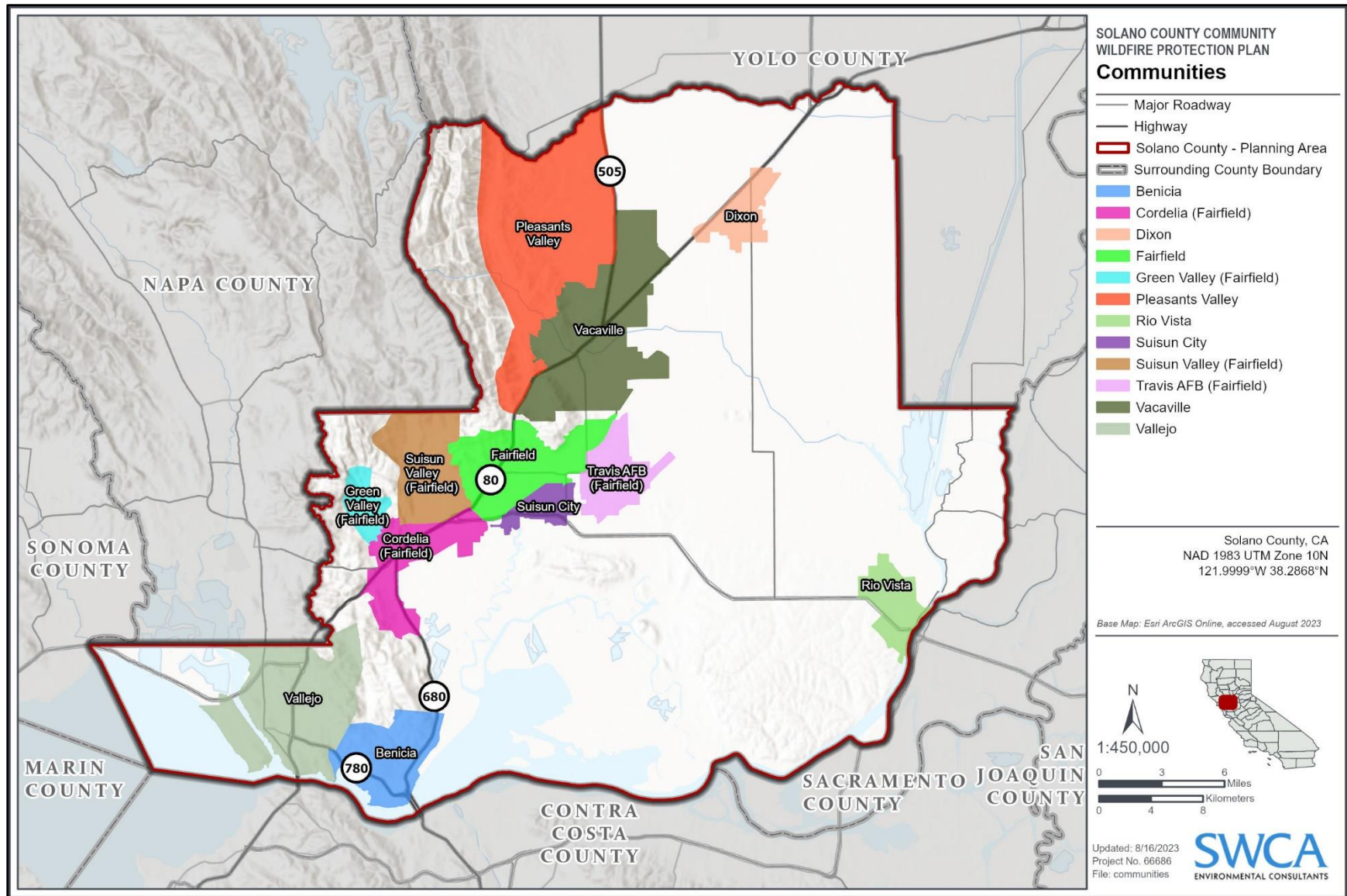
Figure C.1. Solano County community boundaries
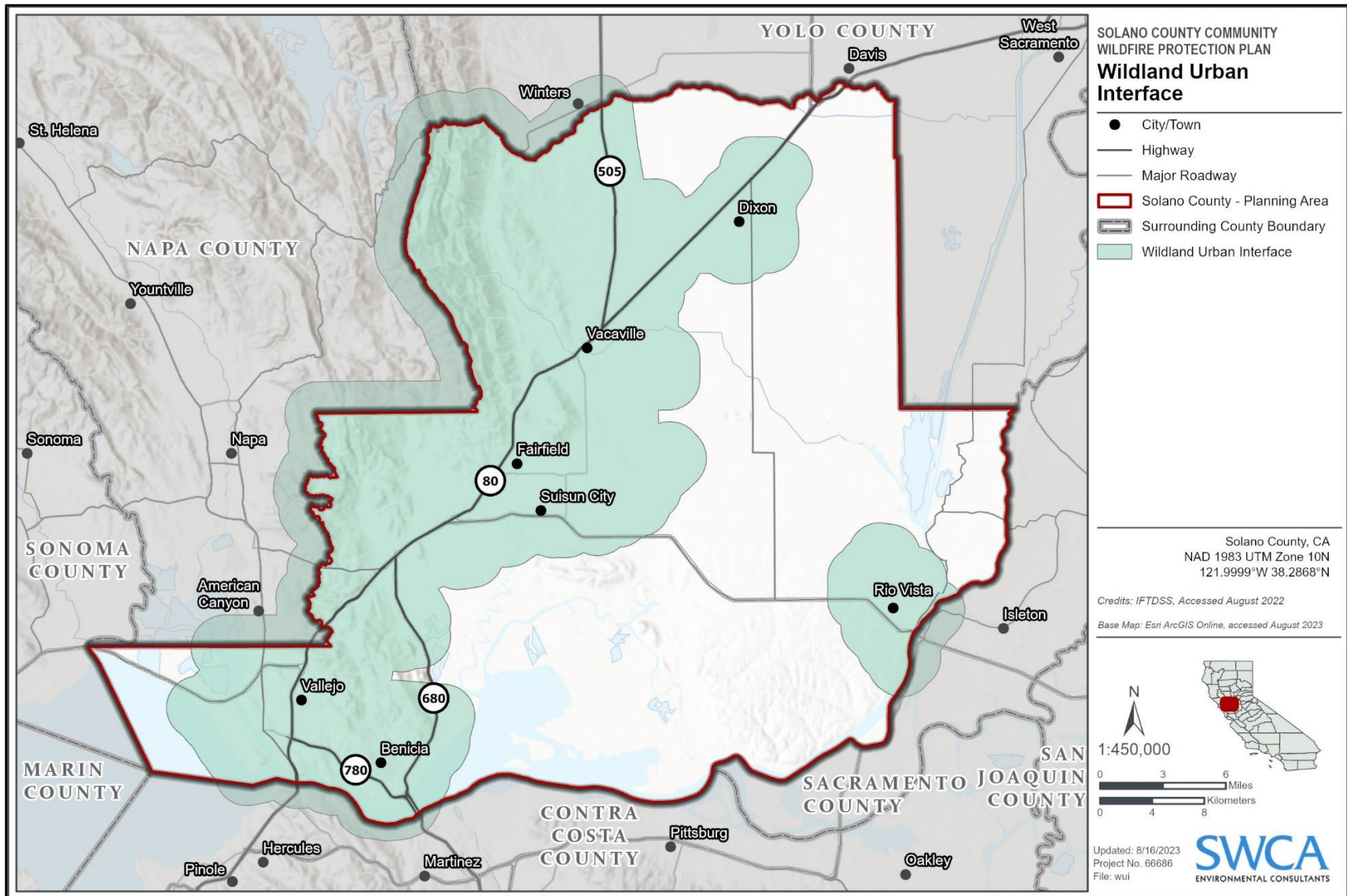
Figure C.2. Solano County wildland-urban interface delineation

Benicia Summary Statistics

Community Background

Community Name: Benicia   **Total Score:** 62 (moderate)   **Land Area (acres):** 9,922

Percent of Community by Modeled/Calculated Wildfire Risk Inputs

Drive Time from Fire Station

0-5 (min): 69%

5-10 (min): 14%

10-15 (min): 14%

15+ (min): 3%

Fire Department Statistics: Benicia Fire Department

Fire Stations: 11, 12

Fulltime Firefighters: 11   On-call Firefighters: --   Volunteer Firefighters: --

Water Tenders: 1   Wildland Engines

Structure Engines:	Total Number:	4WD/AWD:	Brush Breaker:
Type 1: 3	Type 3: 2	2	--
Type 2: --	Type 4: --	--	--
Quint: 1	Type 5: 1	1	--
Port-A-Tanks: 1	Type 6: 1	1	--
Portable Pumps: 6	Type 7: --	--	--

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Street signs present and reflective
- Surfaced, low-grade roads
- Two or more roads in and out
- Mostly fire-resistive construction materials
- Good separation from slope
- Hydrants present
- Community is <5 miles from fire station
- Fire-resistant roofing materials
- Fire-resistant house siding materials
- Relatively wide roads
- Good water sources

Negative Attributes (High Scores)

- Limited defensible space around structures
- Many cul-de-sacs and dead ends.
- Fire access is >300 feet before turnaround
- Aboveground electric utilities
- Lack of separation of adjacent structures
- Oil refineries and lots of industrial facilities at risk
- Vegetated open space areas surrounding some communities
- Combustible decks and fences

Suggested Mitigation Focus Area

Areas of Concern:

- Vegetated open spaces surrounding communities

Suggested Mitigation Focus Area

- Industrial centers

Fire Department and Community Concerns:

- Access concerns – dead ends and cul-de-sacs
- Communities surrounded by rolling grasslands in the northern and western sections of the city
- The need for
    - Consolidation of fire and EMS services
    - Continued use of prescribed herbivory (goats) in heavy fuel areas
    - Community education and involvement in mitigation

Recommendations:

- See Appendix J for countywide measures
- Educate homeowners on defensible space and home hardening measures
- Focus attention on high-density housing developments that could cause house-to-house ignitions
- Carry out and maintain vegetation clearance along driveways
- Assess feasibility for alternative egress routes for dead ends
- Regular mowing around perimeters of open space areas, with a focus on areas that interface residential property
- Regular monitoring and maintenance of utility ROW

Figure C.3. City of Benicia: Many communities are situated on rolling hills with grasslands, and many roads within communities terminate in cul-de-sacs and dead ends. Source: Google Earth. Acquisition date: 04/2022
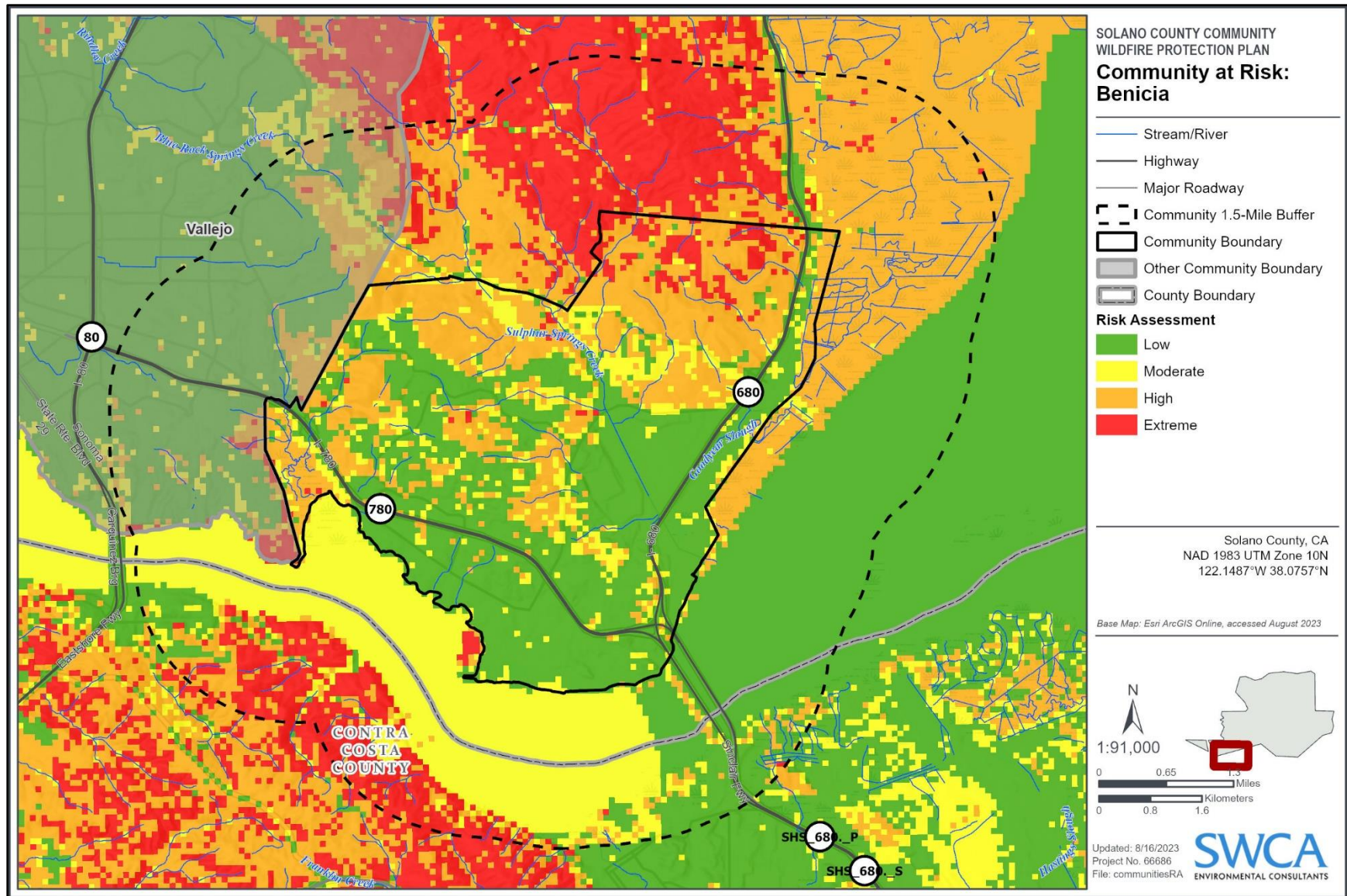
Figure C.4. Risk assessment detail for Benicia

Cordelia (Fairfield) Summary Statistics

Community Background		
Community Name: Cordelia (Fairfield)	**Total Score:** 65 (Moderate)	**Land area (acres):** 8,941

Percent of Community by Modeled/Calculated Wildfire Risk Inputs
Drive Time from Fire Station
0-5 (min): 51%
5-10 (min): 23%
10-15 (min): 14%
15+ (min): 12%

Fire Department Statistics: Fairfield Fire Department

Fire Stations: 35, 36, 37, 39, 40, 41

Fulltime Firefighters: 22   On-call Firefighters: --   Volunteer Firefighters: --

Water Tenders: --   Wildland Engines

Structure Engines:		Total Number:	4WD/AWD:	Brush Breaker:
Type 1: 6		Type 3: 3	3	--
Type 2: --		Type 4: --	--	--
Quint: --		Type 5: 4	4	--
Port-A-Tanks: 0		Type 6: --	--	--
Portable Pumps: 6		Type 7: --	--	--

*Fire protection services are provided by the Fairfield Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Relatively flat, surfaced roads
- Existing street signage is reflective
- Relatively wide roads
- Fire-resistant roofing materials
- Fire-resistant siding materials
- Good separation from slope
- Community is <5 miles from fire station

Negative Attributes (High Scores)

- Fire access is >300 feet before turnaround
- Many cul-de-sacs and dead ends
- Limited defensible space around structures
- Lack of separation of adjacent structures
- Aboveground electric utilities
- Combustible decks and fences
- One road in and out of many areas of the community
- Steep hills in some areas
- Water infrastructure for fire suppression is not dependable
- Bridges to access residential properties with unknow capacities
- Lack of or poor weed abatement and vegetation management practices

Suggested Mitigation Focus Area

Areas of Concern:

- Foothills within and around the community
- Foothills to the northwest
- North Cordelia (evacuation and accessibility)

Fire Department and Community Concerns:

- Access concerns – dead ends and cul-de-sacs
- Evacuation
- Steep topography
- The recommendation for
    - Community education and involvement in mitigation
    - Consolidation of fire and EMS services

Recommendations:

- See Appendix J for countywide measures
- Educate homeowners on defensible space and home hardening measures
- Focus attention on high-density housing developments that could cause house-to-house ignitions
- Carry out and maintain vegetation clearance along driveways and roadways
- Assess feasibility for alternative egress routes for dead ends
- Develop and maintain WUI fuel break along western perimeter of community, with sufficient dimensions to accommodate slope impacts on fire spread
- Installation of temporary water tanks during fire season
- Implement weed abatement measures on adjacent public lands
- Regular monitoring and maintenance of utility ROW

Figure C.5. Cordelia (Fairfield). Many communities are situated on rolling hills with grasslands, and many roads within communities terminate in cul-de-sacs and dead ends. The standard cardinal direction (north) has been changed to capture sufficient community detail. Source: Google Earth. Acquisition date: 04/2022
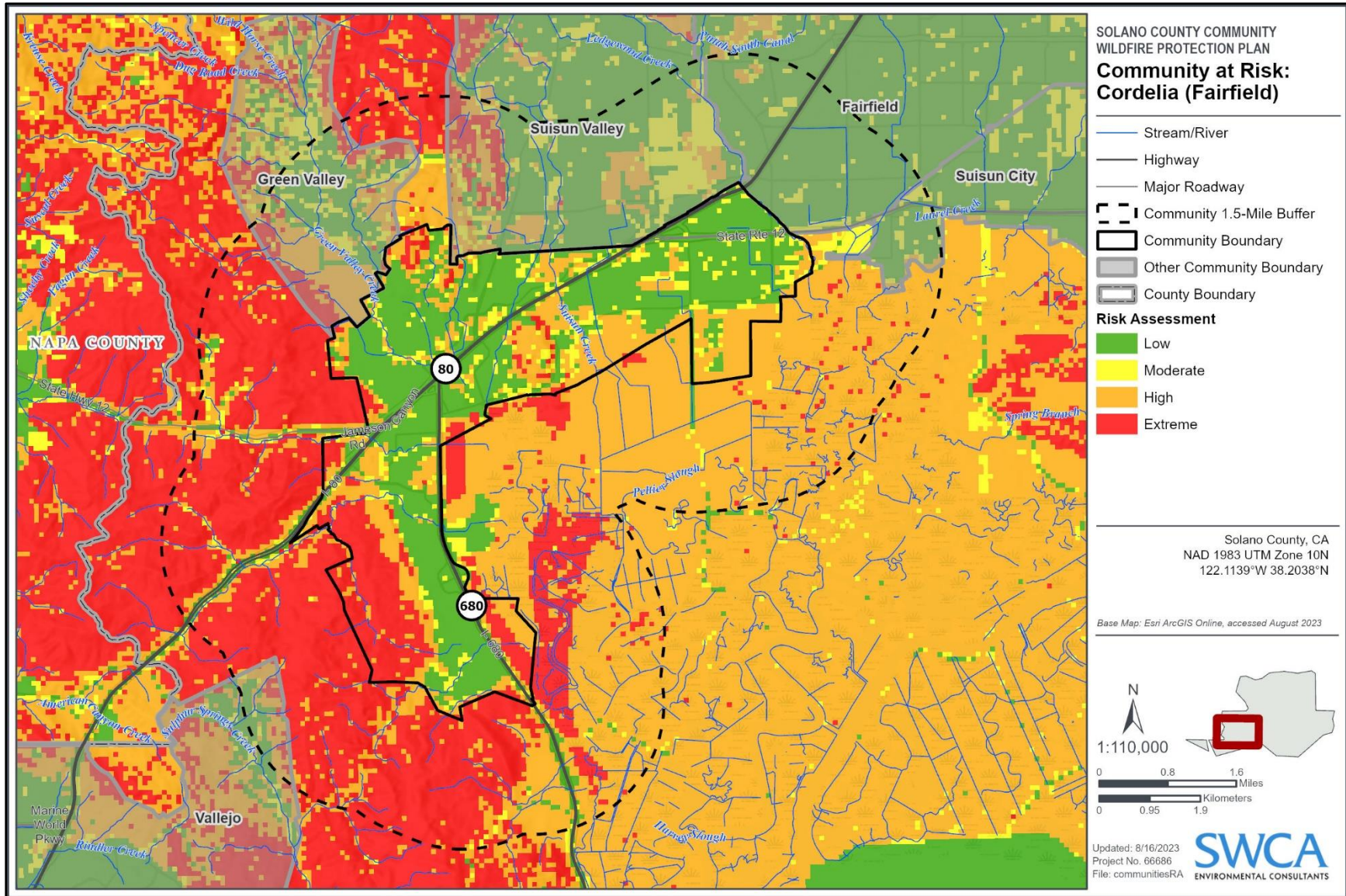
Figure C.6 Risk assessment detail for Cordelia (Fairfield)

Dixon Summary Statistics

Community Background

Community Name: Dixon   **Total Score:** 48 (Moderate)   **Land area (acres):** 4,489

Percent of Community by Modeled/Calculated Wildfire Risk Inputs

Drive Time from Fire Station

0-5 (min): 66%

5-10 (min): 33%

10-15 (min): 1%

15+ (min): 0%

Fire Department Statistics: Dixon Fire Department

Fire Station: 81

Fulltime Firefighters: 25   On-call Firefighters: --   Volunteer Firefighters: 5

Water Tenders: 2 (Type 2)   Wildland Engines

Structure Engines:	Total Number:	4WD/AWD:	Brush Breaker:
Type 1: 3	Type 3: 1	1	--
Type 2: 0	Type 4: --	--	--
Quint:	Type 5: 1	1	--
Port-A-Tanks: 1	Type 6: --	--	--
Portable Pumps: 4	Type 7: --	--	--

-

1144 Survey Summary Highlights

Positive Attributes (Low Scores)
- Two or more roads in and out
- Relatively wide roads
- Relatively flat, surfaced roads
- Fire access <300 feet before turnaround
- Existing street signage is reflective
- Fire-resistant roofing materials
- Good separation from slope
- Hydrants present
- Community is <5 miles from fire station

Negative Attributes (High Scores)
- Severe fire weather potential
- Limited defensible space around structures
- Aboveground electric utilities
- Combustible siding materials, decks, and fences

Suggested Mitigation Focus Area

Areas of Concern:

- Fires spreading from the northwest (Vacaville area)
- North winds pushing fires parallel to fire breaks (e.g., highways)
- Allende (lack of hydrants)
- Winters Road
- Midway RV Park

Fire Department and Community Concerns:

- Excess rubbish and debris on private property
- Ranches with poor defensible space
- Lack of a countywide fuel ordinance
- The recommendation for
  - Community education and involvement in mitigation
  - Consolidation of fire and EMS services

Recommendations:

- See Appendix J for countywide measures
- Community clean up initiative to address yard maintenance and waste
- Educate homeowners on defensible space and home hardening measures
- Focus attention on high-density housing developments that could cause house-to-house ignitions
- Installation of temporary water tanks during fire season
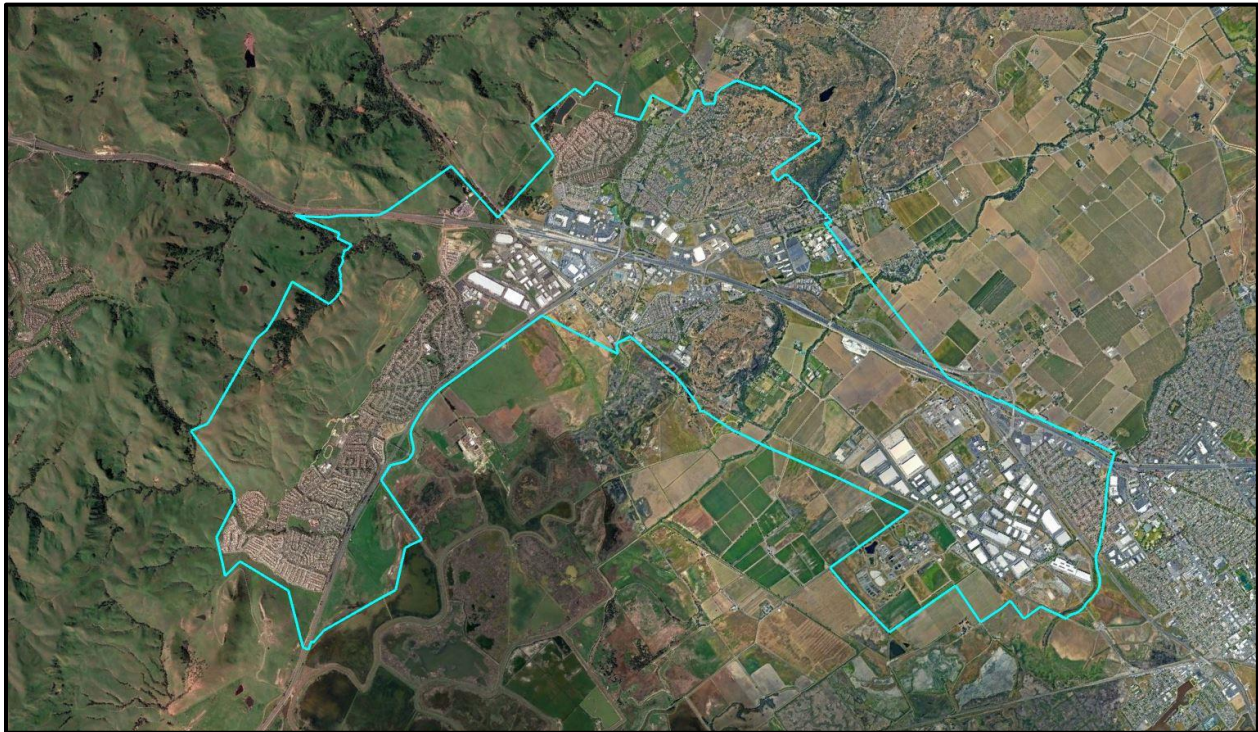- Regular monitoring and maintenance of utility ROW

Figure C.7. City of Dixon. Many communities are situated on rolling hills with grasslands, and many roads within communities terminate in cul-de-sacs and dead ends. Source: Google Earth. Acquisition date: 02/2022
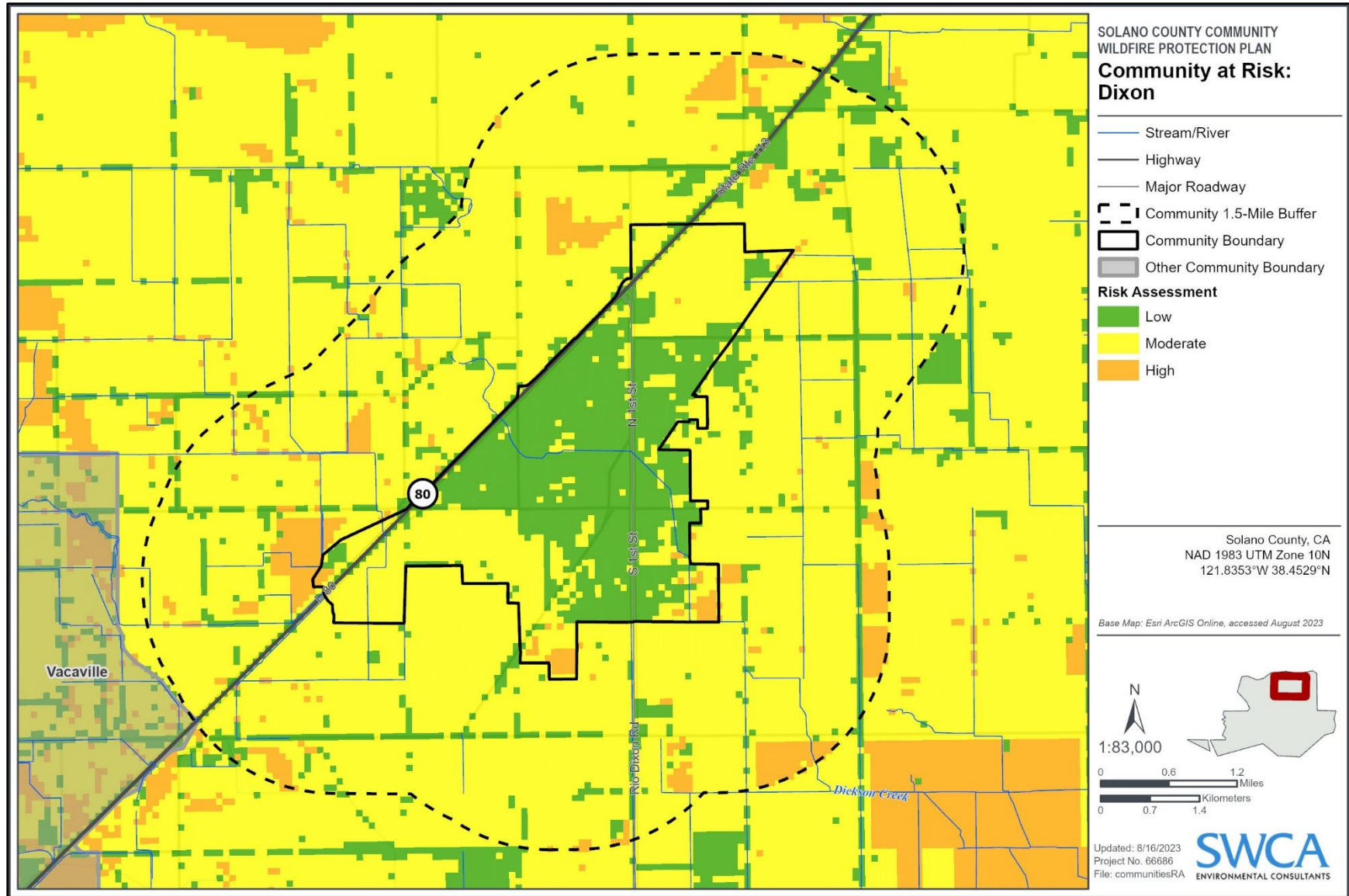
Figure C.8. Risk assessment detail for Dixon

Fairfield Summary Statistics

Community Background

Community Name: Fairfield   **Total Score:** 69 (Moderate)   **Land area (acres):** 13,103

Percent of Community by Modeled/Calculated Wildfire Risk Inputs

Drive Time from Fire Station

0-5 (min): 73%

5-10 (min): 19%

10-15 (min): 1%

15+ (min): 7%

Fire Department Statistics: Fairfield Fire Department

Fire Stations: 35, 36, 37, 39, 40, 41

Fulltime Firefighters: 22   On-call Firefighters: --   Volunteer Firefighters: --

Water Tenders: 1   Wildland Engines

Structure Engines:	Total Number:	4WD/AWD:	Brush Breaker:
Type 1: 6	Type 3: 3	--	--
Type 2: --	Type 4: --	--	--
Quint: --	Type 5: 4	--	--
Port-A-Tanks: 0	Type 6: --	--	--
Portable Pumps: 6	Type 7: --	--	--

-

1144 Survey Summary Highlights

Positive Attributes (Low Scores)
- Relatively wide roads
- Surfaced, low-grade roads
- Fire access <300 feet before turnaround
- Existing street signage is reflective
- Fire-resistant roofing materials
- Fire-resistant siding materials
- Hydrants present

Negative Attributes (High Scores)
- One road in and out in some areas
- Limited defensible space around structures
- <30 feet separation from slope
- Community >5 miles from fire station
- Aboveground electric utilities
- Combustible decks and fences

Suggested Mitigation Focus Area

Areas of Concern:
- Green Valley, Cement Hill, Rancho Solano, Paradise Valley, Gold Ridge

Fire Department and Community Concerns:

- Ingress and egress
- Fuel loading along roads
- Poor water supply in adjacent areas
- Communication dead spots in the WUI
- The recommendation for
  - Community education and involvement in mitigation
  - Consolidation of fire and EMS services

Recommendations:

- See Appendix J for countywide measures
- Educate homeowners on defensible space and home hardening measures
- Focus attention on high-density housing developments that could cause house-to-house ignitions
- Carry out and maintain vegetation clearance along driveways and roadways
- Assess feasibility for alternative egress routes
- Develop and maintain WUI fuel break along northern perimeter, with sufficient dimensions to accommodate slope impacts on fire spread
- Installation of temporary water tanks during fire season
- Assess communications and develop fire response communications plan
- Implement outreach initiative to encourage community preparedness with focus on evacuation
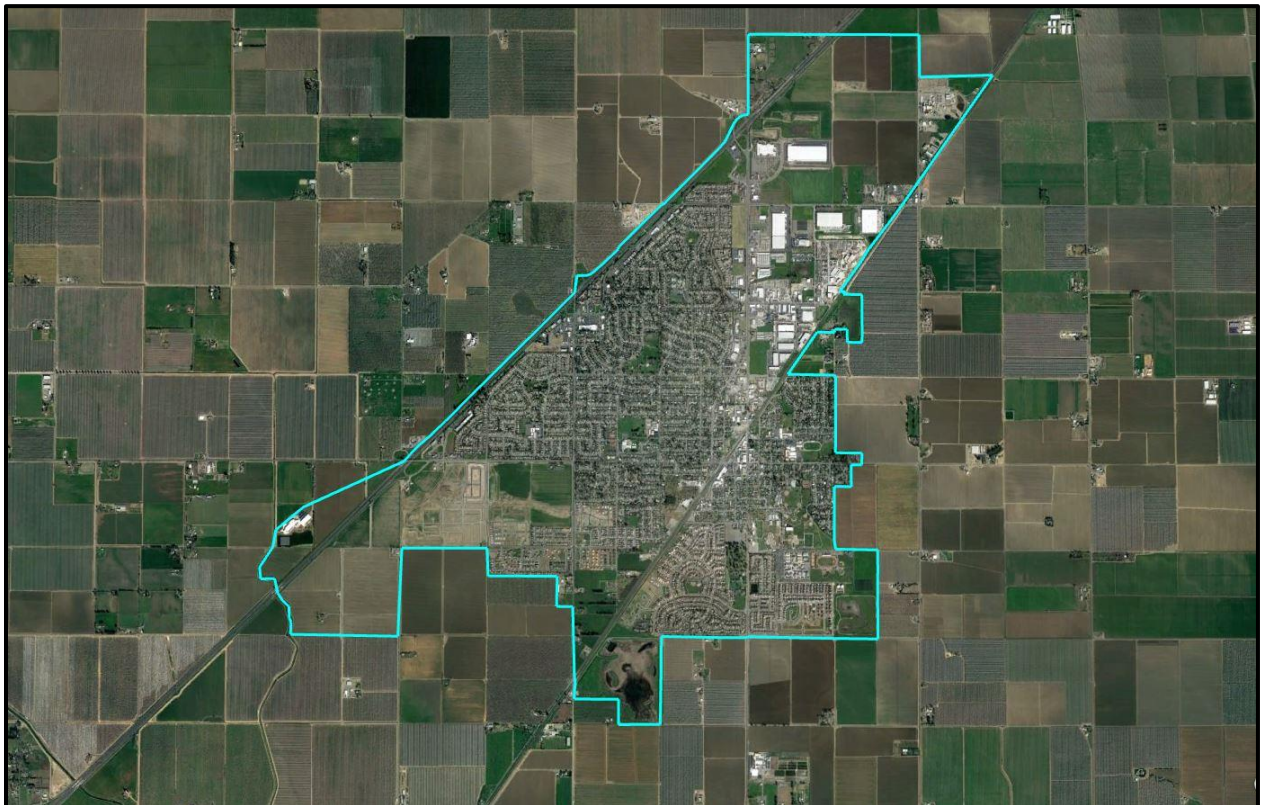- Regular monitoring and maintenance of utility ROW

Figure C.9. City of Fairfield. Many communities are situated on rolling hills with grasslands, and many roads within communities terminate in cul-de-sacs and dead ends. The standard cardinal direction (north) has been changed to capture sufficient community detail. Source: Google Earth. Acquisition date: 04/2022

Figure C.10. Risk assessment detail for Fairfield

Green Valley Summary Statistics

Community Background

Community Name: Green Valley   **Total Score:** 117 (Extreme)   **Land area (acres):** 3,156

Percent of Community by Modeled/Calculated Wildfire Risk Inputs

Drive Time from Fire Station

0-5 (min): 0% (however, station is not staffed full time)

5-10 (min): 58%

10-15 (min): 1%

15+ (min): 41%

Fire Department Statistics: Fairfield Fire Department

Fire Station: 35

Fulltime Firefighters: 3   On-call Firefighters: 0   Volunteer Firefighters: 0

Water Tenders: --   Wildland Engines

Structure Engines:		Total Number:	4WD/AWD:	Brush Breaker:
Type 1: 1		Type 3: 1	1	--
Type 2: 0		Type 4: 0	--	--
Quint: --		Type 5: 0	--	--
Port-A-Tanks: --		Type 6: 0	--	--
Portable Pumps: 1		Type 7: 0	--	--

*Fire protection services are provided by Fairfield Fire Department, and the closest station to Green Valley is Station #35

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Surfaced, low-grade roads
- Existing street signage is reflective
- Fire-resistant roofing
- Fairfield is building a new station closer to Green Valley
- Considerable variation in degree of hazard within the community
- Fuel treatment accomplishments, including perimeter fuel breaks
- Good coordination with residents through the Green Valley Fire Safe Council

Negative Attributes (High Scores)

- Only one road in and out
- Roads <20 feet wide
- Fire access >300 feet with no turnaround
- Many long, narrow, steep, and winding driveways, some gated
- Limited defensible space around structures
- Steep topography <300 feet of structures (31%–40%)
- Some areas >40% slope
- Most driveways with slope >40%.
- Mostly combustible materials; few houses hardened.
- Combustible siding material
- Station >5 miles from community
- Combustible decks/fences that are less than 30 feet to a slope
- Aboveground electric utilities
- Poor water supply

Suggested Mitigation Focus Area

Areas of Concern:

- Specific areas: Highlands, Green Valley Road north of Rockville Road

Fire Department and Community Concerns:

- Consolidation of fire and EMS services
- Fuel loading along roads
- Ingress and egress
- Water supply
- Lack of defensible space within and around community
- Communication dead spots in the WUI

Recommendations:

- See Appendix J for countywide measures
- Educate homeowners on defensible space and home hardening measures
- Focus attention on high-density housing developments that could cause house-to-house ignitions
- Carry out and maintain vegetation clearance along driveways and roadways
- Assess feasibility for alternative egress routes
- Complete the shaded fuel break that surrounds community
- Create and maintain a fuel break along the Napa County boundary for protection and to mitigate exposure
- Installation of temporary water tanks during fire season
- Assess communications and develop fire response communications plan
- Implement outreach initiative to encourage community preparedness with focus on evacuation
- Regular monitoring and maintenance of utility ROW
- Use prescribed herbivory (goats) in heavy fuel areas; potential coordination between neighbors to share costs
- Improve burn day messaging and communications
- Acknowledge community concerns regarding insurance and Green Valley Fire Safe Council to provide a forum for those concerns
- Educate homeowners on the hazards associated with challenging terrain for some homes and encouraging preparedness for evacuation

Community progress toward wildfire resiliency:

The Green Valley Fire Safe Council has made considerable progress toward addressing the wildfire hazards and risk, including fuels treatments, installation of fuel breaks in strategic locations, defensible space implementation, education campaigns, home hazard assessments, direct coordination with utility companies, and cross-boundary coordination with adjacent landowners and organizations.

Figure C.11. Green Valley community. The standard cardinal direction (north) has been changed to capture sufficient community detail. Source: Google Earth. Acquisition date: 04/2022
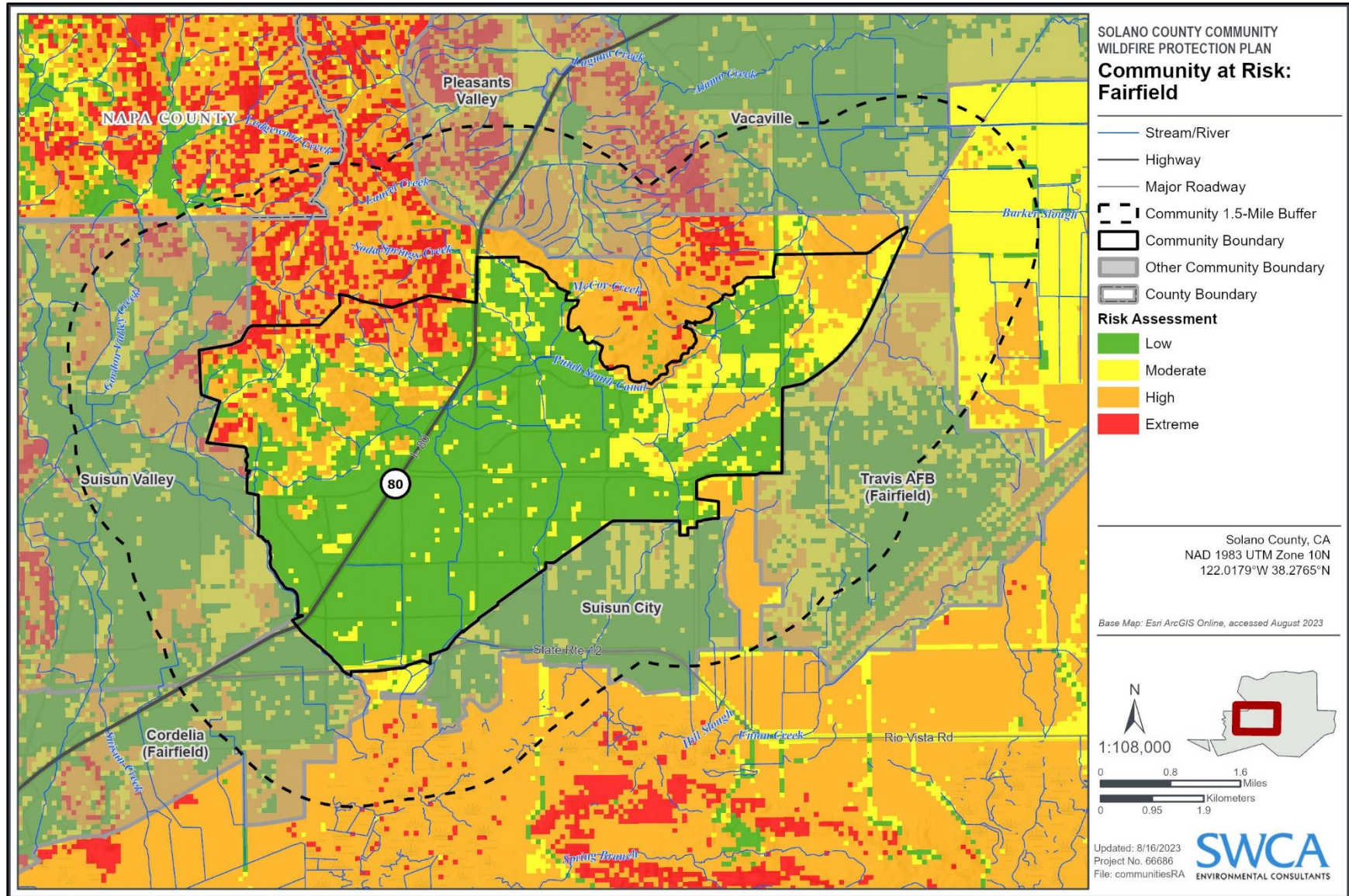
Figure C.12. Risk assessment detail for Green Valley community

Pleasants Valley Community Summary Statistics

Community Background

Community Name: Pleasants Valley   **Total Score:** 112 (Extreme)   **Land area (acres):** 33,837

Percent of Community by Modeled/Calculated Wildfire Risk Inputs

Drive Time from Fire Station

0-5 (min): 23%

5-10 (min): 26%

10-15 (min): 10%

15+ (min): 41%

Fire Department Statistics: Vacaville Fire Protection District

Fire Stations: 64, 65, 67 and 68 (note: fire stations are not staffed 24/7)

Fulltime Firefighters: 6   On-call Firefighters: 0   Volunteer Firefighters: 50*

Water Tenders: 5		Wildland Engines		
Structure Engines:		Total Number:	4WD/AWD:	Brush Breaker:
Type 1: 5		Type 3: 1	1	--
Type 2: 2		Type 4: --	--	--
Quint: --		Type 5: 5	5	--
Port-A-Tanks: --		Type 6: --	--	--
Portable Pumps: 1		Type 7: 3	3	--

*Vacaville station 64 has two additional volunteer firefighters during the fire season

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1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Surfaced, low-grade roads
- Existing street signage is reflective (main thoroughfares)
- Post-LNU Lightning Complex - newer construction with fire-resistive materials.
- Hydrants present
- Underground utility efforts have started in some areas (PG&E)
- Select power poles have been wrapped in fiberglass reinforced plastic (PG&E)

Negative Attributes (High Scores)

- Only one road in and out
- Roads are less than 20 feet wide
- Fire access <300 feet without a turnaround
- Copious amounts of dead and downed logs in ditches and creeks
- Limited defensible space around structures
- Many homes are situated on hilltops
- History of high fire occurrence
- Decks/fences <30 feet to a slope
- Community >5 miles from fire station
- Hydrants are not present in some areas
- Ditches are mostly dry or overgrown
- Aboveground electric utilities
- Steep slopes within and around community
- Propane tanks with poor vegetation clearance
- Bridges with unknown weight capacities

Suggested Mitigation Focus Area

Areas of Concern:

- English Hills, Quail Canyon, Gibson Canyon, Blue Ridge, Rollin Hills Rd, Oliva Lane, Gates Canyon Rd, Mix Canyon Rd, Putah Creek Rd, Pleasants Valley Rd, Highway 128, Miller Creek Canyon
- Riparian corridors
- The majority of the community
- Burned areas with steep slopes that are subject to land slides
- Pleasant Hills Ranch
- Public rights-of-way in the LNU burn area

Fire Department and Community Concerns:

- Water supply
- Communication dead spots in the WUI
- Ingress and egress
- Lack of defensible space on private property
- Addressing and road signage
- Funding to support fire protection and prevention efforts
- Bridges through the community crossing drainages, streams, and creeks need to be evaluated for structural capability and properly marked for capacity with a certification date (standardized program).
- Heavy loading of downed and dying trees in the community, specifically for Cantelow Ridge (above English Hills), Cantelow Rd, Pleasants Valley Rd, and Gibson Canyon.
- The recommendation for
  - Improved emergency notifications
  - A prescribed burn association
  - Consolidation of fire and EMS services

Recommendations:

- See Appendix J for countywide measures
- Educate homeowners on defensible space and home hardening measures
- Focus attention on high-density housing developments that could cause house-to-house ignitions
- Carry out and maintain vegetation clearance along driveways and roadways
- Vegetation clearance of dead and downed fuels in areas with high fire risk, with consideration for wildlife habitat impacts
- Assess feasibility for alternative egress routes
- Create and maintain a fuel break along the Napa County boundary for protection and to mitigate exposure
- Installation of temporary water tanks during fire season
- Assess communications and develop fire response communications plan with focus on notifications
- Implement outreach initiative to encourage community preparedness with focus on evacuation
- Regular monitoring and maintenance of utility ROW
- Use of prescribed herbivory (goats) in heavy fuel areas; potential coordination between neighbors to share costs
- Improve burn day messaging and communications
- Acknowledge community concerns regarding insurance and Pleasants Valley Fire Safe Council to provide a forum for those concerns
- Educate homeowners on the hazards associated with challenging terrain for some homes and encouraging preparedness for evacuation

Community progress toward wildfire resiliency:

The Pleasants Valley Fire Safe Council-Vacaville has made considerable progress toward addressing wildfire hazards and risk, including establishing relationships with non-profits for community fuel reductions, engaging community residents in monthly meetings, attending prescribed burn trainings, education campaigns, and cross-boundary coordination with adjacent landowners and organizations.
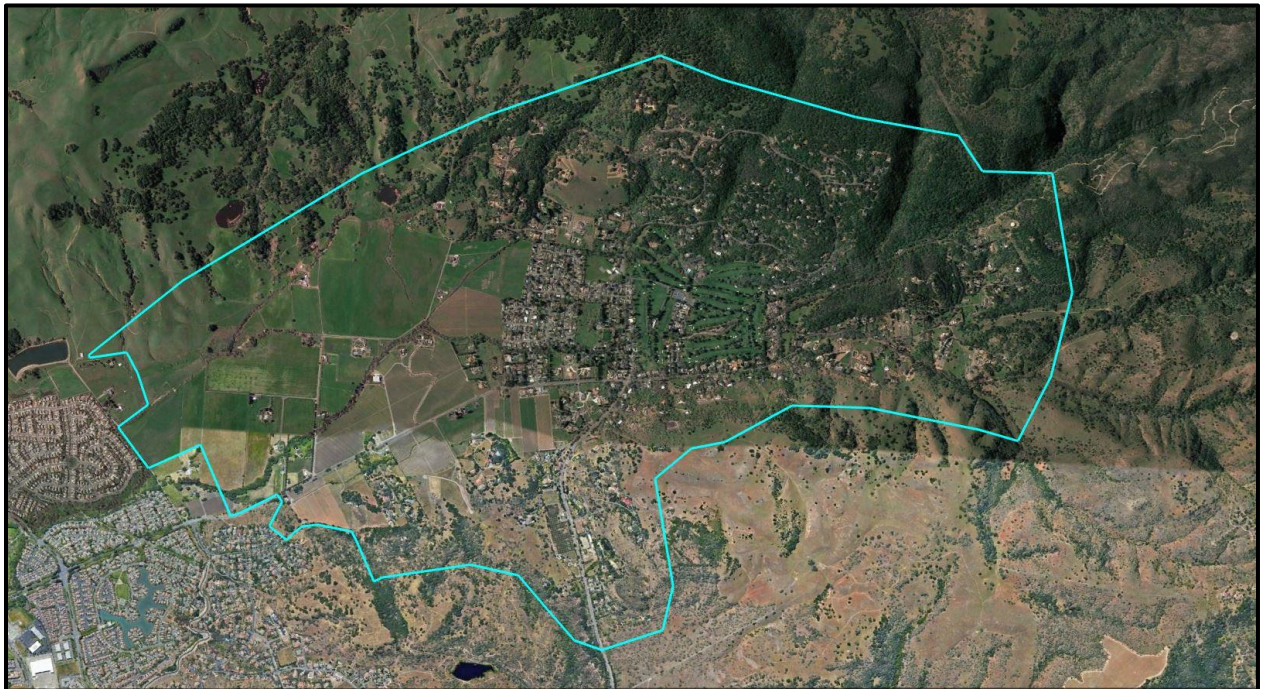
Figure C.13. Pleasants Valley community. The standard cardinal direction (north) has been changed to capture sufficient community detail. Source: Google Earth. Acquisition date: 02/2022
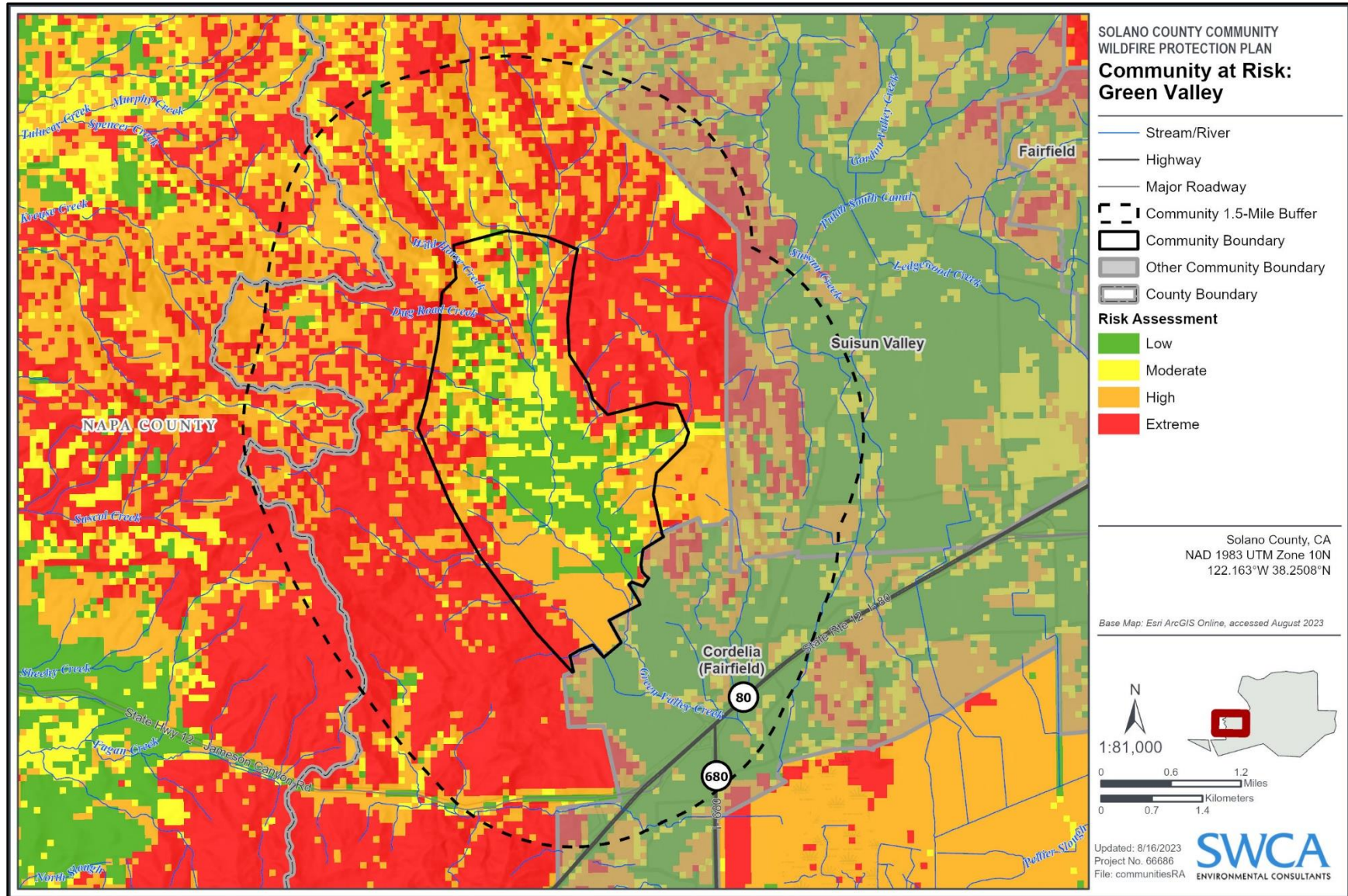
Figure C.14. Risk assessment detail for Pleasants Valley community

Rio Vista Summary Statistics

Community Background
Community Name: Rio Vista*   **Total Score:** 40 (Moderate)   **Land area (acres):** 5,358
*survey included part of the surrounding area, i.e., Montezuma Fire Protection District jurisdiction

Percent of Community by Modeled/Calculated Wildfire Risk Inputs
Drive Time from Fire Station
0-5 (min): 41%
5-10 (min): 32%
10-15 (min): 23%
15+ (min): 4%

Fire Department Statistics: Rio Vista Fire Department

Fire Station: 55

Fulltime Firefighters: 14   On-call Firefighters: --   Volunteer Firefighters: --

		Wildland Engines		
Water Tenders: 1				
Structure Engines:		Total Number:	4WD/AWD:	Brush Breaker:
Type 1: 3		Type 3: 2	2	--
Type 2: 1		Type 4: --	--	--
Quint: --		Type 5: --	--	--
Port-A-Tanks: 1		Type 6: --	--	--
Portable Pumps: 1		Type 7: --	--	--

-

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Two or more roads in and out
- Relatively flat, surfaced roads
- Existing street signage is reflective
- Fire-resistant roofing
- Fire-resistant siding materials
- No or noncombustible deck/fence
- Good separation from slope
- Hydrants present
- Community <5 miles from fire station
- Good water sources

Negative Attributes (High Scores)

- Fire access >300 feet before turnaround
- Some narrow roads
- Limited defensible space around structures
- Aboveground electric utilities

Suggested Mitigation Focus Area

Areas of Concern:

- Agricultural fields prone to roadside ignitions and equipment-caused ignitions

Fire Department and Community Concerns:

- Human-caused ignitions (i.e., cigarettes, vehicles accidents, dragging chains) along main transportation corridors (i.e., Highway 12)
- The recommendation for consolidation of fire and EMS services
- Equipment-caused fires on farmland

Recommendations:

- See Appendix J for countywide measures

- Educate farm/ranch owners and homeowners on defensible space and home hardening measures
- Carry out and maintain vegetation clearance along driveways and roadways
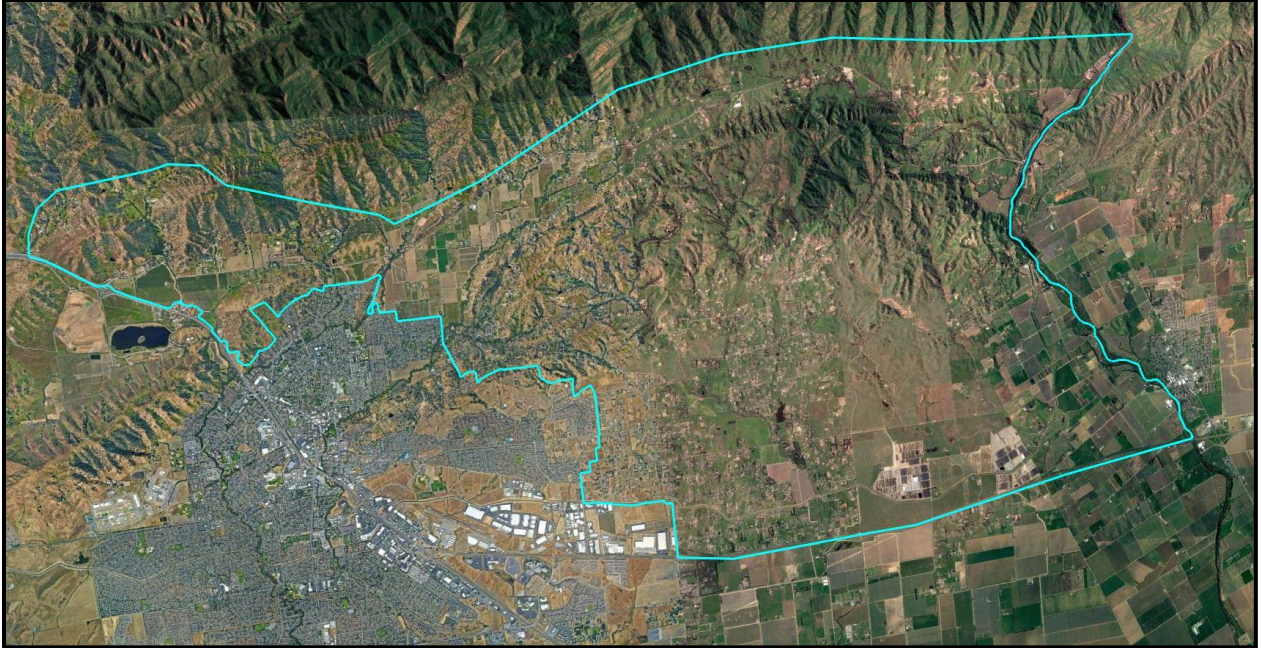- Regular monitoring and maintenance of utility ROW

Figure C.15. City of Rio Vista. The standard cardinal direction (north) has been changed to capture sufficient community detail. Source: Google Earth. Acquisition date: 02/2022
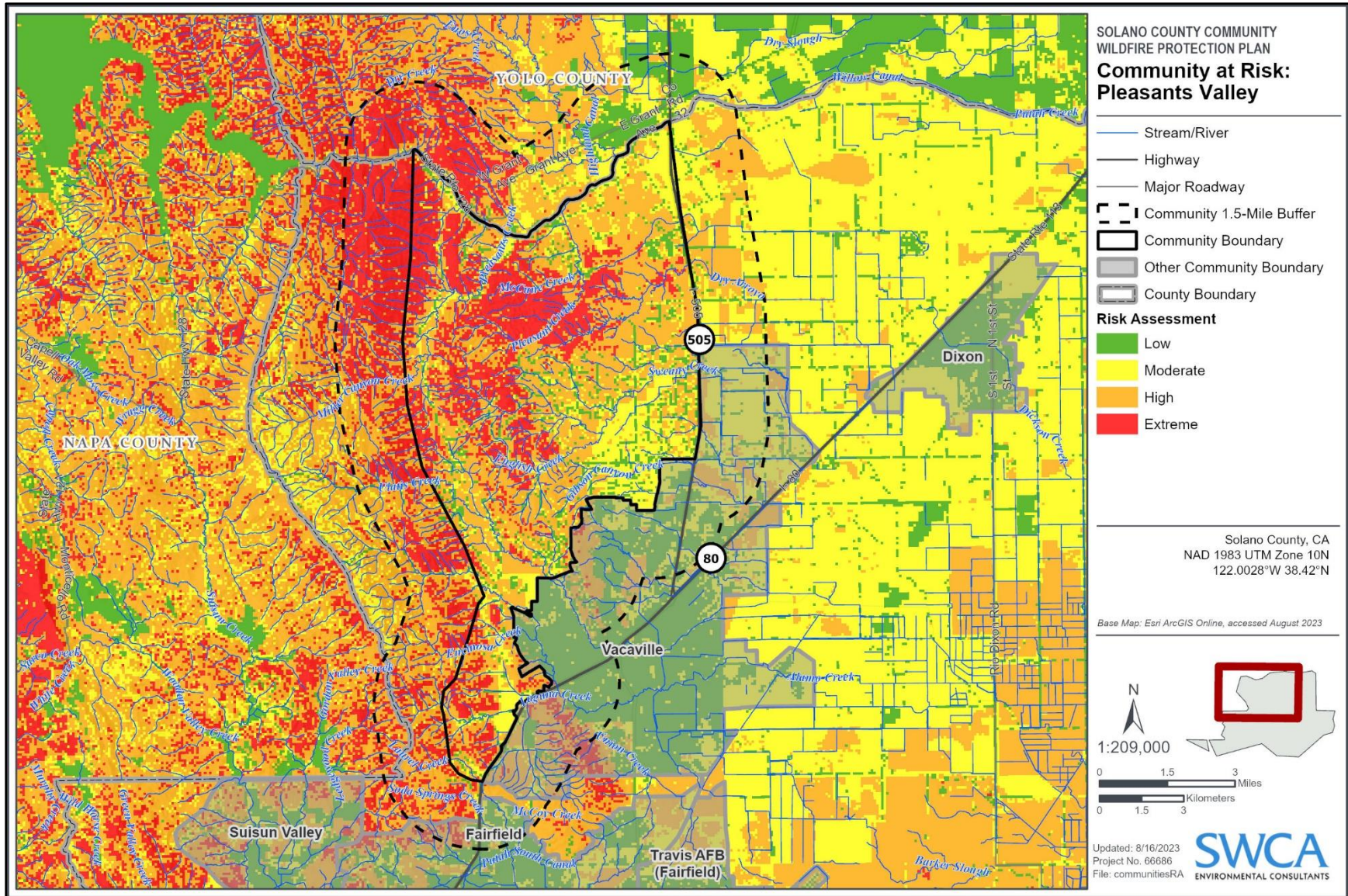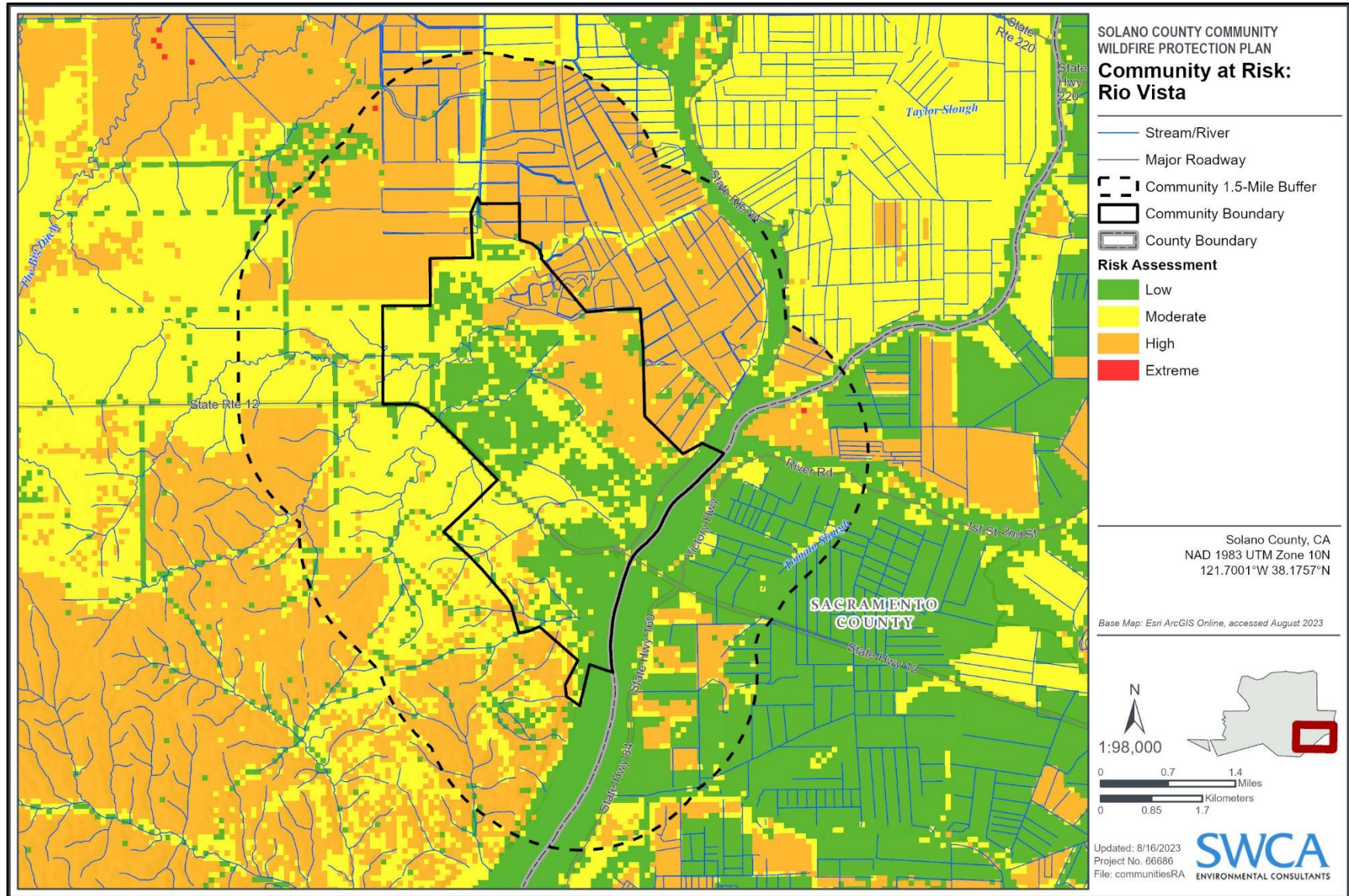
Figure C.16. Risk assessment detail for city of Rio Vista

Suisun City Summary Statistics

Community Background
Community Name: Suisun City   **Total Score:** 57 (Moderate)   **Land area (acres):** 3,019

Percent of Community by Modeled/Calculated Wildfire Risk Inputs

Drive Time from Fire Station

0-5 (min): 90%

5-10 (min): 8%

10-15 (min): 0%

15+ (min): 2%

Fire Department Statistics: Suisun City Fire Department

Fire Station: 47

Fulltime Firefighters: 15   On-call Firefighters: --   Volunteer Firefighters: 11

Water Tenders: 0		Wildland Engines		
Structure Engines:	Total Number:	4WD/AWD:	Brush Breaker:
Type 1: 2	Type 3: 1	1	--
Type 2: 0	Type 4: 0	0	--
Quint: 1 (100' Ladder Truck)	Type 5: 0	0	--
Port-A-Tanks: 0	Type 6: 1	1	--
Portable Pumps: 0	Type 7: 0	0	--

-

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Two or more roads in and out
- Relatively wide roads
- Relatively flat, surfaced roads
- Existing street signage is reflective
- 70–100 feet of defensible space
- Fire-resistant roofing materials
- Non-combustible siding material
- Hydrants present
- Fire access <300 feet before turnaround
- Community within 5 miles of fire station

Negative Attributes (High Scores)

- Combustible siding materials
- Structures <30 feet to slope
- Aboveground electric utilities
- Marshland vegetation prone to ignition
- Community bordered by vegetated open spaces to the east, west, and south
- Combustible fences

Suggested Mitigation Focus Area

Areas of Concern:

- Eucalyptus grove near the Suisun Slough
- McCoy Creek fuel loading
- Marshland grasses along the city's southwestern border

Fire Department and Community Concerns:

- Ignitions in vegetated areas around or within residential tracts
- The recommendation for a consolidation of fire and EMS services
- Vegetated areas along the southern and eastern perimeters of the city

Recommendations:

- See Appendix J for countywide measures
- Educate homeowners on defensible space and home hardening measures
- Focus attention on high-density housing developments that could cause house-to-house ignitions
- Carry out and maintain vegetation clearance along driveways
- Regular mowing and vegetation management around perimeters of open space areas and marshlands, with a focus on areas that interface residential property
- Regular monitoring and maintenance of utility ROW
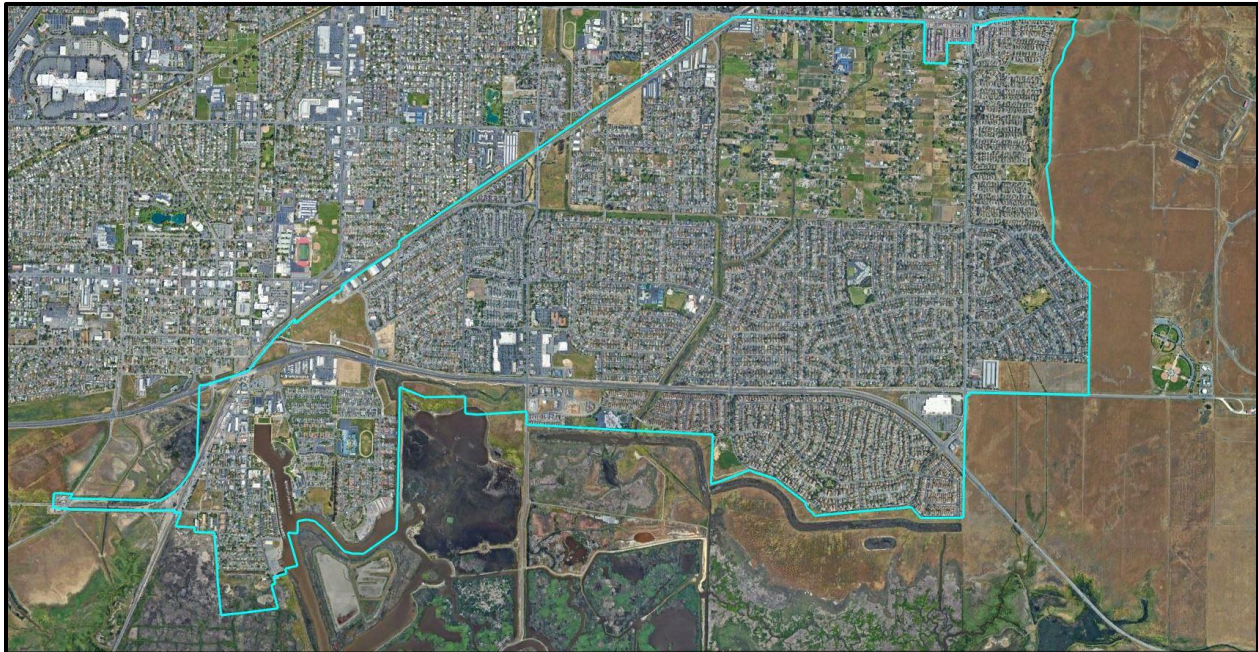
Figure C.17. Suisun City Source: Google Earth. Acquisition date: 04/2022
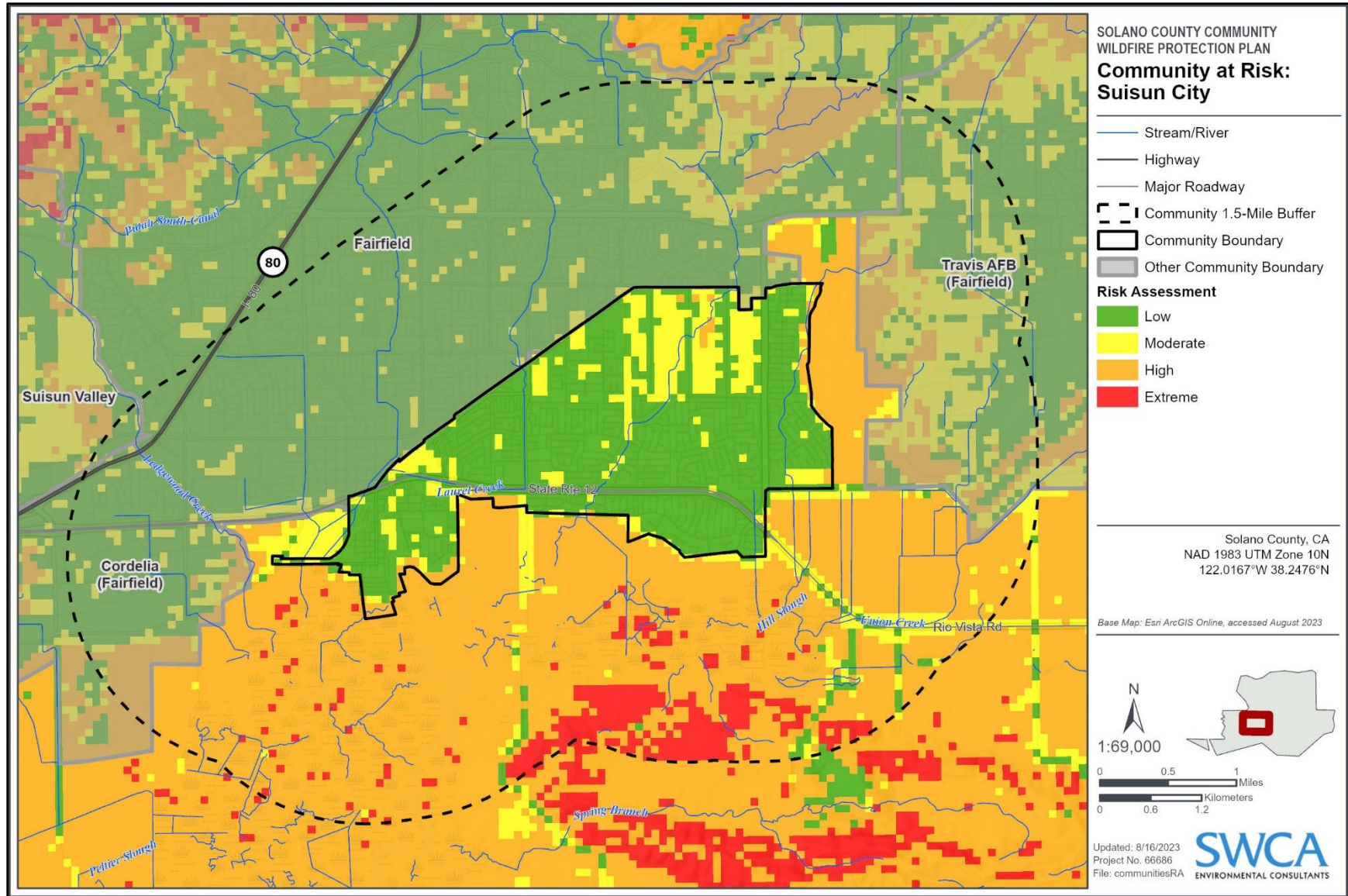
Figure C.18. Risk assessment detail for Suisun City

Suisun Valley Community Summary Statistics

Community Background

Community Name: Suisun Valley   **Total Score:** 76 (High)   **Land area (acres):** 10,860

Percent of Community by Modeled/Calculated Wildfire Risk Inputs

Drive Time from Fire Station

0-5 (min): 22%

5-10 (min): 41%

10-15 (min): 3%

15+ (min): 34%

Fire Department Statistics: Suisun Fire Protection District

Fire Stations: 32 and 33

Fulltime Firefighters: 2   On-call Firefighters: --   Volunteer Firefighters: 36

Water Tenders: 2 (Type 1)   Wildland Engines

Structure Engines:	Total Number:	4WD/AWD:	Brush Breaker:
Type 1: 2	Type 3: 1	1	--
Type 2: 1	Type 4: --	--	--
Quint:	Type 5: 3	3	--
Port-A-Tanks: 2	Type 6: 3	3	--
Portable Pumps: 7	Type 7: --	--	--

-

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Surfaced, low-grade roads
- Existing street signage is reflective
- Fire-resistant roofing material
- Fire-resistant siding material

Negative Attributes (High Scores)

- One road in and out
- Limited turnarounds
- Road width is <20 feet
- Fire access no turnarounds >300 feet
- Limited defensible space around structures
- History of high fire occurrence
- Community >5 miles from fire station
- Combustible decks/fences
- Aboveground electric utilities

Suggested Mitigation Focus Area

Areas of Concern:

- Twin Sisters, Suisun Valley, Cement Hill
- Marshlands

Fire Department and Community Concerns:

- Old equipment
- Steep topography
- Communication dead spots in the WUI
- The recommendation for
    - Community education and involvement in mitigation
    - Consolidation of fire and EMS services
    - Seasonal staff for wildland operations

Recommendations:

- See Appendix J for countywide measures
- Equipment inventory and replacement plan
- Assess communications and develop fire response communications plan
- Educate homeowners on defensible space and home hardening measures
- Carry out and maintain vegetation clearance along driveways and narrow roadways
- Assess feasibility for alternative egress routes for dead ends
- Develop and maintain WUI fuel break along western perimeter, with sufficient dimensions to accommodate slope impacts on fire spread
- Regular monitoring and maintenance of utility ROW

Figure C.19. Suisun Valley community. The standard cardinal direction (north) has been changed to capture sufficient community detail. Source: Google Earth. Acquisition date: 04/2022

Figure C.20. Risk assessment detail for Suisun Valley community

Vacaville Summary Statistics

Community Background

Community Name: Vacaville   **Total Score:** 80 (High)   **Land area (acres):** 24,761

Percent of Community by Modeled/Calculated Wildfire Risk Inputs

Drive Time from Fire Station

0-5 (min): 61%

5-10 (min): 29%

10-15 (min): 10%

15+ (min): 0%

Fire Department Statistics: Vacaville Fire Department

Fire Stations: 71, 72, 73, 74, and 75

Fulltime Firefighters: 26   On-call Firefighters: 0   Volunteer Firefighters: 0

Water Tenders: --   Wildland Engines

Structure Engines:		Total Number:	4WD/AWD:	Brush Breaker:
Type 1: 5		Type 3: 2	2	--
Type 2: 0		Type 4: --	--	--
Quint: --		Type 5: 3	3	--
Port-A-Tanks: 1		Type 6: --	--	--
Portable Pumps: 2		Type 7: --	--	--

-

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Relatively flat, surfaced roads
- Existing street signage is reflective
- Fire-resistant roofing materials
- Fire-resistant siding materials
- Hydrants present

Negative Attributes (High Scores)

- One road in and out
- Road width is <20 feet wide
- Fire access <300 feet no turnaround
- Many areas are accessible via one road only - potential for choke points.
- Lots of dead and downed logs in creeks and ditches
- Limited to no defensible space around structures
- History of high fire occurrence
- Combustible deck/fences, <30 feet to the slope
- Aboveground electric utilities

Suggested Mitigation Focus Area

Areas of Concern:

- Gibson Canyon, Alamo Canyon, Lagoon Valley, Jepson Parkway
- Riparian corridors

Fire Department and Community Concerns:

- Fires from unauthorized encampments
- Coordination with Vacaville Fire Protection District
- Communication dead spots in the WUI
- The recommendationneed for
  - A prescribed burn association
  - Consolidation of fire and EMS services
  - A county fire marshal to enforce countywide defensible space
  - Community education and involvement in mitigation
  - Home hazard inspections
  - A robust countywide weed abatement program

Recommendations:

- See Appendix J for countywide measures
- Initiate parcel level structural hazard assessment program
- Educate homeowners on defensible space and home hardening measures
- Focus attention on high-density housing developments that could cause house-to-house ignitions
- Carry out and maintain vegetation clearance along driveways and roadways
- Assess feasibility for alternative egress routes
- Develop and maintain a WUI fuel break along western perimeter, with sufficient dimensions to accommodate slope impacts on fire spread
- Utilize successful models for a prescribed burn association
- Implement outreach initiative to encourage community preparedness with focus on evacuation
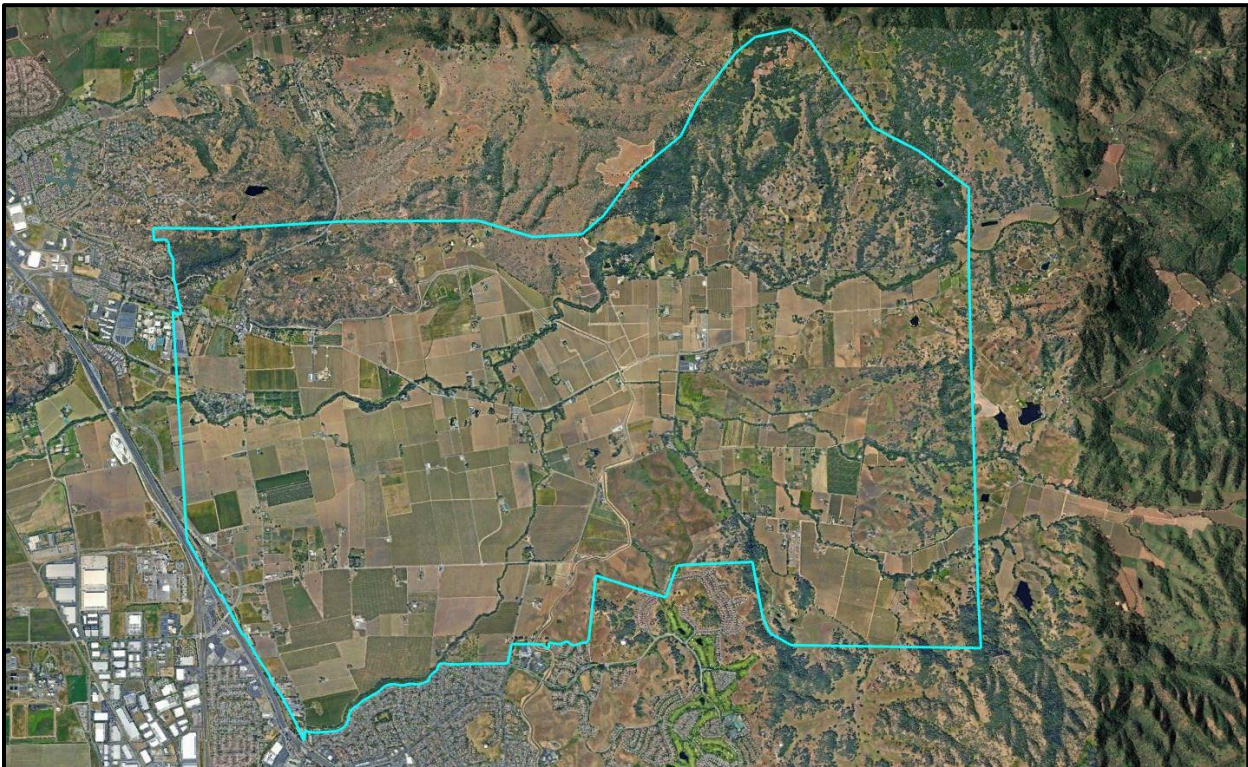- Regular monitoring and maintenance of utility ROW
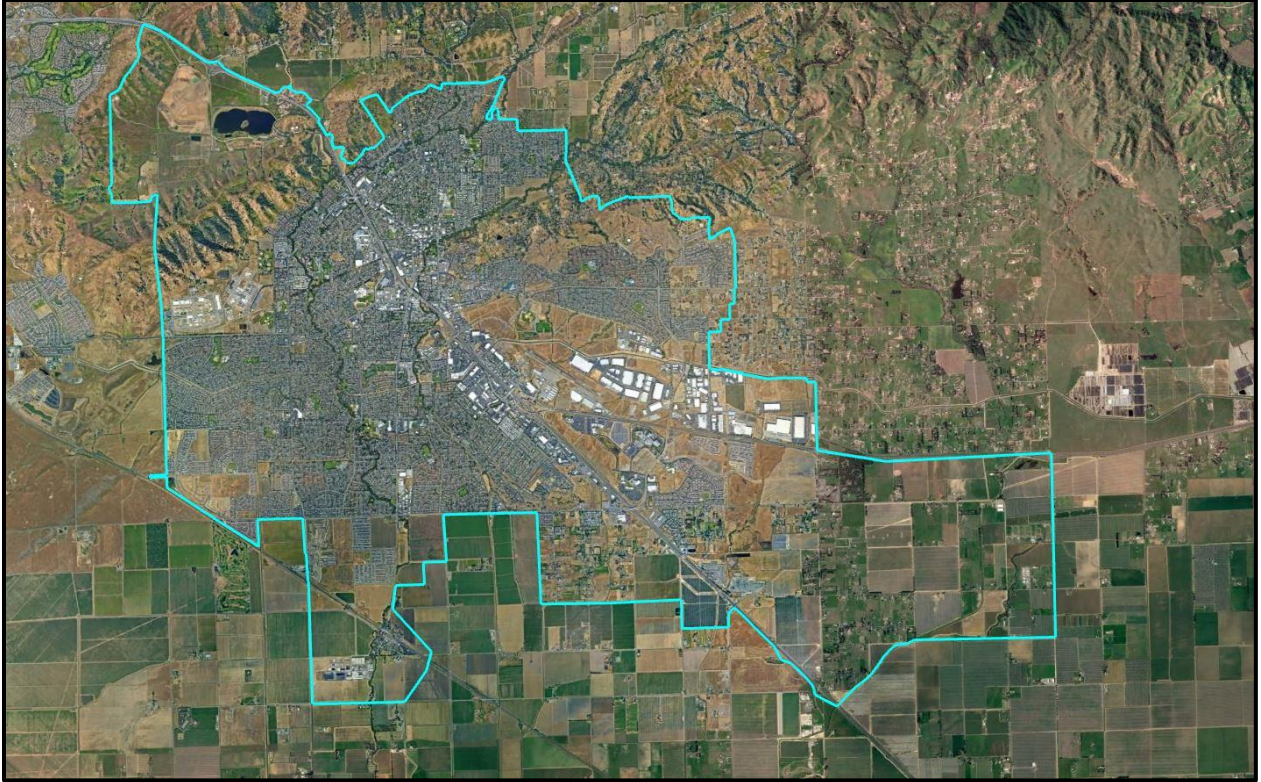
Figure C.21. City of Vacaville. The standard cardinal direction (north) has been changed to capture sufficient community detail. Source: Google Earth. Acquisition date: 04/2022
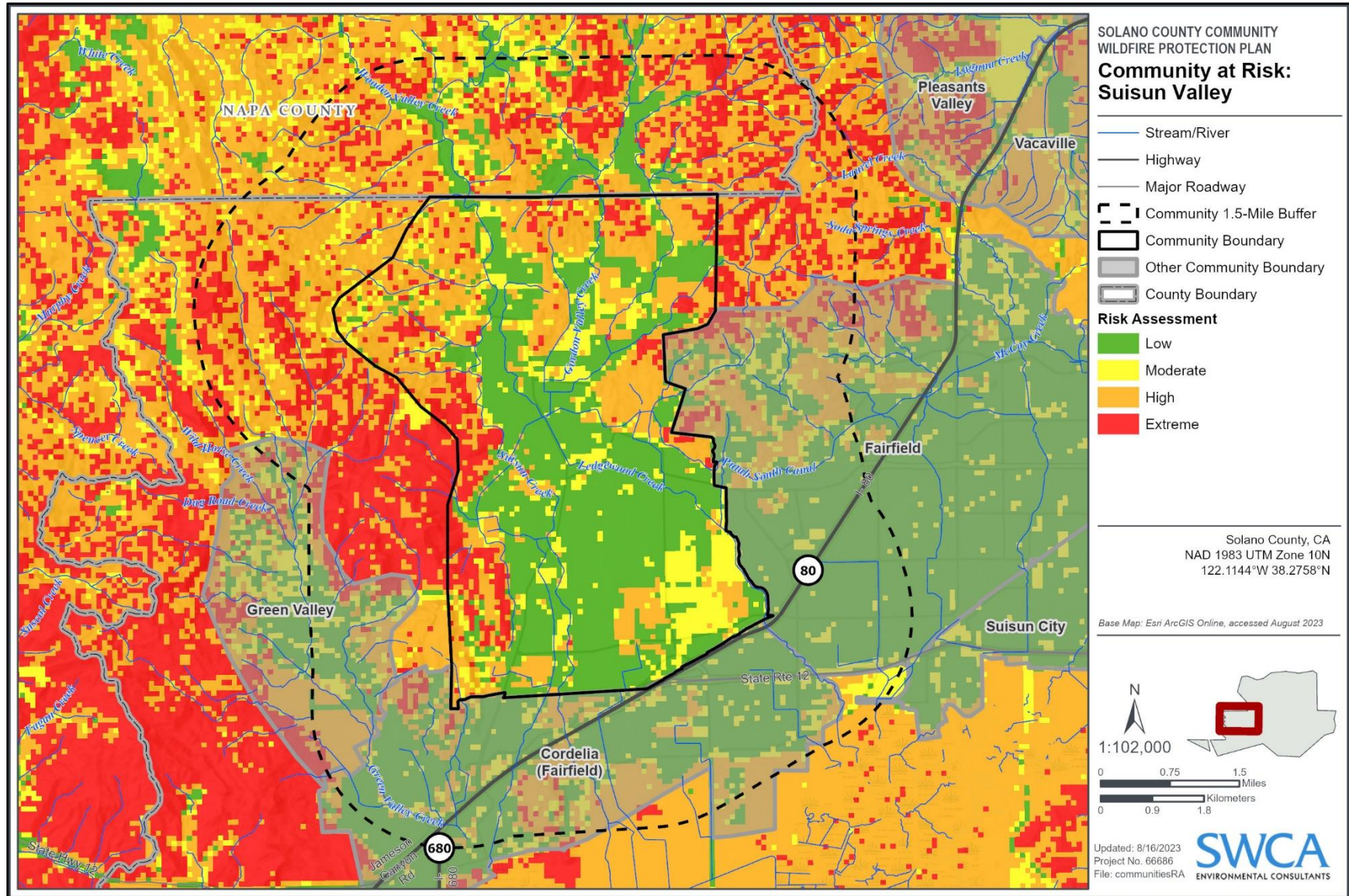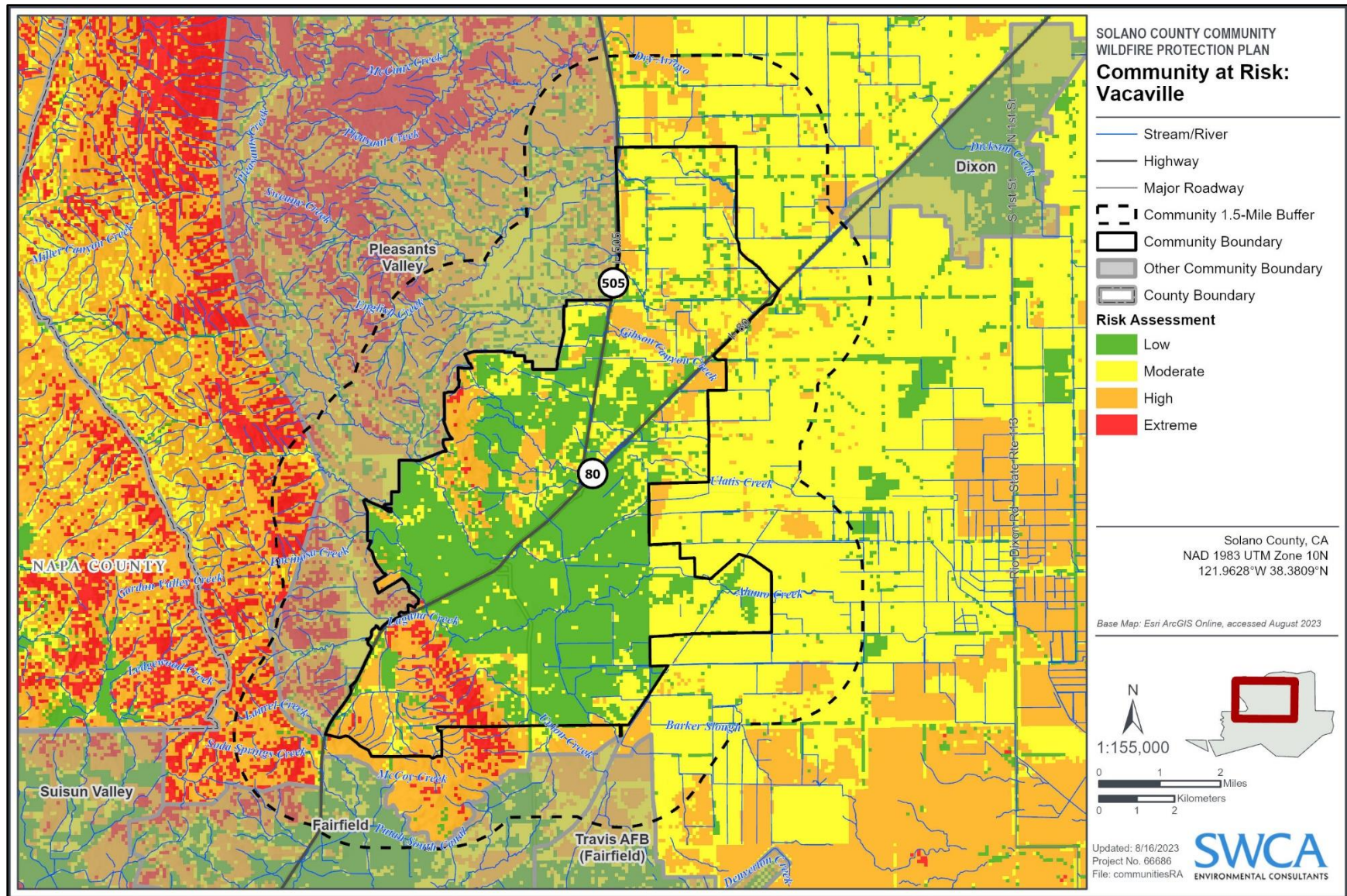
Figure C.22. Risk assessment detail for city of Vacaville

Vallejo Summary Statistics

Community Background

Community Name: Vallejo   **Total Score:** 93 (High)   **Land area (acres):** 20,846

Percent of Community by Modeled/Calculated Wildfire Risk Inputs

Drive Time from Fire Station

0-5 (min): 60%

5-10 (min): 22%

10-15 (min): 11%

15+ (min): 7%

Fire Department Statistics: Vallejo Fire Department

Fire Stations: 8

Fulltime Firefighters: 80   On-call Firefighters: 0   Volunteer Firefighters: 0

Water Tenders: 0   Wildland Engines

Structure Engines:		Total Number:	4WD/AWD:	Brush Breaker:
Type 1: 9		Type 3: 1	1	0
Type 2: 0		Type 4: 0	0	0
Quint: 1		Type 5: 7	7	0
Port-A-Tanks: 1		Type 6: 0	0	0
Portable Pumps: 1		Type 7: 0	0	0

-

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Wide roads >24 feet
- Surfaced, low-grade roads
- Fire access <300 feet with turnaround
- Existing street signage is reflective
- Fire-resistant roofing materials
- Fire-resistant siding materials
- Good separation from slope
- Water tanks present
- Good water sources

Negative Attributes (High Scores)

- One road in and out (two lanes on each side that merges into one at entrance/exit)
- Many cul-de-sacs and dead ends
- No fuel break around community
- Topographic features – communities situated between rolling hills with grassland
- Community >5 miles from fire station
- <30 feet of defensible space around structures
- Combustible fences

Suggested Mitigation Focus Area

Areas of Concern:

- Glen Cove, Hiddenbrooke
- SRA land to the east

Fire Department and Community Concerns:

- Ingress and egress
- Evacuation signage
- Steep terrain in some areas
- Vegetated, open areas with complex topography in the northwest
- The recommendation for:
  - Vegetation management and fire inspectors
  - Consolidation of fire and EMS services

Recommendations:

- See Appendix J for countywide measures
- Educate homeowners on defensible space and home hardening measures
- Focus attention on high-density housing developments that could cause house-to-house ignitions
- Carry out and maintain vegetation clearance along driveways and roadways
- Assess feasibility for alternative egress routes
- Develop and maintain WUI fuel break along northeast perimeter, with sufficient dimensions to accommodate slope impacts on fire spread
- Implement outreach initiative to encourage community preparedness with focus on evacuation
- Regular monitoring and maintenance of utility ROW

Figure C.23. City of Vallejo. Source: Google Earth. Acquisition date: 02/2022
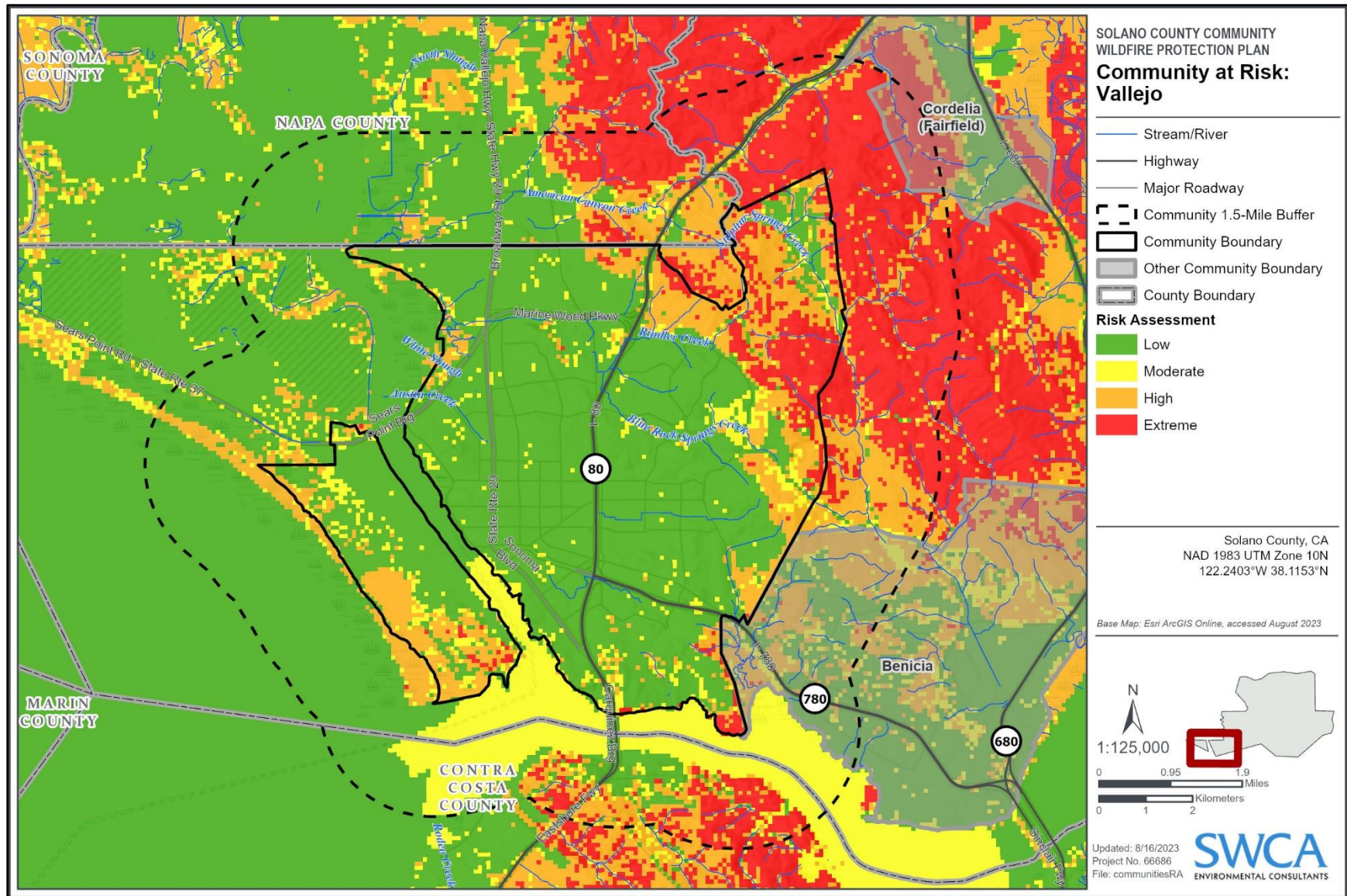
Figure C.24. Risk assessment detail for city of Vallejo

APPENDIX D :

National Fire Protection Association 1144 Assessment Form

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D.1 NATIONAL FIRE PROTECTION ASSOCIATION 1144 ASSESSMENT FORM

This appendix provides a template form for carrying out structural hazard assessments in the planning area.

SWCA – 1144 Assessment		
Community		Notes:
Surveyor		
Survey Date/Time		
Means of Access		
Ingress and Egress		
2 or more roads in and out score | 0		
1 road in and out | 7		
Road Width		
> 24 ft | 0		
> 20 ft < 24 ft | 2		
< 20 ft | 4		
Road Conditions		
Surfaced road, grade < 5% | 0		
Surfaced road, grade > 5% | 2		
Non-surfaced road, grade < 5% | 2		
Non-surfaced road, grade > 5% | 5		
Other than all season | 7		
Fire Access		
< 300 ft with turnaround | 0		
> 300 ft with turnaround | 2		
< 300 ft with no turnaround | 4		
> 300 ft with no turnaround | 5		
Street Signs		
Present – reflective | 0		
Present – non-reflective | 2		
Not present | 5		
Notes:		
Vegetation (Fuel Models)		
Predominant Vegetation		
Primary Predominant Vegetation		

Non-Burnable (NB) Score | 2	
Grass (GR) Score | 5	
Grass-Shrub (GS) Score | 10	
Shrub (SH) Score | 15	
Timber-Understory (TU) Score | 20	
Timber-Litter (TL) Score | 25	
Slash-Blow (TU) Score | 30	
Notes:	
Defensible Space	
> 100 ft around structure | 1	
> 70 ft < 100 ft around structure | 3	
> 30 ft < 70 ft around structure | 10	
< 30 ft around structure | 25	
Topography Within 300 ft of Structures	
Slope	
< 9% | 1	
10% to 20% | 4	
21% to 30% | 7	
31% to 40% | 8	
>41% | 10	
Additional Rating Factors (rate all that apply)	
Topographic features | 1-5	
History of high fire occurrence | 1-5	
Severe fire weather potential | 1-5	
Separation of adjacent structures | 1-5	
Notes:	
Roofing Assembly	
Roofing	
Class A - metal roof, clay/concrete tiles, slate, asphalt shingles | 0	
Class B - pressure treated composite shakes and shingles | 3	
Class C - untreated wood shingle, plywood, particle board | 15	
Unrated - Extremely poor roofing conditions | 25	
Notes:	

Building Construction	
Siding Materials (predominant)	
Non-combustible (brick/concrete) | 5	
Fire Resistive (stucco/adobe) | 10	
Combustible (wood or vinyl) | 12	
Deck and fencing (predominant)	
No deck or fence/noncombustible | 0	
Combustible deck and fence | 5	
Building Set-Back	
> 30 ft to slope | 1	
< 30 ft to slope | 5	
Notes:	
Available Fire Protection	
Water Sources	
Water Source? | yes/no	
Water Source Type | hydrant, water tank, other	
Other Water Source	
Water Source Score | Hydrant = 1 Water Tank = 3	
Organized Response	
Station < 5 mi from community | 1	
Station > 5 mi from community | 3	
Notes:	
Placement of Gas and Electric Utilities	
Both underground | 0	
One above, one below | 3	
Both above ground | 5	
Values at Risk Observations	
Forest Health Observations	
Land Use Observations	

Misc Observations			
Total			
Hazard Rating Scale	**<40 Low**	**>40 Moderate**	**>70 High**	**>112 Extreme**

APPENDIX E :

Funding Sources

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E.1 POTENTIAL FUNDING SOURCES

This appendix provides information on federal, state, and private funding opportunities which may be available for conducting wildfire mitigation projects. Many of the potential funding sources are referenced in the recommendation matrices in Appendix J.

E.1.1 FEDERAL FUNDING INFORMATION

Source: 2022 Infrastructure Investments and Jobs Act

Agency: Multiple

Website: https://www.congress.gov/bill/117th-congress/house-bill/3684

Eligible Applicants: Local governments, tribes, and non-profits organizations

Description: The Infrastructure Investments and Jobs Act allocated funding through various departments for infrastructure projects including, but not limited to, roads, bridges, and major projects; passenger and freight rail; highway and pedestrian safety; public transit; broadband; ports and waterways; airports; water infrastructure; power and grid reliability and resiliency; resiliency, including funding for coastal resiliency, ecosystem restoration, and weatherization; clean school buses and ferries; electric vehicle charging; addressing legacy pollution by cleaning up brownfield and Superfund sites and reclaiming abandoned mines; and Western Water Infrastructure.

Specifically, the Community Wildfire Defense Grant Program is a $1 billion program for which the U.S. Department of Agriculture (USDA) provides grants to communities at risk from wildfire to develop or revise their community wildfire protection plans and carry out projects described within those plans. It will include a mix of formula and competitive funds.

Section 40803 addresses wildfire risk reduction, section 40804 deals with ecosystem restoration, section 40806 handles the establishment of fuel breaks in forests and other wildland vegetation, and section 70302 addresses reforestation. To learn more about the Act, please see the guidebook located here: https://www.whitehouse.gov/wp-content/uploads/2022/05/BUILDING-A-BETTER-AMERICA-V2.pdf.

Source: Access to Ancestral Lands Grant Opportunity

Agency: First Nations Development Institute

Website: https://www.firstnations.org/

Eligible Applicants: Tribes or tribally controlled non-profit organizations

Description: For more than 41 years, First Nations Development Institute (First Nations), a Native-led 501(c)(3) nonprofit organization, has worked to strengthen American Indian economies to support healthy Native communities by investing in and creating innovative institutions and models that strengthen asset control and support economic development for American Indian people and their communities. First Nations began its national grantmaking program in 1993. Through mid-year 2021, First Nations has successfully managed 2,276 grants totaling more than $46 million to tribal and community institutions across Indian Country. The California Tribal Fund was created to support California-based, California-Native-led nonprofits and tribal programs in controlling and protecting their food systems, water, languages, traditional ecological knowledge, and land.

Currently, the fund is operated as a project of First Nations Development Institute. Additional information regarding this grant opportunity is located here: https://www.firstnations.org/rfps/california-tribal-fund-access-to-ancestral-lands-grant-opportunity/

Source: Building Resilient Infrastructure and Communities (BRIC) Grant Program

Agency: Federal Emergency Management Agency (FEMA)

Website: https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities

Eligible Applicants: States, local communities, tribes, and territories

Description: BRIC supports states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. The BRIC program guiding principles are supporting communities through capability- and capacity-building; encouraging and enabling innovation; promoting partnerships; enabling large projects; maintaining flexibility; and providing consistency. You can find more information on the BRIC program here: https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities

Source: Hazard Mitigation Grant Program (HMGP)

Agency: Federal Emergency Management Agency (FEMA)

Website: https://www.fema.gov/grants/mitigation/hazard-mitigation

Eligible Applicants: State, local, tribal, or territorial governments

Description: The HMGP provides funding to state, local, tribal, or territorial governments (and individuals or businesses if the community applies on their behalf) to rebuild with the intentions to mitigate future losses due to potential disasters. This grant program is available after a presidentially declared disaster.

Source: Hazard Mitigation Grant Program (HMGP) – Post Fire

Agency: Federal Emergency Management Agency (FEMA)

Website: https://www.fema.gov/grants/mitigation/post-fire

Eligible Applicants: Local communities, tribes, and territories

Description: The HMGP Post Fire grant program provides assistance to communities for the purpose of implementing hazard mitigation measures following a wildfire. Mitigation measures may include soil stabilization, flood diversion, or reforestation.

Source: Flood Mitigation Assistance Grant Program

Agency: Federal Emergency Management Agency (FEMA)

Website: https://www.fema.gov/grants/mitigation/floods

Eligible Applicants: States, local communities, federally recognized tribes, and territories

Description: The Flood Mitigation Assistance Grant Program is a competitive grant program that provides funding to states, local communities, federally recognized tribes, and territories. Funds can be used for projects that reduce or eliminate the risk of repetitive flood damage to buildings insured by the National Flood Insurance Program. FEMA chooses recipients based on the applicant's ranking of the project and the eligibility and cost-effectiveness of the project.

Source: **Emergency Management Performance Grant**

Agency: Federal Emergency Management Agency (FEMA)

Website: https://www.fema.gov/grants/preparedness/emergency-management-performance

Eligible Applicants: State, local, tribal, and territorial emergency management agencies

Description: The Emergency Management Performance Grant (EMPG) provides state, local, tribal and territorial emergency management agencies with the resources required for implementation of the National Preparedness System and works toward the National Preparedness Goal of a secure and resilient nation. The EMPG's allowable costs support efforts to build and sustain core capabilities across the prevention, protection, mitigation, response and recovery mission areas.

Source: **Fire Management Assistance Grant**

Agency: Federal Emergency Management Agency (FEMA)

Website: https://www.fema.gov/assistance/public/fire-management-assistance

Eligible Applicants: State, local, and tribal governments

Description: The Fire Management Assistance Grant is available to state, local, and tribal governments for the mitigation, management, and control of fires on publicly or privately owned forests or grasslands, which threaten such destruction as would constitute a major disaster. Eligibility is based on specific pre-established cost thresholds.

The Fire Management Assistance declaration process is initiated when a state submits a request for assistance to the FEMA Regional Director at the time a "threat of major disaster" exists. The entire process is accomplished on an expedited basis and a FEMA decision is rendered in a matter of hours

Source: **Regional Catastrophic Preparedness Grants**

Agency: Federal Emergency Management Agency (FEMA)

Website: https://www.fema.gov/grants/preparedness/regional-catastrophic

Eligible Applicants: States, and local governments

Description: The Regional Catastrophic Preparedness Grant Program (RCPGP) plays an important role in the implementation of the National Preparedness System. RCPGP supports the building of core capabilities essential to achieving the National Preparedness Goal of a secure and resilient nation by providing resources to close known capability gaps in Housing and Logistics and Supply Chain Management, encouraging innovative regional solutions to issues related to catastrophic incidents, and building on existing regional efforts.

Source: **Emergency Forest Restoration Program (EFRP)**

Agency: USDA Farm Service Agency

Website: https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/emergency-forest-restoration/index

Eligible Applicants: Owners of private forests (non-industrial)

Description: The Emergency Forest Restoration Program (EFRP) authorizes payments to owners of non-industrial, private forests restore the health of forests damaged by natural disasters. Eligible

practices may include debris removal, such as down or damaged trees; site preparation, planting materials, and labor to replant forest stands; restoration of forestland roads, fire lanes, fuel breaks, or erosion-control structures; fencing, tree shelters; wildlife enhancement.

To be eligible for EFRP, the land must have existing tree cover; and be owned by any nonindustrial private individual, group, association, corporation, or other private legal entity.

Source: Emergency Conservation Program

Agency: USDA Farm Service Agency

Website: https://www.fsa.usda.gov/programs-and-services/conservation-programs/emergency-conservation/index

Eligible Applicants: Farmers and ranchers

Description: The Emergency Conservation Program provides funding to farmers and ranchers to repair farmland damaged by natural disasters or to install methods for water conservation during periods of severe drought. The grant could be used for restoring conservation structures (waterways, diversion ditches, buried irrigation mainlines, and permanently installed ditching system).

Source: Environmental Quality Incentives Program (EQIP)

Agency: Natural Resources Conservation Service (NRCS)

Website: https://www.nrcs.usda.gov/programs-initiatives/eqip-environmental-quality-incentives

Eligible Applicants: Farmers, ranchers, and forest landowners

Description: The Environmental Quality Incentives Program (EQIP) is a voluntary program authorized under the Agricultural Act of 2014 (2014 Farm Bill) that helps farmers, ranchers, and forest landowners who own or rent agricultural land to implement practices and/or install measures to protect soil, water, plant, wildlife, and other natural resources while ensuring sustainable production on their farms, ranches, and working forest lands.

California EQIP ranking pools include Catastrophic Fire Recovery and Forest Tree Mortality.

Source: Emergency Watershed Protection (EWP) Program

Agency: Natural Resources Conservation Service (NRCS)

Website: https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/

Eligible Applicants: State, local, and tribal governments

Description: The Emergency Watershed Protection (EWP) Program offers technical and financial assistance to help local communities relieve imminent threats to life and property caused by floods, fires, windstorms and other natural disasters that impair a watershed. EWP does not require a disaster declaration by federal or state government officials for program assistance to begin. The NRCS State Conservationist can declare a local watershed emergency and initiate EWP program assistance in cooperation with an eligible sponsor (see the Eligibility section below). NRCS will not provide funding for activities undertaken by a sponsor prior to the signing of a cooperative

agreement between NRCS and the sponsor. **Source: Funding for Fire Departments and First Responders**

Agency: U.S. Fire Administration (USFA)

Website: https://www.usfa.fema.gov/a-z/grants/

Eligible Applicants: Fire response agencies

Description: Includes grants and general information on financial assistance for fire departments and first responders. Programs include the Assistance to Firefighters Grant Program, Reimbursement for Firefighting on Federal Property, State Fire Training Systems Grants, and National Fire Academy Training Assistance.

Source: Tribal Environmental General Assistance Program

Agency: U.S. Environmental Protection Agency (EPA)

Website: https://www.epa.gov/tribal-pacific-sw/epa-region-9-tribal-environmental-gap-funding

Eligible Applicants: Tribal governments and intertribal consortia

Description: Funding under this program is used to aid Native American tribes in establishing and implementing their own reservation-specific environmental protection programs. To find out more about this funding opportunity please contact Tribal Branch Manager, Rubén Mojica Hernandez, at mojica-hernandez.ruben@epa.gov.

Source: Specific EPA Grant Programs

Agency: Environmental Protection Agency (EPA)

Website: https://www.epa.gov/grants/specific-epa-grant-programs

Eligible Applicants: State, local, and tribal governments, businesses, students, and more

Description: Various grant programs are listed under this site.

Examples of the types of grants found at this site are:

- Multipurpose Grants to States and Tribes: https://www.epa.gov/grants/multipurpose-grants-states-and-tribes
- Environmental Education Grants: https://www.epa.gov/education/grants
- Environmental Justice Grants: https://www.epa.gov/environmentaljustice/environmental-justice-grants-funding-and-technical-assistance

Source: Conservation Innovation Grant (CIG)

Agency: Natural Resources Conservation Service (NRCS)

Website: https://www.nrcs.usda.gov/programs-initiatives/cig-conservation-innovation-grants

Eligible Applicants: Private landowners

Description: Conservation Innovation Grants (CIG) is a competitive program that supports the development of new tools, approaches, practices, and technologies to further natural resource conservation on private lands. Through creative problem solving and innovation, CIG partners work to address our nation's water quality, air quality, soil health and wildlife habitat challenges, all while improving agricultural operations.

Source: **Urban and Community Forestry Program, National Urban and Community Forestry Challenge Cost Share Grant Program**

Agency: U.S. Forest Service (USFS)

Website: https://www.fs.usda.gov/managing-land/urban-forests/ucf

Eligible Applicants: State partners and community tree groups

Description: USFS funding will provide for Urban and Community Forestry Programs that work with local communities to establish climate-resilient tree species to promote long-term forest health. The other initiative behind this program is to promote and carry out disaster risk mitigation activities, with priority given to environmental justice communities. For more information, contact a USFS Regional Program Manager.

Source: **Catalog of Federal Funding Sources; Land Resources**

Agency: Multiple

Website: https://ordspub.epa.gov/ords/wfc/f?p=165:512:10535656593775:::512::

Eligible Applicants: Suitable applicants vary

Description: The Land Finance Clearing House is a catalogue of federal funding sources for all things land related.

Examples of the types of grants found at this site are:

- Forest and Woodlands Resource Management Grant: https://sam.gov/fal/a798ad78cac749639b48270db3e86fdc/view?index=cfda&page=2&organization_id=100011100

- Environmental Education Grant Program: https://www.epa.gov/education/grants

- Public Assistance Grant Program: https://www.fema.gov/assistance/public

- Hazard Mitigation Grant Program: https://www.fema.gov/grants/mitigation/hazard-mitigation

Source: **Catalog of Federal Funding Sources; Water Resources**

Agency: Multiple

Website: https://ofmpub.epa.gov/apex/wfc/f?p=165:12:6483383318137:::12::

Eligible Applicants: Suitable applicants vary

Description: The Water Finance Clearing House is a catalogue of federal funding sources for all things water related.

Examples of the types of grants found at this site are:

- Water Conservation Field Services Program: https://www.usbr.gov/waterconservation/

- California Community Development Block Grant: https://www.grants.ca.gov/grants/community-development-block-grant-cdbg/

- California Clean Water State Revolving Fund Program: https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/index.html

Source: Firewise Communities

Agency: Multiple

Website: http://www.firewise.org

Description: Many different Firewise Communities activities are available to help homes and whole neighborhoods become safer from wildfire without significant expense. Community cleanup days, awareness events, and other cooperative activities can often be successfully accomplished through partnerships among neighbors, local businesses, and local fire departments at little or no cost.

Individual and neighborhood activities such as tree thinning, pruning, removal, and clearing; roof or siding retrofit to noncombustible materials; managing private forests, community slash pickup or chipping; access and egress improvement or creation; firefighting water supply improvement; and public education may benefit from seed funding or additional assistance from an outside source.

Source: National Fire Plan

Agency: U.S. Department of the Interior and USDA

Website: http://www.forestsandrangelands.gov/

Eligible Applicants: Professionals, businesses, communities, and interested organizations and individuals

Description: Many states are using funds from the National Fire Plan to provide funds through a cost-share with residents to help them reduce the wildfire risk to their private property. These actions are usually in the form of thinning or pruning trees, shrubs, and other vegetation and/or clearing the slash and debris from this kind of work. Opportunities are available for rural, state, and volunteer fire assistance.

Source: Staffing for Adequate Fire and Emergency Response (SAFER)

Agency: Federal Emergency Management Agency (FEMA)

Website: https://www.fema.gov/grants/preparedness/firefighters/safer

Eligible Applicants: Fire departments and volunteer firefighter interest organizations

Description: The purpose of SAFER grants is to help fire departments increase the number of frontline firefighters. The goal is for fire departments to increase their staffing and deployment capabilities and ultimately attain 24-hour staffing, thus ensuring that their communities have adequate protection from fire and fire-related hazards. The SAFER grants support two specific activities: 1) hiring of firefighters and 2) recruitment and retention of volunteer firefighters. The program provides grants to pay for a portion of the salaries of newly hired firefighters over the 5-year program.

Source: Fire Prevention and Safety (FP&S) Grant Program

Agency: Federal Emergency Management Agency (FEMA)

Website: https://www.fema.gov/grants/preparedness/firefighters/safety-awards

Eligible Applicants: Firefighting agencies and fire safety project coordinators

Description: The FP&S Grant Program offers support to projects that enhance the safety of the public and firefighters who may be exposed to fire and related hazards. The primary goal is to

target high-risk populations and mitigate high incidences of death and injury. Examples of the types of projects supported by FP&S grants include fire-prevention and public-safety education campaigns, juvenile fire-setter interventions, media campaigns, and arson prevention and awareness programs. In fiscal year 2005, Congress reauthorized funding for FP&S grants and expanded the eligible uses of funds to include firefighter safety research and development.

Source: Federal Excess Personal Property

Agency: U.S. Forest Service (USFS)

Website: https://www.fs.usda.gov/managing-land/fire/fepp

Eligible Applicants: State foresters and cooperators

Description: The Federal Excess Personal Property program refers to USFS-owned property that is on loan to state foresters for the purpose of wildland and rural firefighting. Most of the property originally belonged to the Department of Defense. Once acquired by the USFS, it is loaned to state cooperators for firefighting purposes. The property is then loaned to the state forester, who may place it with local departments to improve local fire programs. State foresters and the USFS have mutually participated in the Federal Excess Personal Property program since 1956.

Source: Assistance to Firefighters Grants

Agency: Federal Emergency Management Agency (FEMA)

Website: https://www.fema.gov/grants/preparedness/firefighters

Eligible Applicants: Fire departments and firefighting agencies

Description: The Assistance to Firefighters Grants program provides resources to assist fire departments in attaining critical resources such as training and equipment.

Source: Community Wildfire Defense Grant

Agency: U.S. Forest Service (USFS)

Website: https://www.fs.usda.gov/managing-land/fire/grants

Eligible Applicants: At-risk local communities and Tribes

Description: The Community Wildfire Defense Program, or CWDG, is intended to help at-risk local communities and Tribes; plan for and reduce the risk of wildfire. The program, which was authorized by the Bipartisan Infrastructure Law, prioritizes at-risk communities in an area identified as having high or very high wildfire hazard potential, are low-income, or have been impacted by a severe disaster that affects the risk of wildfire by providing funding to communities for two primary purposes: development and revision of Community Wildfire Protection Plans (CWPP) and implementation of projects described in a CWPP that is less than ten years old. The Community Wildfire Defense Grant Program also helps communities in the wildland urban interface (WUI) implement the three goals of the National Cohesive Wildland Fire Management Strategy: Restore and Maintain Landscapes; Create Fire Adapted Communities; and Improve Wildfire Response.

E.1.2   STATE FUNDING INFORMATION

Source: CAL FIRE Grant Programs

Agency: CAL FIRE

Website: https://www.fire.ca.gov/grants/

Eligible Applicants: Suitable applicants vary

Description: The CAL FIRE Grant Program offers a range of forest-related grants with differing scopes and funding details. Some of the Grants include:

1. Forest Health Grants: https://www.fire.ca.gov/what-we-do/grants/forest-health

2. California Forest Improvement Program: https://www.fire.ca.gov/what-we-do/grants/california-forest-improvement

3. Fire Prevention Grants Program: https://www.fire.ca.gov/grants/fire-prevention-grants/

4. Urban and Community Forestry Grant Programs: https://www.fire.ca.gov/what-we-do/grants/urban-and-community-forestry-grants#:~:text=The%20Urban%20and%20Community%20Forestry%20Grant%20Program%20strives,given%20to%20projects%20serving%20disadvantaged%20and%2For%20low-income%20communities.

5. Wildfire Resilience and Forestry Assistance Grant- Prop 68: Prop 68wildfire-resilience-and-forestry-assistance-p-68-grant-guidelines-final-02022020.docx (afterthefireusa.org)

Source: California Fire Safe Council Grant Programs

Agency: California Fire Safe Council

Website: https://cafiresafecouncil.org/grants-and-funding/apply-for-a-grant/

Eligible Applicants: Suitable applicants vary

Description: The California Fire Safe Council provides a range of federal, state, and private funding sources in addition to administering the USFS State Fire Assistance Grant Programs.

Source: California Environmental Protection Agency (CalEPA) Loans and Grants

Agency: Multiple

Website: https://calepa.ca.gov/loansgrants/

Eligible Applicants: Public and private entities

Description: The CalEPA Loans and Grants program hosts a wide variety of grants specifically for public and private entities. While not specific to fuel management or fire recovery, there is a wide array of funding opportunities for water and air resources which are directly impacted by wildfire.

Source: Northern California Forests and Watersheds Program

Agency: Multiple

Website: https://www.nfwf.org/programs/northern-california-forests-and-watersheds

Eligible Applicants: Suitable applicants vary, must address program priorities

Description: Funding through the Northern California Forests and Watersheds program supports a variety of grant opportunities to increase headwaters resilience, improve forest health, and recover from wildfire, for the benefit of fish and wildlife throughout these environments.

Source: Adaptation Clearinghouse

Agency: Multiple

Website: https://resilientca.org/

Eligible Applicants: Suitable applicants vary

Description: This resource has numerous wildfire-related resources such as funding opportunities, assessments, case studies, educational materials, data and tools, example plans and strategies, and additional policy guidance.

Source: California Grants Portal

Agency: Multiple

Website: https://www.grants.ca.gov/

Eligible Applicants: Suitable applicants vary

Description: The California Grants Portal helps users identify the latest grants that could support fire hazard planning or related implementation efforts that support wildfire risk mitigation, fuels management, and other related projects.

Source: California Air Resources Board Funding Wizard

Agency: Multiple

Website: https://fundingwizard.arb.ca.gov/web/

Eligible Applicants: Suitable applicants vary

Description: The Funding Wizard aggregates current federal, state, regional, private, and other funding opportunities for environmental and sustainability projects.

Source: California Grant Programs

Agency: California Fire Foundation

Website: https://www.cafirefoundation.org/programs/fireprevention/

Eligible Applicants: Suitable applicants vary

Description: The California Fire Foundation offers grant opportunities to fire departments, firefighter associations, and community-based organizations whose projects help address wildfire and disaster prevention, preparedness, relief, and recovery needs within the state of California. The California Fire Foundation directly supports high fire threat and/or under-resourced communities.

Source: Wildfire Recovery Fund

Agency: California Community Foundation

Website: https://www.calfund.org/wildfirerecoveryfund/

Eligible Applicants: California communities impacted by wildfire

Description: The Wildfire Recovery Fund supports intermediate and long-term recovery efforts for major California wildfires. The fund also supports wildfire prevention and preparedness efforts.

Since 2003, the fund has granted more than $32 million to support relief and recovery efforts in the aftermath of destructive wildfires.

E.1.3 PRIVATE FUNDING INFORMATION

Source: State Farm Good Neighbor Citizenship Grants

Agency: State Farm

Website: https://www.statefarm.com/about-us/corporate-responsibility/community-grants/good-neighbor-citizenship-grants

Description: Good Neighbor Citizenship company grants focus on safety, community development and education.

Source: Community Action Grants

Agency: The Urban Land Institute (ULI)

Website: http://www.uli.org

Eligible Applicants: Municipal, county, state, or federal government entities; non-profit organizations; educational institutions

Description: ULI is a 501(c)(3) nonprofit research and education organization supported by its members. The institute has more than 22,000 members worldwide, representing the entire spectrum of land use and real estate development disciplines, working in private enterprise and public service. The mission of the ULI is to provide responsible leadership in the use of land to enhance the total environment. ULI and the ULI Foundation have instituted Community Action Grants that may be used for Firewise Communities activities.

Source: Environmental Systems Research Institute (Esri) Grants

Agency: Environmental Systems Research Institute (Esri)

Website: http://www.esri.com/grants

Eligible Applicants: Suitable applicants vary

Description: Esri is a privately held firm and the world's largest research and development organization dedicated to geographic information systems. Esri provides free software, hardware, and training bundles under Esri-sponsored grants that include such activities as conservation, education, and sustainable development, and posts related non-Esri grant opportunities under such categories as agriculture, education, environment, fire, public safety, and more. You can register on the website to receive updates on grant opportunities.

Source: Innovative Finance for National Forests Grant Program

Agency: National Forest Foundation

Website: https://www.nationalforests.org/grant-programs/innovative-finance-for-national-forests-grant-program

Eligible Applicants: Suitable applicants vary

Description: The Innovative Finance for National Forests Grant Program aims to bring in non-USFS funds to increase forest resilience. There are three main topics for funding: Wildfire

Resilience and Recovery, Sustainable Recreation Access and Infrastructure, and Watershed Health. In addition, three types of projects are funded. Pilot Programs with on-the-ground implementation, Scaling Projects to deliver backlogs of unfunded work, and Research and Development to provide to new forest information.

Source: Matching Awards Program

Agency: National Forest Foundation

Website: https://www.nationalforests.org/grant-programs/map

Eligible Applicants: Nonprofit organizations, Tribal governments and organizations, and universities

Description: The National Forest Foundation is soliciting proposals for its Matching Awards Program to provide funds for direct on-the-ground projects benefitting America's National Forests and Grasslands. By pairing federal funds provided through a cooperative agreement with the USFS with non-federal funds raised by award recipients, the Matching Awards Program measurably multiplies the resources available to implement stewardship projects that benefit the National Forest System.

Source: Patagonia Environmental Grants and Support

Agency: Patagonia

Website: https://www.patagonia.com/how-we-fund/

Eligible Applicants: Suitable applicants vary

Description: Patagonia supports innovative work that addresses the root causes of the environmental crisis and seeks to protect both the environment and affected communities. Patagonia focuses on places where they have built connections through outdoor recreation and through their network of retail stores, nationally and internationally.

Source: Re:wild Grants

Agency: Re:wild

Website: https://www.rewild.org/

Eligible Applicants: Indigenous peoples, local communities, influential leaders, nongovernmental organizations, governments, companies

Description: The foundation supports projects around the world that build climate resiliency, protect vulnerable wildlife, and restore balance to threatened ecosystems and communities.

Source: U.S. Endowment for Forestry and Communities

Agency: EPA, NRCS, USFS, Department of Defense, U.S. Economic Development Agency

Website: https://www.usendowment.org/

Eligible Applicants: Suitable applicants vary

Description: As the nation's largest public charity dedicated to keeping our working forests working and ensuring their bounty for current and future generations, the Endowment deploys the creativity and power of markets to advance their mission: The Endowment works collaboratively with partners

in the public and private sectors to advance systemic, transformative and sustainable change for the health and vitality of the nation's working forests and forest-reliant communities.

Source: Moore Foundation Wildfire Resilience Initiative

Agency: Gordan and Betty Moore Foundation

Website: https://www.moore.org/article-detail?newsUrlName=moore-foundation-launches-new-wildfire-resilience-initiative

Eligible Applicants: Suitable applicants vary

Description: After a century of fire exclusion, ecosystems and communities across Western North America now face a growing threat from extreme wildfire. Impacts of extreme wildfire range from the erasure of ecological heterogeneity across tens of thousands of acres at a time, to the backsliding on decades of air quality public health gains, with millions of people across Western North America now annually exposed to dangerous levels of fine particulate matter. The Moore Foundation plans on investing in new systems to increase wildfire resiliency for fire-prone communities while promoting ecosystems health, fire-adapted vegetation, and other ecological co-benefits.

Source: Better Together Resilient Communities Grant Program

Agency: Pacific Gas and Electric Company (PG&E)

Website: https://www.pge.com/en_US/residential/in-your-community/local-environment/resilient-communities/resilient-communities-grant-program.page

Eligible Applicants: Governmental organizations, educational institutions, or certified 501(c)3 nonprofit organizations

Description: PG&E recognizes that California will continue to face a myriad of climate-related hazards, many of which will impact wildfire frequency and severity. PG&E is requesting proposals to fund projects that facilitate greater community-level resiliency to wildfire. Among the eligible applicants are governmental organizations, educational institutions, or certified 501(c)3 nonprofit organizations that include a local or tribal government within PG&E's service area as a partner.

E.1.4   OTHER FUNDING INFORMATION

The following resources may also provide helpful information for funding opportunities:

- Western Forestry Leadership Coalition: https://www.thewflc.org/

- USDA Information Center: https://www.nal.usda.gov/main/information-centers

- USFS Fire Management website: https://www.fs.usda.gov/managing-land/fire

- Insurance Services Office Mitigation Online (town fire ratings): http://www.isomitigation.com/

- National Fire Protection Association (NFPA): http://www.nfpa.org

- National Interagency Fire Center (NIFC), Wildland Fire Prevention/Education: https://www.nifc.gov/fire-information/fire-prevention-education-mitigation

- USFA: https://www.usfa.fema.gov/index.html

APPENDIX F :

Homeowner Resources

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F.1 HOMEOWNER'S INSURANCE

The Plan provides recommendations for mitigating wildfire hazard on a county scale; therefore, it is not used by private insurance companies to determine individual property risk because it does not address hazards at a parcel level. The intent of a CWPP is to provide broad-scale mitigation of wildfire risk to communities, which requires collaboration by government entities, landowners, and the public.

Wildfire risk reduction actions identified in this Plan (such as home hardening, creating defensible space, and community collaboration) are in alignment with the mitigation actions specified in the Safer from Wildfires initiative.

For information on how you can make your home, immediate surroundings, and community safer from wildfire, please see the following flyer from CDI. Additional information and resources can be found at Solano Fire Ready: https://www.solanocounty.com/depts/oes/grs/fire_ready/default.asp

F.2 ADDITIONAL LINKS AND RESOURCES

This appendix is included to provide resources for Plan users. This appendix can be used as a standalone document for distribution at community events or posted to agency websites.

F.2.1   CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION (CAL FIRE)

Home and Fuels Management

- Hardening Your Home: https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/hardening-your-home/
- Home Hardening Toolkit: https://www.readyforwildfire.org/campaign-toolkits/home-hardening-toolkit/
- Defensible Space: https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/defensible-space/
- Defensible Space Toolkit: https://www.readyforwildfire.org/campaign-toolkits/defensible-space-toolkit/
- Fire-Resistant Landscaping: https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/fire-resistant-landscaping/
- What Property Owners Need to Know to Reduce Wildfire Risk Each Season: https://www.readyforwildfire.org/forest-health/seasonal-actions/
- Prescribed Fire Toolkit: https://www.readyforwildfire.org/campaign-toolkits/prescribed-fires-toolkit/

Preparing for Wildfire

- Wildfire Action Plan: https://www.readyforwildfire.org/prepare-for-wildfire/get-set/wildfire-action-plan/

- How to Prepare to Evacuate From a Wildfire: https://www.readyforwildfire.org/prepare-for-wildfire/get-set/prepare-your-family/

- Pre-Evacuation Preparation Steps: https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/pre-evacuation-preparation-steps/

- Evacuation Steps: https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/evacuation-steps/

- Animal Evacuation: https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/animal-evacuation/

- GO! Evacuation Guide: https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/

- GO! Evacuation Toolkit: https://www.readyforwildfire.org/campaign-toolkits/go-evacuation-toolkit/

- Emergency Supply Kit: https://www.readyforwildfire.org/prepare-for-wildfire/get-set/emergency-supply-kit/

- Insurance Preparedness: https://www.readyforwildfire.org/prepare-for-wildfire/get-set/insurance-preparedness/

- Power Outage Information: https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/power-outage-information/

- What To Do If Trapped: https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/what-to-do-if-trapped/

Preventing Wildfire

- Equipment Use: https://www.readyforwildfire.org/prevent-wildfire/equipment-use/

- Debris Burning: https://www.readyforwildfire.org/prevent-wildfire/debris-burning/

- Vehicle Use: https://www.readyforwildfire.org/prevent-wildfire/vehicle-use/

- Campfire Safety: https://www.readyforwildfire.org/prevent-wildfire/campfire-safety/

- Target Shooting Safety: https://www.readyforwildfire.org/prevent-wildfire/target-shooting-safety/

- One Less Spark, One Less Wildfire Toolkit: https://www.readyforwildfire.org/prevent-wildfire/one-less-spark-campaign/

- Forest Health: https://www.readyforwildfire.org/forest-health/

- Forest Health Toolkit: https://www.readyforwildfire.org/campaign-toolkits/forest-health-toolkit/

After the Fire

- Returning Home After a Wildfire: https://www.readyforwildfire.org/post-wildfire/

- What to Expect After a Wildfire: https://www.readyforwildfire.org/post-wildfire/after-a-wildfire/

- Immediate Safety: https://www.readyforwildfire.org/post-wildfire/returning-home/

- Rebuilding, Mobilizing Your Community: https://www.readyforwildfire.org/post-wildfire/rebuilding/

- Who Can Help? https://www.readyforwildfire.org/post-wildfire/who-can-help/

F.2.2   NATIONAL FIRE PROTECTION ASSOCIATION:

Protecting Your Home

- Preparing Homes for Wildfire: https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Preparing-homes-for-wildfire

- Home Hardening Fact Sheets: https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Firewise-USA/Firewise-USA-Resources/Research-Fact-Sheet-Series

Preparation and Evacuation

- Wildfire Preparedness Tips: https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Wildfire-safety-tips

- Wildfire Preparedness for Household Pets: https://www.nfpa.org//-/media/Files/Public-Education/Campaigns/TakeAction/TakeActionPetsChecklist.pdf

- Wildfire Preparedness for Horses and Livestock: https://www.nfpa.org/-/media/Files/Public-Education/Campaigns/TakeAction/TakeActionHorseChecklist.ashx

- Backpack Emergency GO! Kit: https://www.nfpa.org/-/media/Files/Public-Education/Campaigns/TakeAction/TakeActionBackPackGoKit.ashx

- Outthink a Wildfire; Wildfire Action Policies: https://www.nfpa.org/wildfirepolicy

APPENDIX G :

Community Outreach and Educational Programs

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CONTENTS

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G.1 PUBLIC EDUCATION AND OUTREACH PROGRAMS

This appendix outlines existing community outreach programs and resources that can be leveraged by Plan users and agencies to maximize community engagement.

As outlined in the General Plan, it is Solano County's goal to ensure that the public is well-informed of the appropriate steps to prepare for disasters, such as wildfires, that could potentially affect the county. Solano County aims to achieve this goal by continuing to engage in educational initiatives such as school programs, public service announcements, and sponsored events (Solano County 2008).

G.1.1 LOCAL AND STATE PROGRAMS

Benicia Fire Department

The Benicia Fire Department provides a variety of educational materials and programs to improve residents' understanding of fire and how to prepare for wildfire events. Through their vegetation management program, the department runs a defensible space program with home risk assessment tools, CAL FIRE mitigation guides and checklists, and presentation recordings on the city's vegetation management plan (Benicia Fire Department 2022). The Benicia Fire Department offers Community Emergency Response Team (CERT) courses that educates and trains residents on basic emergency response skills.

Dixon Fire Department

The Dixon Fire Department has developed a community connect tool that allows residents to share information about their property, family, and additional needs that could aid firefighters in more effectively assisting them. The department hosts a fire prevention week the first week of October to provide demonstrations and educational materials (Dixon Fire Department 2021).

Fairfield Fire Department

The Fairfield Fire Department maintains multiple fire safety and prevention resources on its website in addition to in-person training. The department manages the CERT and trains participating residents in emergency preparedness. The wildfire prevention program includes disaster preparedness and home preparation guides, as well as information on Firewise USA and how communities can achieve a Firewise rating (Fairfield Fire Department 2022).

Montezuma Fire Protection District

The Montezuma Fire Protection District holds monthly commissioner's meetings to allow the public to stay up to date with important news and information regarding the fire district. The Montezuma Fire Protection District is also active on social media, where they notify the public of various safety updates and provide educative materials to prepare for potential hazards facing the community. In addition to those services, the department is also responsible for issuing burn permits, allowing residents to contribute to lowering community wildfire risk by clearing their properties of natural, dry vegetation and reduce the overall burnable fuels present throughout the county (Montezuma Fire Protection District 2023).

Rio Vista Fire Department

The Rio Vista Fire Department operates two programs to bolster community education and capacity in the case of emergencies. Like other fire departments, Rio Vista runs a CERT program with a goal of teaching basic response skills and integrating organized response assistance within communities. The department also utilizes firefighter interns to support regular crews; this program provides training and equipment to residents who have a greater interest in supporting firefighting operations (Rio Vista Fire Department 2022).

Suisun City Fire Department

The fire department website maintains emergency preparedness resources for residents and homeowners. These include a preparedness kit guide, steps for establishing a family emergency plan, and the department contact for the city CERT team. The department is responsible for organizing the CERT team (Suisun City Fire Department 2020).

Suisun Fire Protection District

The Suisun Fire Protection District is a highly engaged organization that actively participates in educating and interacting with its community. Through various educational events and presentations, the district aims to enhance the public's knowledge and awareness of fire safety and emergency response procedures. These events include community outreach programs, fire safety talks at schools and community events. By promoting fire prevention and safety practices and building relationships with residents, the Suisun Fire Protection District plays an integral role in keeping its community safe and informed.

Vacaville Fire Department

The Vacaville Fire Department is active in recruiting and training for its CERT program, which educates citizens on disaster response organization, basics of assisting emergency responders, and basic medical operations. The department also hosts an explorer program that gives teens an opportunity to learn about firefighting careers (Vacaville Fire Department 2021).

Vacaville Fire Protection District

The Vacaville Fire Protection District emphasizes public education on fire prevention, offering training programs and educational tools for weed abatement, structure inspections, and other home hardening practices. The district also carries out inspections on new construction, ensuring that the community's structures are compliant with fire-safe building requirements. Additionally, the district is responsible for conducting burn days to allow residents to burn dry vegetative waste in a controlled fashion (Vacaville Fire Protection District 2023).

Vallejo Fire Department

The Vallejo Fire Department maintains defensible space and evacuation preparation resources specific to the city to aid residents in mitigating fire on their property and planning for emergency situations. Additionally, the department can be contacted to present educational events on fire prevention and preparedness (Fire Department, City of Vallejo 2022a).

Solano Resource Conservation District

The Solano Resource Conservation District (RCD) provides a website with various resources for wildfire preparedness, how to sign up for emergency notifications, and information on post-fire recovery. Pre-emergency resources include multiple planning tools and checklists to ensure families, homes, and communities are prepared for wildfire emergencies. These include, but are not limited to, evacuation checklists, guides to aid homeowners in implementing good defensible space and home hardening, and Fire Safe Council community information. The post-fire section provides state and national resources on fire recovery best management practices from sources such as the Natural Resources Conservation Service (NRCS), and highlights restoration work following the 2020 Hennessey and Quail Fires (Solano RCD 2022).

Solano County Office of Emergency Services

The Solano County Office of Emergency Services (Solano OES) provides webpages with preparedness resources for various disaster and emergency scenarios including wildfires. General recommendations for defensible space and home hardening, such as clearing vegetation around homes and structures, are listed. OES conducts community outreach on the Alert Solano emergency notificaiton system, emergency evacuation zones, and general preparedness information through social media and community events. and emergency notification resources. Links are provided to checklists, kits, and plans to assist all residents in prepping for disaster (Multi-Jurisdictional Hazard Mitigation Plan, Solano OES 2022).

These resources and guides can be accessed at the webpage located here: https://emergency.solanocounty.com/. .

Green Valley Fire Safe Council

The Green Valley Fire Safe Council formed in 2019 with the intent of improving defensible space and providing education and actionable improvements to residents. Historically aggressive fire suppression efforts and a lack of local fuel management in the region have resulted in dense vegetation buildup. To address these risks, the Green Valley Fire Safe Council developed a wildfire preparedness action plan to identify priority mitigation strategies at 3-month to 5-year goal intervals. The action plan objectives included establishing Firewise practices, raising community awareness about wildfire risks, enhancing public education, building partnerships, increasing the number of homes with defensible space and fire-hardening, securing funding through grants, and successfully creating shaded fuel breaks on the west side of the Highlands, creating ridgetop fire breaks, and extending shaded fuel breaks northward. (Green Valley Fire Safe Council 2022;   Green Valley Fire Safe Council).

 Working in partnership with CAL FIRE and the Cordelia Fire Protection District, the Council created shaded fuel breaks and fire breaks to reduce fuel loads and assist in response efforts in the event of a wildfire. Additionally, the Green Valley Fire Safe Council hosted a 2023 Wildfire Safety Expo in partnership with the Pleasants Valley Fire Safe Council, engaging the public in wildfire safety awareness. The Green Valley Fire Safe Council has also initiated a chipping program, hosted free green waste events, improved defensible space on hundreds of residences, conducted inspections, and provided training, webinars, and workshops (Green Valley Fire Safe Council 2022; Rochelle Sherlock, Green Valley Fire Safe Council).

Pleasants Valley Fire Safe Council-Vacaville

Pleasants Valley Fire Safe Council-Vacaville is an organized group of residents of Solano County that came together in 2021 as a response to the Quail Fire and LNU Fires in 2020, which ravaged rural residential, farm, and ranch properties in the community. The Pleasants Valley Fire Safe Council moved quickly to connect with its neighbors by assessing affected properties and developing a plan for improving future outcomes. The focus of the council is educating its residents to make the community more wildfire-adapted in the future.The Fire Safe Council provides timely and pertinent information and advice toneighbors at monthly meetings, community events, and email updates so they may prepare themselves, their families, and their properties to resist the effects of wildfire. They provide home fire risk assessments. (President, Pleasants Valley Fire Safe Council-Vacaville)

Solano Fire Safe Council

In response to the threat that the LNU Lightning Complex posed to the county, Solano County is currently in the process of developing a county wide Fire Safe Council, which will complement the work in this Plan. Solano County and Solano RCD staff have partnered and are leading a collaborative effort with community members, including local Fire Safe Councils, to organize and develop the Solano Fire Safe Council. This Fire Safe Council will function as a forum for community groups, such as local Fire Safe Councils; emergency response officials; fire, land management and other agency and government representatives; and other interested members to provide coordination and support for wildfire prevention and preparedness efforts. This Fire Safe Council will lead efforts that implement the projects identified in Solano County's upcoming Plan, spearhead grant applications, and foster collaboration among fire resiliency partners to help Solano County residents adapt to and safely survive future fires (Solano County to launch countywide Fire Safe Council, Solano County 2022h).

G.1.2   NATIONAL PROGRAMS

Ready, Set, Go!

The Ready, Set, Go! Program, which is managed by the International Association of Fire Chiefs, was launched in 2011 at the WUI conference. The program seeks to develop and improve the dialogue between fire departments and residents, providing teaching for residents who live in high-risk wildfire areas—and the WUI—on how to best prepare themselves and their properties against fire threats (International Association of Fire Chiefs 2021).

The tenets of Ready, Set, Go! as included on the website (http://www.wildlandfirersg.org) are:

Ready – Take personal responsibility and prepare long before the threat of a wildfire so your home is ready in case of a fire. Create defensible space by clearing brush away from your home. Use fire-resistant landscaping and harden your home with fire-safe construction measures. Assemble emergency supplies and belongings in a safe place. Plan escape routes and ensure all those residing within the home know the plan of action.

Set – Pack your emergency items. Stay aware of the latest news and information on the fire from local media, your local fire department, and public safety.

Go – Follow your personal wildfire action plan. Doing so will not only support your safety but will allow firefighters to best maneuver resources to combat the fire.

National Fire Protection Association

The National Fire Protection Association (NFPA) is a global non-profit organization devoted to eliminating death, injury, property, and economic loss due to fire, electrical, and related hazards. Its 300 codes and standards are designed to minimize the risk and effects of fire by establishing criteria for building, processing, design, service, and installation around the world.

The NFPA develops easy-to-use educational programs, tools, and resources for all ages and audiences, including Fire Prevention Week, an annual campaign that addresses a specific fire safety theme. The NFPA's Firewise Communities program (www.firewise.org) encourages local solutions for wildfire safety by involving homeowners, community leaders, planners, developers, firefighters, and others in the effort to protect people and property from wildfire risks.

The NFPA is a premier resource for fire data analysis, research, and analysis. The Fire Analysis and Research Division conducts investigations of fire incidents and produces a wide range of annual reports and special studies on all aspects of the nation's fire problem.

National Interagency Fire Center

The National Interagency Fire Center (NIFC) provides a wide array of fire resources and services. The National Interagency Coordination Center offers communication assistance to more than 32,000 firefighters and 50 major events at a given time (About Us, NIFC 2021a). The Predictive Services Group creates wildfire forecasts and predictions from fuel and weather data. The NIFC has a Remote Automated Weather Base with over 2,000 weather stations which help inform the Predictive Services Group. The NWCG, which is nested under the NIFC, provides operational coordination to federal, state, local, tribal, and territorial partners (About Us, NIFC 2021a). The NIFC also has a training branch where training curriculums are developed to be used across the nation. For those too young to participate in the standard training, the NIFC offers FireWorks, an educational program designed for kids K-12. The program teaches children topics such as wildland fire science, ecosystem fluctuations, human interaction on the environment, and other environmental science topics (Wildfire Education, NIFC 2021b). The NIFC also provides public education resources (Fire Prevention, NIFC 2021c):

- Wildfire Readiness – Home

- Wildfire Readiness – Business

- Wildfire Readiness – Farm and Ranch

- Weekend Wildfire Preparedness

- What to Do if a Wildfire is Approaching

- Wildfire Risk – Community

- Prepare and Protect Your Home

- Prepare Your Community

- One Less Spark, One Less Wildfire

- Only You Can Prevent Wildfires

U.S. Fire Administration's WUI Toolkit

The USFA is an entity of the Department of Homeland Security's Federal Emergency Management Agency (FEMA) that aids in the preparation for and response to fire. Their WUI toolkit consists of a list of websites and other information regarding risk assessments, public outreach, and community training. Find the toolkit here: https://www.usfa.fema.gov/wui/.

Wildfire Research Center (WiRē)

Wildfire Research Center (WiRē) is a non-profit organization that works with local wildfire services to achieve community-tailored pathways that reduce risk to wildfire while simultaneously promoting pathways to fire adaptation. WiRē's mission states that fire adaptation is "about living with fire", while "creating safe and resilient communities that reduce wildfire risk on their properties before a fire, and supporting effective response when fires threaten a community." WiRē states that wildfire is an integral component of many ecosystems, and that fire must be allowed, when safe,as to ensure the health of forests. Core to WiRē's approach are four main concepts: 1) residents are critical actors in the WUI wildfire problem; 2) action is central to adaptation; 3) people and their decisions are complex; and 4) decisions are not made in a vacuum. To achieve its goals and serve communities, WiRē will typically conduct a "rapid wildfire risk assessment," which assesses what contributes to wildfire risk, such as building materials, vegetation near homes, background fuels, local topography, and access to emergency fire services. Additionally, they also conduct "social surveys", which assess residents' perceptions about wildfire, wildfire risk, risk mitigation behavior, and their willingness toward taking action to reduce wildfire risk.

For more information, please visit https://wildfireresearchcenter.org/

G.2 COMMUNITY ENGAGEMENT

This section details the community engagement methods and activities that SWCA and project partners implemented as part of the planning process.

Table G.1 presents examples of the public outreach completed as part of the Plan development. Online and physical resources were used to provide information to the public and solicit feedback. Community events were held by Solano County Fire Safe Council, Solano RCD, Pleasants Valley Fire Safe Council-Vacaville, Green Valley Fire Safe Council, and SWCA. Figure G.2 shows the public meeting that was hosted to gather general community input with respect to wildfire safety. Feedback, comments, and suggestions received from community members during community events (e.g., meetings and walkthroughs), the community survey, and project recommendations review were synthesized and utilized to craft project recommendations for the Plan. Therefore, the project recommendations (see Appendix J) are specifically tailored to address the concerns and priorities of Solano County.

A comprehensive and robust process was used by Solano OES, Solano County Fire Safe Council, Solano RCD, Pleasants Valley Fire Safe Council-Vacaville, Green Valley Fire Safe Council, and SWCA to include a broad cross section of the community in the survey collection process, public review period (project recommendations and CWPP), and overall community engagement. The activities occurred throughout the entire project timeline (starting in November 2022 and ending in October 2023) and are briefly summarized below.

1. Announcements for public input were made by the County through social media platforms and local news media outlets. Online surveys were developed in English and Spanish and distributed electronically to residents throughout the county.

2. A public meeting was held to encourage public participation in the planning process.

3. SWCA hosted an information booth at the Wildfire Safety Expo to engage input from residents.

4. SWCA attended 2 meetings hosted by local fire safe councils to promote the CWPP, provide updates, gather community information, and encourage community participation.

5. Input gathered from the communities was used in developing and enhancing the Plan and project recommendations to better fit the communities' needs.

A similar process was employed to encourage public participation in the Fire Safe Council meetings that followed, which were aimed at facilitating public outreach and garnering feedback on the Plan objectives and project recommendations. Public announcements were made, the events were carried out and attended by residents of Solano County, and feedback was collected by SWCA for review and enhancement of the planning process.

For the Solano County Fire Safety Expo held at the Solano Community College, a SWCA booth was set up to provide attendees with information regarding the Solano County Plan. SWCA fire planners that worked on the Plan were present at the booth to field questions and hold discussions with members of the community, The wildfire risk assessment map was on display allowing residents to visualize the level of wildfire risk to their property and the county. Flyers with QR codes for the community survey and the project recommendations feedback form were also available at the booth (see Figures G.10–G.15).

Table G.1. Public Outreach Resources

Resource Description	Location/Description	Figure Number	Date Published
Community survey (English)	Solano OES published the online survey	Figure G.1	Early December 2022
Community survey (Spanish)	Solano OES published the online survey	Figure G.2	Early December 2022
Tweet from John M. Vasquez	County Supervisor John M. Vasquez notifying the public that their input is wanted	Figure G.3	December 5, 2022
Article from *Daily Republic*	Article by the *Daily Republic* extending a statement from John Vasquez to the public regarding the Plan	Figure G.4	December 6, 2022
Article from *The Reporter*	Article by *The Reporter* extending a statement from the office of John Vasquez to the public regarding the Plan	Figure G.5	December 6, 2022
Public meeting	Public meeting at Solano Community Events Center (announcement published on Facebook by Solano OES)	Figure G.6	December 8, 2022
Solano County Fire Safe Council meeting	Meeting agenda for the Solano Fire Safe Council Meeting	Figure G.7	March 20, 2023
Matrices Feedback form	Public feedback form for gathering input on the project recommendations for the Plan	Figure G.8	March 20, 2023
Tweet Announcement	Tweet from @SolanoFire announcing the Wildfire Safety Expo at Solano Community College	Figures G.9	April 15, 2023

Resource Description	Location/Description	Figure Number	Date Published
Wildfire Safety Expo	Public announcement for the Wildfire Safety Expo at Solano Community College on April 15th	Figure G.10–G.15	April 10, 2023
CWPP public review announcement	Press release indicating that the Solano County CWPP is entering public review and is ready for input	Figure G.16	August 16, 2023
Solano County announcement	Announcement of current fire events impacting Solano County and public review period for Solano County CWPP	Figure G.17	n.d.
Solano County CWPP feedback	Solano County CWPP feedback developed by SWCA to solicit plan comments and enhancements	Figure G.18	August 28 to September 18, 2023
Solano County OES Facebook post	Facebook post reminding the public to make their comments and enhancements to the Solano County CWPP before the deadline	Figure G.19	September 12, 2023

Figure G.2. Public meeting held at the Solano Community Events Center on December 8, 2023

G.2.1 COMMUNITY SURVEY RESULTS

1. **Which community best describes the area you reside in?**

Community/City	Total Number	Percentage of all Responses
Green Valley	31	30.1%
Pleasants Valley	28	27.2%
Vacaville	25	24.3%
Fairfield	7	6.8%
Benicia	3	2.9%
Cordelia	3	2.9%
Vallejo	3	2.9%
Dixon	2	1.9%
Suisun Valley	1	1.0%
Grand Total	**103**	**100%**

2. **How prepared is your community for large wildfire?**

   a. Results by community/city

Community/City	Number of Responses	Percentage*
Benicia		
Moderately prepared	3	100%
Cordelia		
Moderately prepared	2	66.7%
Poorly prepared	1	33.3%
Dixon		
Moderately prepared	2	100%
Fairfield		
Moderately prepared	4	57.1%
Poorly prepared	1	14.3%
Well prepared	2	28.6%
Green Valley		
Moderately prepared	20	64.5%
Poorly prepared	6	19.4%
Well prepared	5	16.1%
Pleasants Valley		
Moderately prepared	15	53.5%
Poorly prepared	12	42.9%
Well prepared	1	3.6%

Community/City	Number of Responses	Percentage*
Suisun Valley		
Moderately prepared	1	100%
Vacaville		
Moderately prepared	18	72.0%
No Answer	1	4.0%
Poorly prepared	6	24.0%
Vallejo		
Poorly prepared	3	100$%
Grand Total	**103**	**--**

*Indicates percent of all responses within the community/city

b. Overall results

Level of Preparation	Number of Responses	Percentage
Moderately prepared	65	63.1%
Poorly prepared	29	28.2%
Well prepared	8	7.8%
No Answer	1	1.0%
Grand Total	**103**	**100.0%**

1. **How would you rate your house in terms of risk from wildfire? (Consider the proximity of your house to tracts of undeveloped land, vegetated land, emergency response, and access.)**

a. Results by community/city

Community/City	Number of Responses	Percentage*
Benicia		
Low	1	33.3%
Medium	2	66.7%
Cordelia		
High	1	33.3%
Medium	2	66.7%
Dixon		
Low	2	100%
Fairfield		
Low	1	14.3%
Medium	6	85.7%
Green Valley		
High	11	35.5%

Community/City	Number of Responses	Percentage*
Low	3	9.7%
Medium	17	54.8%
Pleasants Valley		
High	12	42.9%
Low	5	17.9%
Medium	9	32.1%
No Answer	2	7.1%
Suisun Valley		
Low	1	100%
Vacaville		
High	5	20.0%
Low	8	32.0%
Medium	11	44.0%
No Answer	1	4.0%
Vallejo		
High	2	66.7%
Medium	1	33.3%
Grand Total	**103**	**--**

*Indicates percent of all responses within the community/city

b. Overall results

Level of Risk	Number of Responses	Percent
Medium	48	46.6%
High	31	30.1%
Low	21	20.4%
No Answer	3	2.9%
Grand Total	**103**	**100.0%**

2. **My home is vulnerable to wildfire because of…… (Select top 2 choices)**

Community/City	Fuels on neighboring properties*	Fuels on my property*	Building Materials*	Water supply*	Accessibility*	Adjacent ignition sources*	No Answer*
Benicia	1	2	1	0	0	1	0
Cordelia	2	1	0	1	0	1	0
Dixon	1	0	2	0	0	0	0
Fairfield	5	2	2	0	1	4	0
Green Valley	21	10	3	6	5	7	3

Community/ City	Fuels on neighboring properties*	Fuels on my property*	Building Materials*	Water supply*	Accessibility*	Adjacent ignition sources*	No Answer*
Pleasants Valley	16	8	2	16	7	7	1
Suisun Valley	0	0	0	0	0	0	1
Vacaville	13	8	2	14	6	8	3
Vallejo	1	2	1	0	2	0	0
Grand Total	**60**	**33**	**13**	**37**	**21**	**28**	**8**

*Indicates the number of times the particular concern was selected

3. **Rate the following actions in their importance to making the community better prepared for wildfire (Please RANK 1-5; 1 is most important).**
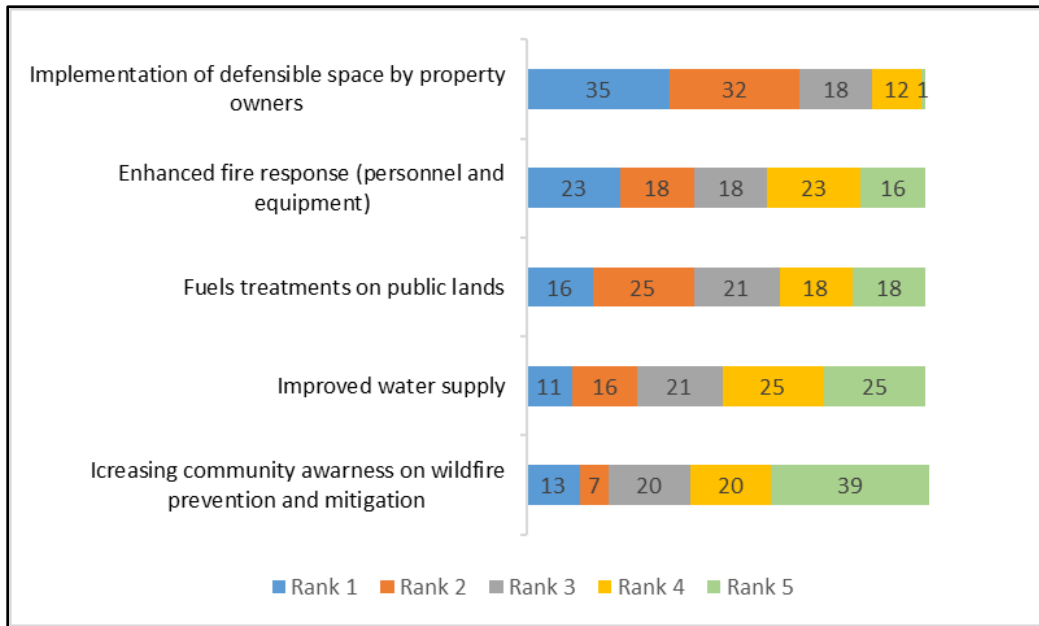
Note: the chart above shows how respondents ranked each action. For example, the "*implementation of defensible space by property owners*" action was selected 35 times as Rank #1, 32 times as Rank #2, 18 times as Rank #3, 12 times as Rank #4, and 1 time as Rank #5. The items toward the top were chosen more often as top priorities (Ranks 1 – 3), and the items toward the bottom were chosen more often as low priorities (Ranks 3-5).

4. **My biggest challenge to making my home fire safe is…. (Please RANK 1-4; 1 is most important).**
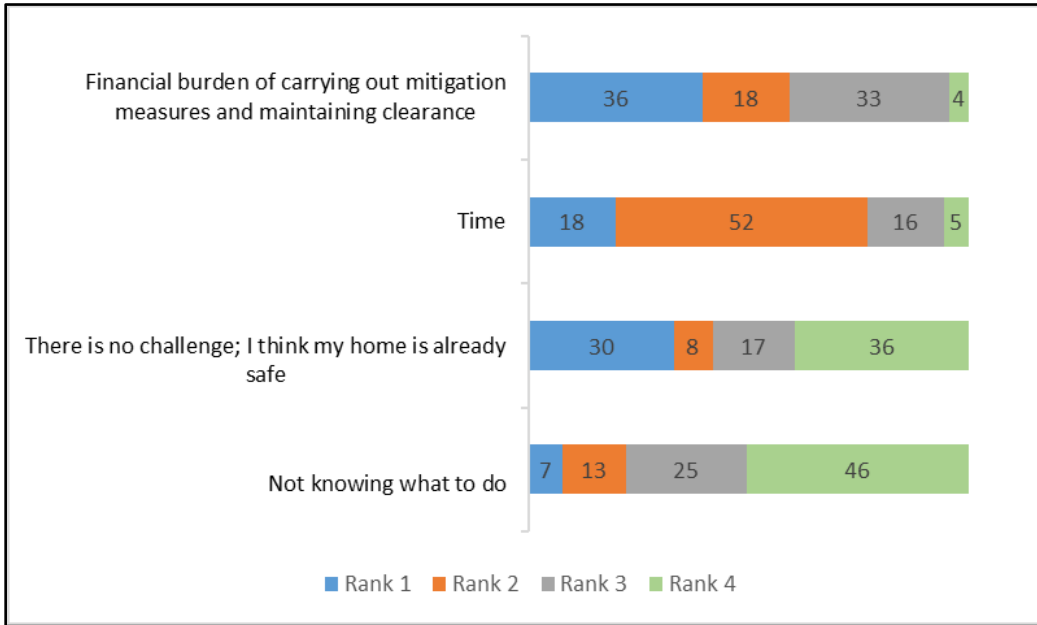
Note: the chart above shows how respondents ranked each potential challenge.

For example, the "*Financial burden of carrying out mitigation measures and maintaining clearance*" challenge was selected 36 times as Rank #1, 18 times as Rank #2, 33 times as Rank #3, and 4 times as Rank #4. The items toward the top were chosen more often as top priorities (Ranks 1 – 2), and the items toward the bottom were chosen more often as low priorities (Ranks 2-4).

5. **I would be most interested in funding to help me and my community with….
   (Please RANK 1-7; 1 is most important)**
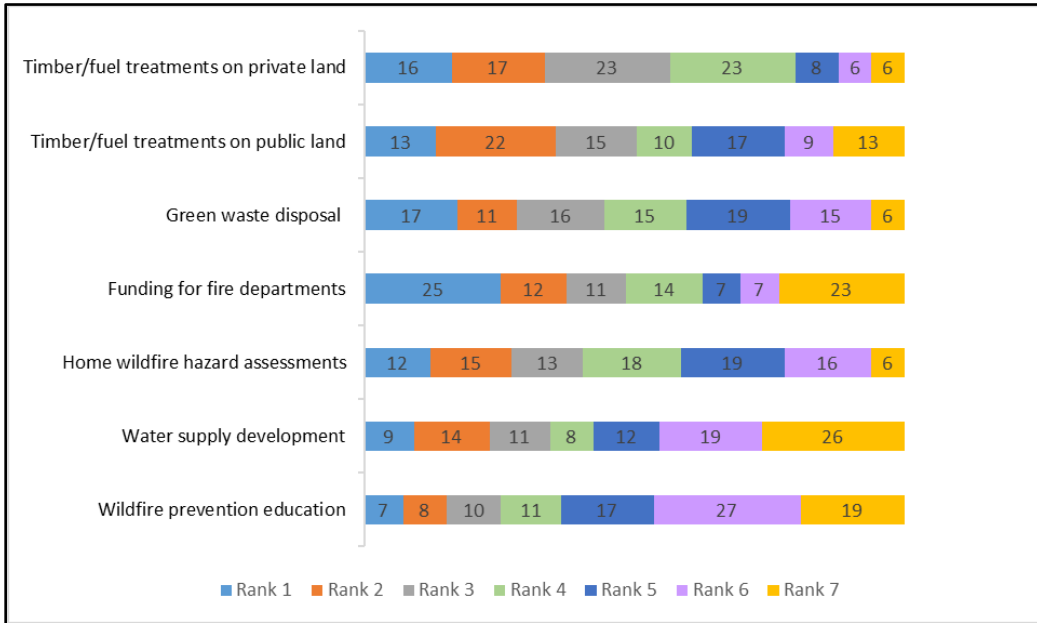
Note: the chart above shows how respondents ranked each item. For example, the "*timber/fuel treatments on private land*" item was selected 16 times as Rank #1, 17 times as Rank #2, 23 times as Rank #3, 23 times as Rank #4, 8 times as Rank #5, 6 times as Rank # 6, and 6 times as Rank #7. The items toward the top were chosen more often as top priorities (Ranks 1 – 4), and the items toward the bottom were chosen more often as low priorities (Ranks 5-7).

6. **Are you currently using prescribed fire to treat your property?**

   a. Results by community/city

City/Community	Number of Responses	Percentage
Benicia		
No	3	100.0%
Cordelia		
No	2	66.7%
No Answer	1	33.3%
Dixon		
No	2	100.0%
Fairfield		
No	5	71.4%
No Answer	1	14.3%
Yes	1	14.3%
Green Valley		
No	21	67.7%

City/Community	Number of Responses	Percentage
No Answer	1	3.2%
No, but I am interested in learning more.	6	19.4%
Yes	3	9.7%
Pleasants Valley		
No	11	39.3%
No, but I am interested in learning more.	8	28.6%
Yes	9	32.1%
Suisun Valley		
Yes	1	100.0%
Vacaville		
No	13	52.0%
No, but I am interested in learning more.	10	40.0%
Yes	2	8.0%
Vallejo		
No	3	100.0%
Grand Total	**103**	**--**

b. Overall results

Answer	Number of Responses	Percentage
No	60	58.3%
No, but I am interested in learning more.	24	23.3%
Yes	16	15.5%
No Answer	3	2.9%
Grand Total	**103**	**100.0%**

7. **Name any community resources you would most like to see prioritized for protection from wildfire (e.g., natural areas, cultural sites, municipal infrastructure, and recreation sites).**

Community Resources			
"Lake Solano"	*"Putah Creek"*	*"Municipal infrastructure"*	*"Vallejo Water Treatment Plant"*
"Joyful Ranch"	*"Pena adobe"*	*"Patwino Worrtla Kodoi Dihi Open Space Park"*	*"East Hills"*
"Green Valley"	*"Cultural Sites"*	*"Rockville Hills Regional Park"*	*"Vallejo Lakes Watershed"*
"Glen Cove Waterfront"	*"Windfall Farm"*	*"Solano Land Trust properties"*	*"Solano County Society for the Prevention of Cruelty to Animals"*

Community Resources			
"Creeks, Streams and Ditches"	*"City Owned Land"*	*"Scenic rural areas"*	*"Lake Solano County Park"*

8. Do you have an updated evacuation plan for you/your family?

    a. Results by community/city

Community/City	Number of Responses	Percent
Benicia		
No	2	66.7%
Yes	1	33.3%
Cordelia		
No	2	66.7%
Yes	1	33.3%
Dixon		
No	1	50.0%
Yes	1	50.0%
Fairfield		
No Answer	2	28.6%
Yes	5	71.4%
Green Valley		
No	7	22.6%
Yes	24	77.4%
Pleasants Valley		
No	4	14.3%
No Answer	1	3.6%
Yes	23	82.1%
Suisun Valley		
Yes	1	100.0%
Vacaville		
No	10	40.0%
Yes	15	60.0%
Vallejo		
No	3	100.0%
Grand Total	**103**	--

b. Overall results

Answer	Number of Responses	Percent
Yes	71	68.9%
No	29	28.2%
No Answer	3	2.9%
Grand Total	**103**	**100.0%**

9. Do you have an emergency evacuation kit ready?

a. Results by community/city

Community/City	Number of Responses	Percent
Benicia		
No	2	66.7%
Yes	1	33.3%
Cordelia		
Yes	3	100.0%
Dixon		
No	1	50.0%
Yes	1	50.0%
Fairfield		
No	1	14.3%
Yes	4	57.1%
No Answer	2	28.6%
Green Valley		
No	9	29.0%
Yes	22	71.0%
Pleasants Valley		
No	6	19.4%
Yes	22	71.0%
Suisun Valley		
Yes	1	100.0%
Vacaville		
No	10	40.0%
Yes	15	60.0%
Vallejo	**3**	
No	1	33.3%
Yes	2	66.7%
Grand Total	**103**	--

b. Overall results

Answer	Number of Responses	Percent
Yes	71	68.9%
No	30	29.1%
No Answer	2	1.9%
Grand Total	**103**	**100.0%**

10. Are you familiar with local evacuation routes?

a. Results by community/city

Community/City	Number of Responses	Percent
Benicia		
Yes	3	100.0%
Cordelia		
No	1	33.3%
Yes	2	66.7%
Dixon		
No	1	50.0%
Yes	1	50.0%
Fairfield		
No Answer	2	33.3%
Yes	5	33.3%
Green Valley		
No	4	12.9%
No Answer	1	3.2%
Yes	26	83.9%
Pleasants Valley		
No	2	7.1%
No Answer	1	3.6%
Yes	25	89.3%
Suisun Valley		
Yes	1	100.0%
Vacaville		
No	6	24.0%
Yes	19	76.0%
Vallejo		
No	3	100.0%
Grand Total	**103**	**--**

b. Overall results

Answer	Number of Responses	Percent
Yes	82	79.6%
No	17	16.5%
No Answer	4	3.9%
Grand Total	**103**	**100.0%**

11. How likely are you to leave your home under an optional evacuation order?

a. Results by community/city

Community/City	Number of Responses	Percent
Benicia		
Will evacuate	3	100.0%
Cordelia		
Not sure	2	66.7%
Will not evacuate	1	33.3%
Dixon	**2**	
Not sure	1	50.0%
Will evacuate	1	50.0%
Fairfield		
No Answer	2	28.6%
Not sure	1	14.3%
Will evacuate	4	57.1%
Green Valley		
No Answer	1	3.2%
Not sure	10	32.3%
Will evacuate	13	41.9%
Will not evacuate	7	22.6%
Pleasants Valley		
Not sure	9	32.1%
Will evacuate	5	17.9%
Will not evacuate	14	77.8%
Suisun Valley		
Will not evacuate	1	100.0%
Vacaville		
Not sure	7	28.0%
Will evacuate	9	36.0%
Will not evacuate	9	36.0%

Community/City	Number of Responses	Percent
Vallejo		
Not sure	2	66.7%
Will evacuate	1	33.3%
Grand Total	**103**	--

b. Overall results

Answer	Number of Responses	Percent
Will evacuate	36	35.0%
Not sure	32	31.1%
Will not evacuate	32	31.1%
No Answer	3	2.9%
Grand Total	**103**	**100.0%**

12. How likely are you to leave your home under a mandatory evacuation order?

a. Results by community/city

Community/City	Number of Responses	Percent
Benicia		
Will evacuate	3	100.0%
Cordelia		
Not sure	1	33.3%
Will evacuate	2	66.7%
Dixon		
Will evacuate	2	100.0%
Fairfield		
No Answer	2	28.6%
Will evacuate	4	57.1%
Will not evacuate	1	14.3%
Green Valley		
Not sure	9	29.0%
Will evacuate	21	67.7%
Will not evacuate	1	3.2%
Pleasants Valley		
Not sure	5	17.9%
Will evacuate	15	53.6%
Will not evacuate	8	28.6%
Suisun Valley		
Will not evacuate	1	100.0%

Community/City	Number of Responses	Percent
Vacaville		
Not sure	5	20.0%
Will evacuate	15	60.0%
Will not evacuate	5	20.0%
Vallejo		
Will evacuate	3	100.0%
Grand Total	**103**	--

b. Overall results

Answer	Number of Responses	Percent
Will evacuate	65	63.1%
Not sure	20	19.4%
Will not evacuate	16	15.5%
No Answer	2	1.9%
Grand Total	**103**	**100.0%**

13. Do you know how to sign up for local emergency notifications?

a. Results by community/city

Answer	Number of Responses	Percent
Benicia		
No	1	33.3%
Yes	2	66.7%
Cordelia		
No	1	33.3%
Yes	2	66.7%
Dixon		
No	1	50.0%
Yes	1	50.0%
Fairfield		
No	1	14.3%
No Answer	2	28.6%
Yes	4	57.1%
Green Valley		
No	3	9.7%
Yes	28	90.3%
Pleasants Valley		
Yes	28	100.0%

Answer	Number of Responses	Percent
Suisun Valley		
Yes	1	100.0%
Vacaville		
No	3	12.0%
Yes	22	88.0%
Vallejo		
No	1	33.3%
Yes	2	66.7%
Grand Total	**103**	--

b.   Overall results

Answer	Number of Responses	Percent
Yes	90	87.4%
No	11	10.7%
No Answer	2	1.9%
Grand Total	**103**	**100.0%**

14. Are you registered for local emergency notifications?

a.   Results by community/city

Answer	Number of Responses	Percent
Benicia		
No	1	33.3%
Yes	2	66.7%
Cordelia		
No	1	33.3%
Yes	2	66.7%
Dixon		
No	1	50.0%
Yes	1	50.0%
Fairfield		
No	1	14.3%
No Answer	2	28.6%
Yes	4	57.1%
Green Valley		
No	2	6.5%
Yes	29	93.5%

Answer	Number of Responses	Percent
Pleasants Valley		
No	1	3.6%
Yes	27	96.4%
Suisun Valley		
Yes	1	100.0%
Vacaville		
No	2	8.0%
Yes	23	92.0%
Vallejo		
No	1	33.3%
Yes	2	66.7%
Grand Total	**103**	**--**

b. Overall results

Answer	Number of Responses	Percent
Yes	91	88.3%
No	10	9.7%
No Answer	2	1.9%
Grand Total	**103**	**100.0%**

G.3 STAKEHOLDER OUTREACH

To convene an all-inclusive Core Team, SWCA, Solano OES, Solano County Fire Safe Council, Solano RCD, Green Valley Fire Safe Council, and Pleasants Valley Fire Safe Council conducted extensive stakeholder outreach that consisted of emails, calls, video conferencing, and in-person meetings with personnel from the local government, private entities, fire organizations, and federal land managers.

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APPENDIX H :

Fuel Treatment Types and Methods

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CONTENTS

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H.1 FUELS TREATMENT SCALES AND METHODS

This appendix is included as a compilation of resources to provide guidance for the implementation of fuel treatments.

H.1.1   DEFENSIBLE SPACE

Defensible space is the first line of defense for your home against wildfire (CALFIRE Defensible Space 2023). Although fire agencies can be valuable in providing guidance and assistance, creating defensible space is the responsibility of the individual homeowner (Figure H.1). The Casualty Actuarial Society compared the impact of individual and community-level mitigation on individual homeowner risks. They found that "the model indicates that all mitigation measures reduce the individual risk, but individual home mitigation – which individual homeowners' control – can have a bigger impact than any community mitigation alone" (Casual Actuarial Society 2023).
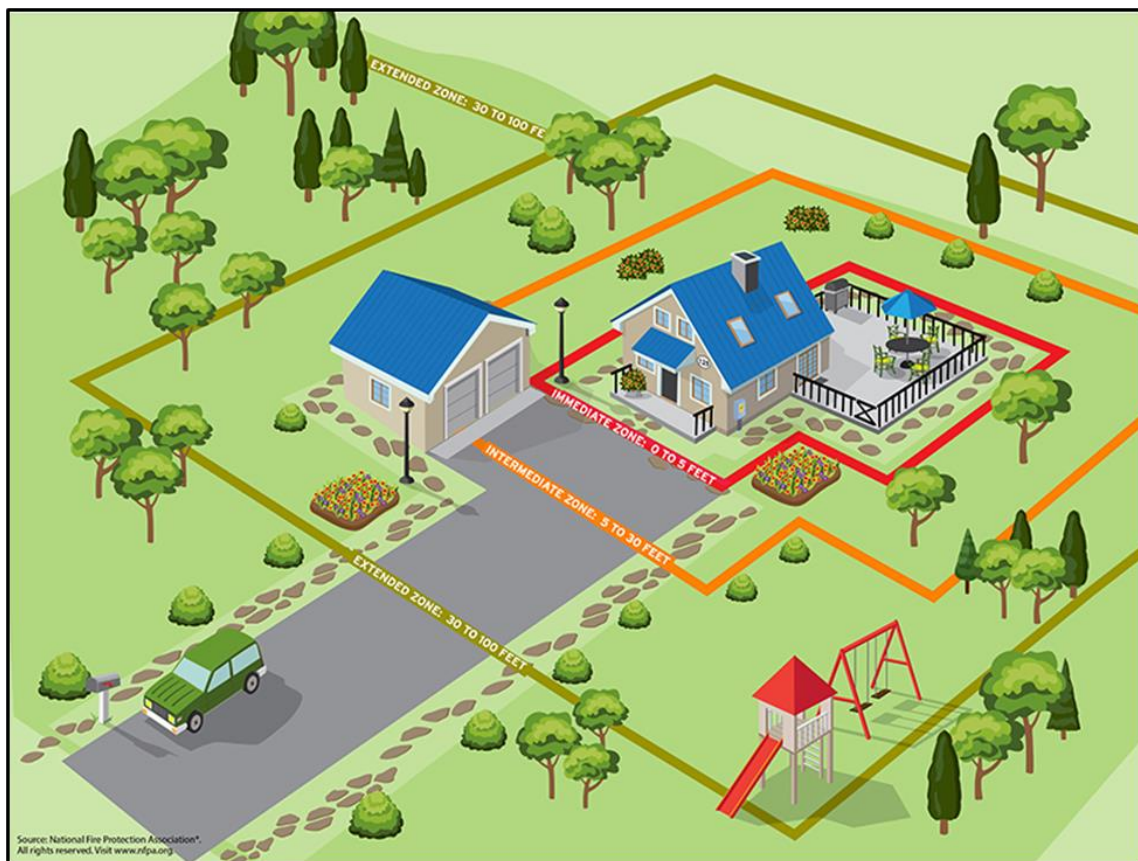

Figure H.1. Defensible space zones providing clearance between a structure and adjacent woodland or forest fuels
Source: NFPA

The California State Board of Forestry issued General Guidelines for Creating Defensible Space in 2008, following a change in defensible space clearance requirements from 30 to 100 feet around buildings and structures within State Responsibility Areas (SRAs) or very high fire hazard severity zones (FHSZs) within Local Responsibility Areas (LRAs). The Public Resources Code (PRC) was amended in January 2021 to

require an ember-resistant zone within 5 feet of the home/structure on or before January 1, 2023. This translates to having a clearance of 5 feet between the home/structure and any materials that would likely be ignited by embers (Defensible Space, CAL FIRE 2022f).

Some aspects about wildland-urban interface (WUI) defensible space that are often overlooked include:

- The amount of defensible space needed may vary due to local conditions, such as slope, fuel density, building materials, or location.

- Fuel reduction has more to do with disrupting fuel continuity so that the spread of fire is impeded, rather than creating a denuded zone around a home. For example, pruning the lower limbs of trees creates a break between ground fuels and tree canopies, reducing the chances that a fire will move from a ground fire to a crown fire.

- Communities may wish to develop defensible space areas that are greater than 100 feet for even better protection; the code sets only a minimum distance. However, expanding treatments beyond property lines can only be done if allowed by state law, local ordinance, rule, or regulation.

- Defensible space also provides a safer environment within which firefighters can work. This environment is more than vegetation clearance; defensible space also involves emergency vehicle access, water supply, and clear street signs and addresses. All these factors affect the usefulness of defensible space in structure protection.

- Vegetation fuel reduction projects require compliance with all federal, state, or local environmental protection laws.

Effective defensible space is an essentially fire-free zone adjacent to the home, a treated secondary zone that is thinned and cleaned of surface fuels, and (if the parcel is large enough) a transitional third zone that is basically a managed forest area (see Figure H.1). These components work together in a proven and predictable manner. Zone 1 keeps fire from burning directly to the home; Zone 2 reduces the adjacent fire intensity and the likelihood of torching, crown fire, and ember production; and Zone 3 does the same at a broader scale, keeping the fire intensity lower by maintaining a more natural, historic condition (Figure H.2).
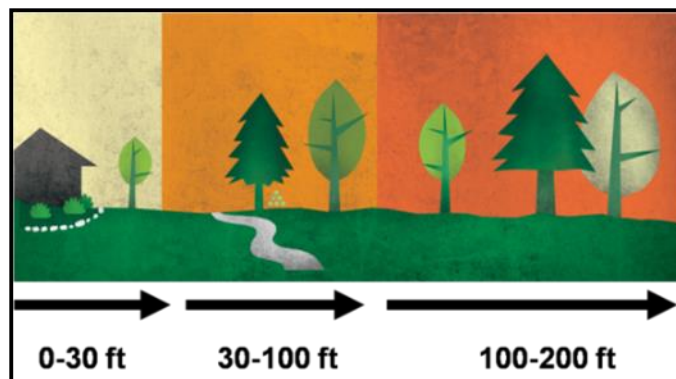

Figure H.2. Defensible space zones
Source: Firewise.org

It should be emphasized that defensible space is an area that allows firefighters to work effectively and with some degree of safety to defend structures. While defensible space may increase a home's chance of surviving a fire on its own, a structure's survival is not guaranteed. Nevertheless, when these principles

are consistently applied across a neighborhood, everyone benefits. The three zones for defensible space actions are described below (Defensible Space, CAL FIRE 2022f):

Zone 0 – Immediate Zone, Ember Resistant**:** Assembly Bill 3074 requires the Board of Forestry and Fire Protection to develop the regulation for Zone 0. Zone 0 has been proven to be the most important defensible space zone for protecting a home against wildfire. This zone consists of the immediate area around a home and is defined as 0 to 5 feet from the property structure, including areas under and around all structure attachments, such as sheds or decks. Zone 0 requires the most stringent wildfire fuel reduction methods as actions taken within this zone can directly influence whether a property ignites. Recommendations for treating Zone 0 include (Defensible Space, CAL FIRE 2022f):

- Use noncombustible landscaping materials, such as gravel in place of mulch.

- Clear all dead and dying debris from around a structure, including branches, dead leaves, pinecones, pine needles, grasses, and shrubs. Remember to check areas where the debris can accumulate, such as gutters, stairways, porches, and roofs.

- Clear all branches or vegetation within 10 feet of any chimney or stovepipe outlet.

- To keep vegetation within the 5-foot buffer around a structure, make sure plants are thoroughly watered, and keep non-woody, low-growing plant species if possible.

- Limit the use of combustible materials, such as outdoor furniture, on decks or patios.

- Relocate firewood or lumber to Zone 2.

- Replace structures attached to a home, such as fencing or gates, with noncombustible materials.

- If possible, keep garbage receptacles outside of Zone 0.

- If possible, keep all vehicles, boats, all-terrain vehicles (ATVs), and any other machines outside of Zone 0.

Zone 1 – Intermediate Zone, Clean and Green: Zone 1 consists of the first 30 feet from structures, including home, decks, garages, etc. If a property line extends less than 30 feet, Zone 1 is the distance from structures to the property line. This zone features fuel reduction efforts and serves as a transitional area between Zones 0 and 2. Recommendations for treating Zone 1 include (Defensible Space, CAL FIRE 2022f):

- Remove all dead and dying vegetation, including vegetation debris such as leaf litter. Be sure to check the roof and gutters as well.

- Maintain a minimum buffer of 10 feet between a chimney and any vegetation, including dead or overhanging branches. Be sure to remove all branches that hang over the roof.

- Maintain trees by trimming them regularly and keeping a minimum 10-foot buffer between tree canopies.

- Relocate fire or lumber to Zone 2.

- Trim or remove any flammable vegetation near windows.

- Remove any items or vegetation that could catch fire and ignite other property structures, such as vegetation under decks or stairs.

- Separate any items that could ignite, such as trees, shrubs, swing sets, patio furniture, etc.

Zone 2 – Extended Zone, Reduced Fuel: This zone encompasses an area 30 feet from a structure out to 100 feet, or the property line, whichever is closer. This zone addresses fuel reduction to prevent wildfires from spreading. Recommendations for treating Zone 2 include (Defensible Space, CAL FIRE 2022f):

- Maintain all grasses to reach a maximum height of 4 inches.

- For shrubs or trees, maintain a distance between plants of at least two times a plant's size. Additional space between vegetation is needed for properties on slopes (Figure H.3).

  - Flat to mild slope (less than 20%): Minimum distance of 10 feet between trees and two times the size of other plants. Example: For shrubs 2 feet in diameter, at least 4 feet are needed between shrubs.

  - Mild to moderate slope (20%–40%): Minimum distance of 20 feet between trees and four times the size of other plants. Example: For shrubs 2 feet in diameter, at least 8 feet are needed between shrubs.

  - Moderate to steep slope (greater than 40%): Minimum distance of 30 feet between trees and six times the size of other plants. Example: For shrubs 2 feet in diameter, at least 12 feet are needed between shrubs.

- Create vertical space between vegetation by clearing all branches at least 6 feet from the ground for isolated trees, or for trees with nearby shrubs, clear at least 3 times the shrub height (Figure H.4).

  - Example: A 4-foot shrub is growing near a tree; a clearance of 12 feet (3 × 4) is needed between the top of the shrub and the lowest tree branch.

- Vegetation debris such as dead leaves, branches, twigs, pinecones, etc., may be allowed up to 3 inches in depth. However, it is best to remove vegetation debris.

- All wood or lumber piles must have a 10-foot buffer of bare mineral soil in all directions; no vegetation is allowed.

In addition to the recommendations listed above, CAL FIRE suggests maintaining a clearance zone of 10 feet around any outbuildings or liquid propane gas storage tanks, and an additional 10-foot clearance zone with no flammable vegetation (Defensible Space, CAL FIRE 2022f).
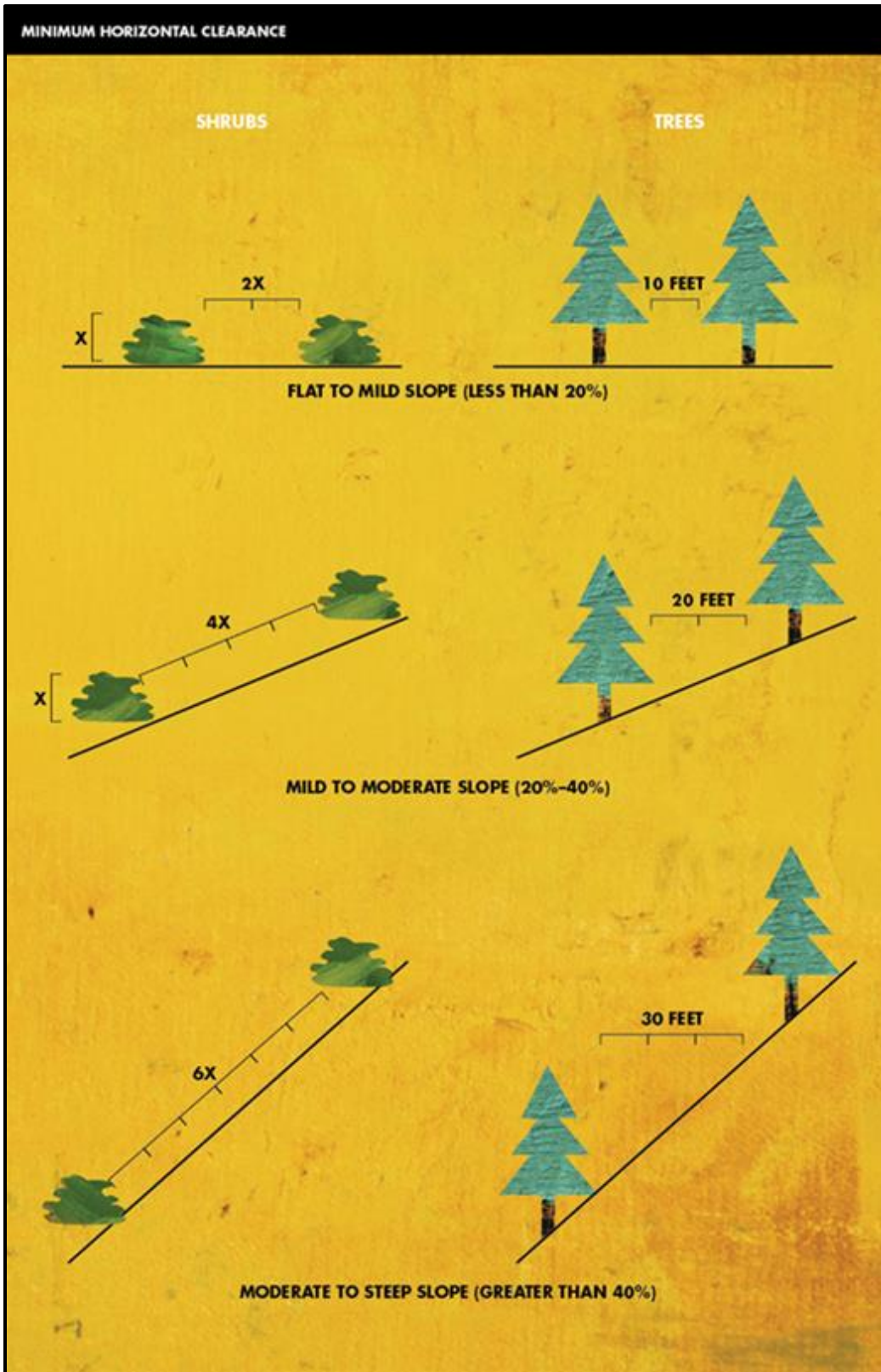
Figure H.3. Minimum horizontal clearance
Source: CAL FIRE (2022e)

Figure H.4. Minimum vertical clearance
Source: CAL FIRE (2022e)

Specific recommendations should be based on the hazards adjacent to a structure such as slope steepness and fuel type. The National Fire Protection Association (NFPA) offers a free Community Wildfire Risk Assessment Tutorial and an online learning module: Understanding the Wildfire Threat to Homes. Both tools are great resources for learning about, and implementing defensible space.

Assisting neighbors may be essential in many cases. Homeowners should consider assisting the elderly, sharing ladders for gutter cleaning, and assisting neighbors with large thinning needs. Homeowner actions have been found to also motivate neighbors to act, increasing the scope of wildfire mitigation across a community (Evans et al. 2015). Adopting a phased approach can make the process more manageable and encourage maintenance (Table H.1).

Table H.1. Example of a Phased Approach to Mitigating Home Ignitability

Year	Project	Actions
1	Basic yard cleanup (annual)	Dispose of clutter in the yard and under porches. Remove dead branches from yard. Mow and rake. Clean off roofs and gutters. Remove combustible vegetation near structures. Coordinate disposal as a neighborhood or community. Post 6-inch reflective address numbers visible from road.

Year	Project	Actions
2	Understory thinning near structures	Repeat basic yard cleanup.
		Limb trees up to 6–10 feet.
		Trim branches back 15 feet from chimneys.
		Trim or cut down brush.
		Remove young trees that can carry fire into forest canopy.
		Coordinate disposal as a neighborhood or community.
3	Understory thinning on private property along roads and drainages	Limb trees up to 6–10 feet.
		Trim or cut down brush.
		Remove young trees that can carry fire into forest canopy.
		Coordinate disposal as a neighborhood or community.
4	Overstory treatments on private property	Evaluate the need to thin mature or diseased trees.
		Prioritize and coordinate tree removal within neighborhoods to increase cost effectiveness.
5	Restart defensible space treatment cycle	Continue the annual basic yard cleanup.
		Evaluate need to revisit past efforts or catch those that were bypassed.

H.1.2   FUEL BREAKS AND OPEN SPACE CLEANUP

The next location priority for fuels treatments should be where the community meets wildland. This may be the outer margins of a town or an area adjacent to occluded open spaces such as a park. Fuel breaks (also known as shaded fuel breaks) are strips of land where fuel (for example, living trees and brush, dead branches, leaves or downed logs) has been modified or reduced to limit the fire's ability to spread rapidly. Fuel breaks should not be confused with firebreaks, which are areas where vegetation and organic matter are removed down to mineral soil. Shaded fuel breaks may be created to provide options for suppression resources or to provide opportunities to introduce prescribed fire. In many cases, shaded fuel breaks may be created by thinning along roads. This provides access for mitigation resources and firefighters, as well as enhancing the safety of evacuation routes.

H.1.3   LARGER-SCALE TREATMENTS

Farther away from WUI communities, the emphasis of treatments often becomes broader. While reducing the buildup of hazardous fuels remains important, other objectives are often included, such as forest health and resiliency to catastrophic wildfire and climate change considerations. Wildfires frequently burn across jurisdictional boundaries, sometimes on landscape scales. As such, these larger treatments need to be coordinated on a strategic level. This requires coordination between projects and jurisdiction, as is currently occurring.

H.2 ACTION ITEMS FOR HOMEOWNERS TO REDUCE STRUCTURAL IGNITABILITY

Low or No Cost Investment (<$50)	Regularly check fire extinguishers and have a 100-foot hose available to wet perimeter.
	Maintain defensible space for 30 feet around home. Work with neighbors to provide adequate fuels mitigation in the event of overlapping property boundaries.
	Install an environmentally appropriate xeriscape yard instead of grass
	Screen vents with noncombustible meshing with mesh opening not to exceed nominal 1/8-1/16-inch size.
	Ensure that house numbers are easily viewed from the street.
	Keep wooden fence perimeters free of dry leaves and combustible materials. If possible, noncombustible material should link the house and the fence.
	Keep gutters free of vegetative litter. Gutters can act as collecting points for fire brands and ashes.
	Store combustible materials (firewood, propane tanks, grills) away from the house; in shed, if available.
	Clear out materials from under decks and/or stacked against the structure. Stack firewood at least 30 feet from the home, if possible.
	Reduce your workload by considering local weather patterns. Because prevailing winds in the area are often from the west-southwest, consider mitigating hazards on the west corner of your property first, then work around to cover the entire area.
	Seal up any gaps in roofing material and enclose gaps that could allow fire brands to enter under the roof tiles or shingles.
	Remove flammable materials from around propane tanks.

Minimal Investment (<$250)	When landscaping in the home ignition zone (HIZ) (approximately 30 feet around the property), select noncombustible plants, lawn furniture, and landscaping material. Combustible plant material like junipers and ornamental conifers should be pruned and kept away from siding. If possible, trees should be planted in islands and no closer than 10 feet to the house. Tree crowns should have a spacing of at least 18 feet when within the HIZ. Vegetation at the greatest distance from the structure and closest to wildland fuels should be carefully trimmed and pruned to reduce ladder fuels, and density should be reduced with approximately 6-foot spacing between trees crowns.
	Box in eaves, attic ventilation, and crawl spaces with noncombustible material.
	Work on mitigating hazards on adjoining structures. Sheds, garages, barns, etc., can act as ignition points to your home.
	Enclose open space underneath permanently located manufactured homes using noncombustible skirting.
	Clear and thin vegetation along driveways and access roads so they can act as a safe evacuation route and allow emergency responders to access the home.
	Purchase or use a National Oceanic and Atmospheric Administration weather alert radio to hear fire weather announcements.
Moderate to High Investment (>$250)	Construct a noncombustible wall or barrier between your property and wildland fuels. This could be particularly effective at mitigating the effect of radiant heat and fire spread where 30 feet of defensible space is not available around the structure.
	Construct or retrofit overhanging projections with heavy timber that is less combustible.
	Replace exterior windows and skylights with tempered glass or multilayered glazed panels.
	Invest in updating your roof to noncombustible construction. Look for materials that have been treated and given a fire-resistant roof classification of Class A. Wood materials are highly combustible unless they have gone through a pressure-impregnation fire-retardant process.
	Construct a gravel turnaround in your driveway to improve access and mobilization of fire responders.
	Treat construction materials with fire-retardant chemicals.
	Install a roof irrigation system.
	Replace wood or vinyl siding with nonflammable materials.
	Relocate propane tanks underground.

Additional resources regarding home hardening can be found in Appendix F.

H.3 FUEL TREATMENT METHODS

Since specifics of the treatments are not provided in detail in Table H.1, different fuels reduction methods are outlined in the following narrative.

Several treatment methods are commonly used for hazardous fuels reduction, including manual treatments, mechanized treatments, prescribed fire, and grazing (Table H.2). This brief synopsis of treatment options is provided for general knowledge; specific projects will require further planning. The appropriate treatment method and cost will vary depending on factors such as the following:

- Diameter of materials
- Proximity to structures
- Acreage of project
- Fuel costs
- Steepness of slope
- Area accessibility
- Density of fuels
- Project objectives

It is imperative that long-term monitoring and maintenance of all treatments is implemented. Post-treatment rehabilitation such as seeding with native plants and erosion control may be necessary. In addition, post-treatment fuel cleanup is a must as neglected piles of vegetation may result in increased fire risk.

Table H.2. Summary of Fuels Treatment Methods

Treatment	Comments
Machine mowing	Appropriate for large, flat, grassy areas on relatively flat terrain.
Manual treatment with chipping or pile burning	Requires chipping, hauling, and pile burning of slash in cases where lop and scatter is inappropriate. Pile burning must comply with smoke management policy.
Brush mastication	Brush species tend to re-sprout vigorously after mechanical treatment. Frequent maintenance of treatments is typically necessary. Mastication tends to be less expensive than manual (chainsaw) treatment and eliminates disposal issues.
Timber mastication	Materials up to 10 inches in diameter and slopes up to 30% can be treated. Eliminates disposal issues. Environmental impact of residue being left on-site is still being studied.
Prescribed fire	Can be very cost effective for public land but not close to the city. Ecologically beneficial. Can be used as training opportunities for firefighters. May require manual or mechanical pretreatment. Carries risk of escape. Unreliable scheduling due to weather and smoke management constraints.
Feller buncher	Mechanical treatment on slopes more than 30% or of materials more than 10 inches in diameter may require a feller buncher rather than a masticator. Costs tend to be considerably higher than masticator.

Treatment	Comments
Targeted grazing (e.g., goats)	Can be cost effective. Ecologically beneficial. Can be applied on steep slopes and shrubby and flashy fuels. Requires close management.

H.3.1 MANUAL TREATMENT

Manual treatment refers to crew-implemented cutting with chainsaws. Although it can be more expensive than mechanized treatment, crews can access many areas that are too steep or otherwise inaccessible with machines. Treatments can often be implemented with more precision than prescribed fire or mechanized methods allow. Merchantable materials and firewood can be removed while non-merchantable materials are often lopped and scattered, chipped, or piled and burned on-site. Care should be exercised to not increase the fire hazard by failing to remove or treat discarded material in a site-appropriate manner.

Strategic timing and placement of fuels treatments is critical for effective fuels management practices and should be prescribed based on the conditions of each treatment area. Some examples of this would be to place fuel breaks in areas where the fuels are heavier and in the path of prevailing winds and to mow grasses just before they cure and become flammable. Also, fuel reductions on slopes/ridgelines extending from the WUI to enhance community protection. In areas where the vegetation is sparse and not continuous, fuels treatments may not be necessary to create a defensible area where firefighters can work. In this situation, where the amount of fuel to carry a fire is minimal, it is best to leave the site in its current condition to avoid the introduction of exotic species.

H.3.2 MECHANIZED TREATMENTS

Mechanized treatments include mowing, mastication (ground-up timber), and whole tree felling. These treatments allow for more precision than prescribed fire and are often more cost-effective than manual treatment.

Mowing, including ATV and tractor-pulled mower decks, can effectively reduce grass fuels adjacent to structures and along highway rights-of-way and fence lines. For heavier fuels, several different masticating machines can be used, including drum- or blade-type masticating heads mounted on machines and ranging in size from a small skid-steer to large front-end loaders. Some masticators can grind standing timber up to 10 inches in diameter. Other masticators are more effective for use in brushes or surface fuels. Mowing and mastication do not actually reduce the amount of on-site biomass but alter the fuel arrangement to a less combustible profile.

In existing fuel break areas maintenance is crucial especially in areas of encroaching shrubs or trees. In extreme risk areas more intensive fuels treatments may be necessary to keep the fire on the ground surface and reduce flame lengths. Within the fuel break, shrubs should be removed, and the branches of trees should be pruned from the ground surface to a height of 4 to 8 feet, depending on the height of the fuel below the canopy, and thinned with a spacing of at least two to three times the height of the trees to avoid movement of an active fire into the canopy.

Mechanical shears mounted on feller bunchers are used for whole tree removal. The stems are typically hauled off-site for utilization while the limbs are discarded. The discarded material may be masticated, chipped, or burned in order to reduce the wildfire hazard and to speed the recycling of nutrients.

H.3.3 GRAZING

Fuel modifications targeted toward decreasing both vertical and horizontal continuity in fuels is critical as a prevention method against fire proliferation. The primary objectives for these modifications are treating surface fuels and producing low-density and vertically disconnected stands. Goat grazing is an effective, nontoxic, nonpolluting, and practically carbon-neutral vegetation treatment method. A goat grazing system typically consists of a high density of goats enclosed by a metallic or electrified fence guided by herders. Goats feed on a variety of foliage and twigs from herbaceous vegetation and woody plants (Lovreglio et al. 2014).

H.3.4 PRESCRIBED BURNING

Prescribed burning is also a useful tool to reduce the threat of extreme fire behavior by removing excessive standing plant material, litter, and wood debris while limiting the encroachment of shrubby vegetation. Where possible, prescribed fire could occur on public land since fire is ecologically beneficial to this fire-adapted vegetation community and wildlife habitat.

All prescribed fire operations will be conducted in accordance with federal and state laws and regulations. Public safety would be the primary consideration in the design of any prescribed burn plan so as to not negatively impact the WUI. Agency use of prescribed fire on public land would be carried out within the confines of the agency's fire management planning documents and would require individual prescribed burn plans that are developed for specific burn units and consider smoke management concerns and sensitive receptors within the WUI. Smoke monitors could be placed in areas where smoke concerns have been raised in the past.

Following any type of fuels reduction treatment, post-treatment monitoring should continue to ensure that management actions continue to be effective throughout the fire season. The vegetation within this ecosystem can change rapidly in response to drought or moisture from year to year and during the course of the season, so fuels treatments should be adjusted accordingly. To learn more about firing techniques, visit the EFIRE Fire Techniques webpage: https://efire.cnr.ncsu.edu/efire/fire-techniques/.

A maintenance plan outlining a burn schedule may be needed to meet full resource management objectives.

Cultural Burning

Within the Pacific West, fire has historically been a means of forest management and restoration by Indigenous communities (Long et al. 2021). Cultural burning has been defined as the "purposeful use of fire by a cultural group (e.g., family unit, Tribe, clan/moiety, society) for a variety of purposes and outcomes," and is included under the terms Indigenous fire management, Indigenous burning, and Indigenous stewardship (Long et al. 2021).

Rather than focusing solely on fuel reduction, or as a means of wildfire mitigation, cultural burning is done with a more holistic view, under the philosophy of "reciprocal restoration," meaning, as stewardship responsibilities to the land are fulfilled, those actions will in turn benefit the peoples who depend on those

ecosystems (Long et al. 2021). Cultural burning is typically performed with a variety of objectives, such as landscape management, ecosystem and species biodiversity and health, transmission of environmental and cultural knowledge, ceremonies and spiritual wellbeing, a sense of place, and material services (i.e., food, medicine, plan materials, etc.). Extensive site preparation is typically done before a burn, and post-burn monitoring and additional cultural practices are a common factor of the land stewardship tradition (Long et al. 2021).

Impacts of Prescribed Fire on Communities

Prescribed fires can have impacts on air quality that may impact local communities. Impacts on a regional scale are typically only acute when many acres are burned on the same day. Local problems are occasionally acute due to the large quantities of smoke that can be produced in a given area during a short period of time. Residents with respiratory problems may be impacted during these burning periods since smoke consists of small particles of ash, partly consumed fuel, and liquid droplets that are considered air pollutants. Other combustion products include invisible gases such as carbon monoxide, carbon dioxide, hydrocarbons, and small quantities of nitrogen oxides. Nitrogen oxides are usually produced at temperatures only reached in piled or windrowed slash or in very intense wildfires that are uncommon in the region. In general, prescribed fires produce inconsequential amounts of these gases. Inappropriate management of prescribed fires can be bothersome to residents, and it can negatively affect community health.

Smoke from burning vegetation produces air pollutants that are regulated by both the U.S. Environmental Protection Agency (EPA) and the state of California (EPA 2019). Additionally, smoke can increase ambient air pollution levels to a point where it exceeds air quality standards (California Air Resources Board [CARB] 2023). Therefore, effective smoke management is a vital component of planning and conducting prescribed fires (Figures H.5 and H.6). CARB has smoke management guidelines that protect the health and welfare of Californians from the impacts of smoke (CARB 2001). The Yolo-Solano County Air Quality Management District (AQMD) works closely with public wildland management agencies in using prescribed burns to improve or protect wildlands, while minimizing smoke impacts to residents. In Solano County, agencies must register with the state's Prescribed Fire Information Reporting System (PFIRS) and receive authorization from the Yolo-Solano AQMD to start a prescribed burn (Yolo-Solano AQMD 2022).

In addition, the National Wildfire Coordinating Group (NWCG) released the NWCG Smoke Management Guide for Prescribed Fire in 2020 (NWCG 2020). This plan is designed to act as a guide to all those who use prescribed fire. Smoke management techniques, air quality regulations, public perception of prescribed fire, foundational science behind prescribed fire, modeling, smoke tools, air quality impacts, and more are all discussed in this plan. The document is meant to pair with NWCG's Interagency Prescribed Fire Planning and Implementation Procedures Guide for planning and addressing smoke when prescribed fire is used (NWCG 2020). To view the plan, please visit: https://www.nwcg.gov/sites/default/files/publications/pms420-3.pdf.

Effects of smoke can be managed by burning on days when smoke will blow away from smoke-sensitive areas. Precautions are taken when burning near populated areas, highways, airports, and other smoke sensitive areas. Any smoke impact downwind is considered before lighting a fire. Smoke management is a significant component of all prescribed burn plans. Other mitigating actions include alerting the public of upcoming burning activities, including the purpose, best conditions for ensuring good smoke dispersal, duration, size, and location of projects. Land management agencies in the planning area work with the community regarding smoke management and attempt to provide solutions such as the placement of smoke monitors at sensitive sites.

Figure H.5. Photograph showing a joint training burn conducted by the Dixon and Winters Fire Departments, which simultaneously aided in managing invasive weeds within a habitat restoration area.

Thinning and Prescribed Fire Combined

Combining thinning and prescribed fire can be the most effective treatment (Graham et al. 2004). In forests where fire exclusion or disease has created a buildup of hazardous fuels, prescribed fire cannot be safely applied, and pre-burn thinning is required. The subsequent use of fire can further reduce residual fuels and reintroduce this ecologically imperative process.

H.3.5   MANAGEMENT OF NON-NATIVE PLANTS

Fuel treatment approaches should always consider the potential for introduction or proliferation of invasive non-native species as a result of management actions. The U.S. Department of Agriculture (USDA) maintains a list of introduced, invasive, and noxious plants by state (USDA 2022). The California Department of Food and Agriculture (CDFA) also maintains a list of plant species that are considered noxious and therefore actionable at the county level. The California Invasive Plant Council (Cal-IPC) provides on its website an inventory of non-native plant species that threaten California's wildlands.

For more info on Cal-IPC's and CDFA's invasive plant lists, please visit the following links:

Cal-IPC: https://www.cal-ipc.org/plants/profiles/

CDFA: https://www.cdfa.ca.gov/plant/ipc/encycloweedia/pdf/CaliforniaNoxiousWeeds.pdf

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APPENDIX I :

Post-Fire Response and Restoration

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CONTENTS

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I.1 POST-FIRE RESPONSE AND REHABILITATION

This appendix is included to provide resources to residents and agencies in navigating the post-fire environment.

The recent increase in severe fires has highlighted the numerous complexities of post-fire response. Research indicates that high-severity burn areas may produce erosion and runoff rates five to ten times higher than the rates produced by moderate-severity burn areas (Sierra Nevada Conservancy 2021). Following a fire, heavy rains may result in widespread floods carrying trees, boulders, and soil through canyons, ultimately damaging communities and critical infrastructure. Following the LNU Lightning Complex fires in 2020, areas of the county have been made more susceptible to post-fire debris flows and rockfalls. Many of these sites are in areas that are already classified as susceptible to landslides, highlighting the need for focused mitigative and preventative activities in areas impacted by wildfire (Multi-Jurisdictional Hazard Mitigation Plan, Solano County Office of Emergency Services [Solano OES] 2022).

There are many facets to post-fire recovery, including but not limited to:

- Ensuring public health and safety, including prompt removal of downed and hazard trees, addressing watershed damage, and mitigating potential flooding.

- Rebuilding communities and assessing economic needs, including securing the financial resources necessary for communities to rebuild homes, business, and infrastructure.

- Restoring the damaged landscape, including restoration of watersheds, soil stabilization, and tree planting.

- Reducing fire risk in the future, including identifying hazard areas and implementing mitigation.

- Prioritizing the needs of vulnerable and disadvantaged communities during response and disaster recovery efforts.

- Reducing post-fire recovery time by replanting native species.

- Ensuring fire protection measures enhance sustainability of restoration projects. For example: introducing prescribed fire to a fire-dependent ecosystem where fire had previously been excluded.

- Retaining downed logs for erosion control and habitat maintenance.

- Evaluating and updating disaster recovery plans every five years to respond to changing needs and characteristics of the community.

- Coordinating with planning, housing, health and human services, and other local, regional or state agencies to develop contingency plans for meeting short-term, temporary housing needs of those displaced during a catastrophic wildfire event.

- Incorporating forecasted impacts from climate change trends and projections of future risk and consideration of policies to address identified risk.

- Updating codes and ordinances to specify procedures and standards for planning and permitting the reconstruction of buildings destroyed by wildfire.

I.1.1 COMMUNITY RESPONSE AND RECOVERY

Recovery of the vegetated landscape is often more straightforward than recovery of the human environment. Assessments of the burned landscape are often well-coordinated through the use of interagency crews who are mobilized immediately after a fire to assess the post-fire environment and make recommendations for rehabilitation efforts.

Residents impacted by fire may need assistance making insurance claims; finding temporary accommodation for themselves, pets, and livestock; rebuilding or repairing damaged property; removing debris and burned trees; stabilizing the land for construction; mitigating potential flood damage; repairing infrastructure; reconnecting to utilities; and mitigating impacts to health. Oftentimes, physical impacts can be mitigated over time, but emotional impacts of the loss and change to surroundings are long-lasting and require support and compassion from the community.

Emergency Assistance: Before, During, and After a Fire

Solano Voluntary Organizations Active in Disaster

Solano Voluntary Organizations Active in Disaster (VOAD) is a collaboration of community agencies that fosters effective service delivery to those affected by disasters in Solano County throughout the disaster cycle – mitigation, preparedness, response, and recovery. By enhancing inter-agency communication and preparedness, Solano VOAD aims to protect the life and property of residents with safe and effective disaster response services. Emergency coordination actions are carried out by involved agencies and trained community volunteers. Groups included under Solano VOAD include organizations such as, American Red Cross, Team Rubicon, and Catholic Charites of Yolo Solano.

To learn more about Solano VOAD, please visit https://blog.volunteernow.org/solano-county-coad/

After the Fire

Rebuilding and recovery from wildfire can vary greatly across income levels and demographics. Rural areas, low-income neighborhoods, and immigrant communities generally do not have the necessary resources it takes to rebuild after a fire. Due to this, many of these areas take more time to recover than those with greater access to resources. In addition, the occurrence of wildfire can worsen existing mental health conditions and lead to post-traumatic stress (PTS), low self-esteem, and depression for at-risk populations (California Governor's Office of Planning and Research [CA GOPR] 2020).

Returning Home

First and foremost, follow the advice and recommendations of emergency management agencies, fire departments, utility providers, and local aid organizations regarding activities following the wildfire. Do not attempt to return to your home until authorities have deemed it safe to do so.

When driving, watch for trees, brush, and rock which may have been weakened or loosened by the fire. Be aware of any damage or debris on roads and driveways. Traffic may be delayed, or lanes closed due to response operations. (Returning Home After a Wildfire, CAL FIRE 2020b).

Expect that utility infrastructure may have been damaged and repairs may be necessary. When you return home, check for hazards, such as gas or water leaks and electrical shorts. Turn off damaged utilities if you did not do so previously. Request that the fire department or utility companies turn the

utilities back on once the area is secured. Similarly, water supply systems may have been damaged; do not drink from the tap until you have been advised that it is safe to do so. Finally, keep a "fire watch"; look for smoke or sparks in houses and other buildings. (Post-wildfire Recovery, CAL FIRE 2019b):

Community Safety: Post-Fire Floods and Debris Flows

There are numerous natural hazards after a wildfire. Perhaps the most dangerous are potential flash floods and landslides following rainfall in a burned area upstream of a community. Wildfires increase the risk of flooding because burned soil is unable to absorb rainfall and it becomes hydrophobic. Factors that contribute to flooding and debris flows are steep slopes, heavy rainfall, weak or loose rock and soil, and improper construction and grading. Even small rainfall can cause a flash flood, transporting debris and damaging homes and other structures. Listen and look for emergency updates, weather reports, and flash flood warnings (California Department of Conservation 2019). Develop an evacuation plan with your family and stay away from waterways, storm channels, and arroyos. Be aware of your risk, pay attention to weather forecasts, listen to local authorities, and have a household inventory with copies of critical documents (California Department of Water Resources 2021).

Post-Fire Rehabilitation and Resources

Wildfires that cause extensive damage necessitate dedicated efforts to avert issues afterwards. As aforementioned, loss of vegetation increases soil susceptibility to erosion; water runoff may increase and lead to flooding; sediments and debris may be transported downstream and damage properties or saturate reservoirs putting endangered species and water reserves at risk (After the Fire, U.S. Forest Service [USFS] n.d.(b)). Following a fire, the primary priority is emergency stabilization to prevent additional damage to life, property, or natural resources. The soil stabilization work starts immediately and may proceed for up to a year. The rehabilitation effort to restore damage caused by the fire starts after the fire is out and may persist for many years. For the most part, rehabilitation efforts focus on the lands not likely to recover naturally from wildfire damage (After the Fire, USFS n.d.(b)).

The USFS's post-fire emergency stabilization program is called the Burned Area Emergency Response (BAER) program. The goal of the BAER program is to discover post-wildfire threats to human life and safety, property, and critical natural or cultural resources on USFS lands and take appropriate actions to mitigate unacceptable risks (National Interagency Fire Center [NIFC] 2022). BAER teams are composed of trained professionals from different fields, including soil scientists, engineers, hydrologists, biologists, botanists, archaeologists, and others who quickly assess the burned area and advise emergency stabilization treatments (NIFC 2022).

The Natural Resources Conservation Service (NRCS) Emergency Watershed Protection (EWP) program provides technical and financial services for watershed repair on public (state and local) and private land. The goal is reduced flood risk via funding and expert advice for land treatments. The EWP program can provide up to 75% funding for qualifying projects; remaining funds may be paid with in-kind volunteer labor (Coalition for the Upper South Platte [CUSP] 2016). This funding is used by the State Emergency Rehabilitation Team (a multi-agency group assembled by the NRCS) to develop specific recovery and treatment plans.

Examples of potential treatments include (USFS 2021):

- Hillside stabilization (for example: placing bundles of straw parallel to the slope to slow erosion)

- Hazard tree cutting

- Felling trees perpendicular to the slope contour to reduce runoff

- Mulching areas seeded with native vegetation

- Stream enhancements and construction of catchments to control erosion, runoff, and debris flows

- Planting or seeding native species to limit spread of invasive species

The USFS provides a science-based framework to guide post-fire restoration efforts in National Forest lands in California. The framework is based on a five-step process that leads to the development of a restoration portfolio that can inform project planning and monitoring (USFS 2021). The framework is available at: https://www.fs.usda.gov/psw/publications/documents/psw_gtr270/psw_gtr270.pdf

A comparison of potential hillside, channel, and road treatments is available at: https://www.afterwildfirenm.org/post-fire-treatments/which-treatment-do-i-use

Specific Treatment Details

Hillslope Treatments

Cover Applications:

Dry mulch: provides immediate ground cover with mulch to reduce erosion and downstream flow.

Wet mulch (hydromulch): provides immediate cover to hold moisture and seeds on slopes using a combination of organic fibers, glue, suspension agents, and seeds (most effective on inaccessible slopes).

Slash spreading: provides ground cover to reduce erosion by felling trees in burned areas.

Seeding: reduces soil erosion over time with an application of native seed mixtures (most successful in combination with mulching). Breaking up and loosening topsoil to break down the hydrophobic layer on top of the soil is also effective.

Erosion Barrier Applications:

Erosion control mat: organic mats staked on the soil surface to provide stability for vegetation establishment.

Log erosion barrier: trees felled perpendicular to the hillslope to slow runoff.

Fiber rolls (wattles): rolls placed perpendicular to the hillslope to reduce surface flows and reduce erosion.

Silt fencing: permeable fabric fencing installed parallel to the slope contour to trap sediment as water flows down the hillslope.

Channel Treatments

Check dam: small dams built to trap and store sediment in stream channels.

In-channel tree felling: felling trees in a staggered pattern in a channel to trap debris and sediment.

Grade stabilizer: structures made of natural materials placed in ephemeral channels for stabilization.

Stream bank armoring: reinforcing streambanks with natural materials to reduce bank cutting during stream flow.

Channel deflector: an engineered structure to direct flow away from unstable banks or nearby roads.

Debris basin: constructed to store large amounts of sediment moving in a stream channel.

Road and Trail Treatments

Outsloping and rolling dips (water bars): alter the road shape or template to disperse water and reduce erosion.

Overflow structures: protect the road by controlling runoff and diverting stream flow to constructed channels.

Low water stream crossing: culverts replaced by natural fords to prevent stream diversion and keep water in the natural channel.

Culvert modification: upgrading culvert size to prevent road damage.

Debris rack and deflectors: structure placed in a stream channel to collect debris before reaching a culvert.

Riser pipes: filter out debris and allow the passage of water in stream channels.

Catchment-basin cleanout: using machinery to clean debris and sediment out of stream channels and catchment basins.

Trail stabilization: constructing water bars and spillways to provide drainage away from the trail surface.

These treatments and descriptions are further detailed at: https://afterwildfirenm.org/post-fire-treatments/treatment-descriptions

For more information about how to install and build treatments, see the Wildfire Restoration Handbook at: https://www.rmfi.org/sites/default/files/hero-content-files/Fire-Restoration-HandbookDraft_2015_2.compressed_0.pdf

Timber Salvage

Trees remaining post-fire can be instrumental for soil and wildlife habitat recovery, but dead standing trees may also pose safety concerns and fuel loadings may still be conducive to future high intensity wildfires. Burned soil is especially susceptible to soil compaction and erosion so it is recommended to have professionals perform the timber salvage. Several programs assist landowners with timber salvage, including the NRCS Environmental Quality Incentives Program (EQIP) (CUSP 2016).

Invasive Species Management and Native Revegetation

Wildfire provides an opportunity for many invasive species to dominate the landscape because many of these species thrive on recently burned landscapes. It is imperative that landowners prevent invasive establishment by eradicating weeds early, planting native species, and limiting invasive seed dispersal (CUSP 2016).

Planting native seeds is an economical way to restore a disturbed landscape. Vegetation provides protection against erosion and stabilizes exposed soils. To be successful, seeds must be planted during

the proper time of year and using correct techniques. Use a native seed mixture with a diversity of species and consider the species' ability to compete with invasive species. Before planting, the seedbed must be prepared with topsoil and by raking to break up the hydrophobic soil layer. If you choose to transplant or plant native species, consider whether the landscape has made a sufficient recovery to ensure the safety of the individuals (CUSP 2016).

Long-Term Community Recovery

On non-federal land, recovery efforts are the responsibility of local governments and private landowners. Challenges associated with long-term recovery include homes that were severely damaged or were saved but are in high severity burn areas. Furthermore, homes saved but located on unstable slopes or in areas in danger of flooding or landslides present a more complicated challenge. Economically, essential businesses that were burned or were otherwise forced to close pose a challenge to communities of all sizes. Given these complications, rebuilding and recovery efforts can last for years, with invasive species control and ecosystem restoration lasting even longer (CUSP 2016). It is critical that a long-term plan is in place and there is sufficient funding and support for all necessary ecosystem and community recovery.

APPENDIX J :

Mitigation Strategies – Project Recommendations

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Table J.1 Recommendations to Create Resilient Landscapes (Fuel Treatments)

Project ID	Status	Priority (H,M,L)	Suggested Timeline	Project Description	Location	Partners and/or Collaborating Agencies	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Potential Funding Sources
#1		M	Spring 2025	Conduct a gap analysis for existing vegetation management plans (e.g., department of public works and city plans) to determine needs. • Develop vegetation management plans and programs at the city level for cities without plans.	Solano County and all cities	Solano County, public, local municipalities	Based on the findings of the gap analysis, create a multijurisdictional vegetation management plan that addresses deficiencies. Topics for consideration include: • Tailoring vegetation management practices to areas that are prone to human ignitions (e.g., fireworks, cigarettes, vehicles, mowing accidents, etc.) • Fuel loading along creeks and ditches • Dead and dying vegetation • Roadside fuels • Implementation and maintenance of fuel breaks in high-risk areas • Vegetation maintenance schedule • Marsh fires • Vegetation clearance and maintenance around communication infrastructure/towers • Coordinating fuel reduction efforts between adjacent jurisdictions • Native vegetation restoration (e.g., oak woodland, chaparral) especially in the LNU burn scar For existing, in progress, or proposed city-level vegetation management plans (e.g., Benicia Open Space Vegetation Management Plan), ensure that plans are integrated with the proposed countywide vegetation management plan	• Reduce hazardous fuels throughout the county • Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI • Ensure the protection of vulnerable ecosystems and values at risk	• As needed	• CAL FIRE Forest Health Grants • California EPA Loans and Grants • USFS CWDG • California Climate Investments Fire Prevention Grant Program (CAL FIRE)
#2		M	Fall 2024	Address invasive species through the framework of fuels management.	Solano County public land	Solano County and Solano RCD	Develop and implement a countywide strategic invasive species management plan to address invasive plant species in the county, including oleander, eucalyptus, star thistle, and Arundo. This strategic plan should prioritize species and occurrences of species for subsequent treatment. • Investigate the viability of establishing an ordinance (or applying an existing one) for compliance on private lands. ◦ Ordinance to potentially include language that restricts the planting of non-native plants • Develop a vegetation management plan for public lands. • Explore the use of prescribed fire in managing invasive species.	• Ensure the protection of vulnerable ecosystems • Create and restore resilient landscapes	Revise and review strategy on an annual basis. Track yearly progress.	• USFS CWDG Grants • FEMA BRIC Grants • California EPA Loans and Grants • CAL FIRE Forest Health Grants
#3		H	Ongoing	Use the risk assessment to identify priority areas for treatments to determine compliance requirements (e.g., CEQA, CalVTP).	High- and extreme-risk areas within Solano County	Solano County and Solano Fire Safe Council	Utilize the risk assessment to identify areas in need of fuels treatments and commence the initial study to determine the project's impact to the environment	• Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI • Protect communities and critical infrastructure and facilities	• As needed	• USFS CWDG Grants • CAL FIRE Grant Programs • FEMA BRIC Grants • California Fire Safe Council Grants • NFPA Firewise Grants

Project ID	Status	Priority (H,M,L)	Suggested Timeline	Project Description	Location	Partners and/or Collaborating Agencies	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Potential Funding Sources
#4		H	Ongoing	Address hazardous fuels along riparian corridors by delineating areas for potential treatment based on compliance requirements and suitability.	Solano County	Solano County, public landowners, Solano Fire Safe Council	Solano County to work with landowners and jurisdictions to reduce hazardous fuels in riparian corridors. • Work with CDFW to determine feasible projects and to ensure compliance with Fish and Game Code Section 1602. ○ CDFW strongly encourages landowners and project proponents to pre-consult with CDFW early in the process to ensure any impacts to special-status animals and plants are resolved and any required permits are obtained. Potential methods or combinations include: • Selective thinning, removal of hazardous snags, removal of dead and downed vegetation, chip and haul, herbivory control (goats, sheep and/or cattle), and prescribed burning	• Reduce fuel continuity within communities and create resilient landscapes • Restore riparian ecosystem health • Provide for safe and effective wildfire response capabilities	• As needed; frequent maintenance may be required since riparian vegetation grows quickly.	• CAL FIRE Grant Programs • USFS CWDG Grants • FEMA BRIC Grant • USDA Emergency Conservation Program
#5		H	Ongoing	Install strategic fuel breaks throughout the county based on findings of the risk assessment. • Fuel breaks should be designed according to site-specific conditions. • Invasive species management should be considered when planning and designing fuel breaks. • Potential methods include prescribed burning, grazing, and mechanical.	Solano County	Solano County, private landowners, CAL FIRE, Solano Fire Safe Council	Install fuel breaks in high-risk areas and prioritize underserved and rural areas. Potential fuel break locations include: • Along ridges, rivers, and roads • Areas that support the protection of the WUI • Ridgetop of Napa County–Solano County border • Valley floors, where grasslands meet or intermingle with communities • Around communities surrounded with rolling hills and grasslands • Communities surrounded by steep topography and heavy fuel loading • Around critical facilities and infrastructure (e.g., communications) • Along greenbelts Conceptual examples include: • The Green Valley fuel break • Benicia goat grazing plan • Expanding existing road networks to act as fuel breaks • Linking in fuel breaks to existing burn scars (e.g., LNU); removing dead fuels and regrowth within burn scars where necessary • Opening natural breaks in vegetation along the creeks and ditches, particularly where they enter community boundaries	• Provide access to fire personnel • Establish fuel breaks and fire containment lines • Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI • Protect communities and critical infrastructure and facilities	• Regular maintenance is needed to maintain fuel break effectiveness.	• USFS CWDG Grants • CAL FIRE Grant Programs • FEMA BRIC Grants • California Fire Safe Council Grants • NFPA Firewise Grants
#6		H	Ongoing	Collaborate with Napa and Yolo Counties to enhance landscape resiliency and hazardous fuels reduction at the regional level.	Solano, Napa, and Yolo Counties	Solano OES, Solano Fire Safe Council, Napa Firewise Foundation, Napa County Fire Safe Council Yolo County Fire Safe Council	Work collaboratively with entities in Napa and Yolo Counties to facilitate and streamline fuels reduction projects. • Share data, shapefiles, maps, and documents • Identify and list priority projects for all counties that occur at or around county boundaries • Share ideas and strategies that enhance successful project implementation	• Enhance regional landscape resiliency • Streamline fuel reduction projects • Reduce duplication of efforts	• As needed	• N/A

Project ID	Status	Priority (H,M,L)	Suggested Timeline	Project Description	Location	Partners and/or Collaborating Agencies	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Potential Funding Sources
#7		H	Fall 2024	Establish a prescribed burn association.	Solano, Napa, and Yolo Counties	Solano Fire Safe Council, Solano RCD, Yolo-Solano AQMD, Bay Area AQMD	Solano Fire Safe Council to: • Seek funding for equipment and training needs • Collaborate with Yolo County RCD and other RCDs • Build upon existing structure and momentum of Yolo RCD's program • Assess opportunities to use prescribed fire for restoration (e.g., oak woodlands) and to introduce cultural burning as well as increase wildfire resiliency o The Sonoma County Regional Parks agency has a good model program for prescribed and cultural burning (https://parks.sonomacounty.ca.gov/learn/natural-resources/prescribed-fire) The Yolo-Solano Air Quality Management District (AQMD) is interested and fully supports a prescribed burn association. Raise awareness of benefits for prescribed fire as an ecological practice that can control invasive species and increase wildfire resilience. • Partner with local experts, environmental organizations, fire departments, and other agencies to create a framework for the use of prescribed fire for invasive species management. • Develop educational materials and demonstrations. • Advocate for policy support.	• Enhance regional landscape resiliency • Streamline prescribed burn projects • Reduce hazardous fuel loading • Potentially restore landscapes	N/A	• CAL FIRE Grant Programs • USFS CWDG Grants • California Fire Safe Council Grants
#8		M	Winter 2023	Investigate the feasibility of funding fuels management crews.	Solano County	Solano County, Solano Fire Safe Council	Fuels management crews can be utilized as a countywide resource to provide support during incident response, and they can achieve significant progress in fuels reduction projects.	• Reduce fuel loading and continuity within communities and create resilient landscapes • Streamline fuel reduction projects	N/A	• CAL FIRE Grant Programs • USFS CWDG Grants • FEMA BRIC Grants
#9		H	Fall 2025	Establish a regional grazing plan.	Solano County	Solano County, Solano Fire Safe Council, private landowners, Solano RCD, HOAs, Solano Land Trust, Travis AFB, Solano RCD	Establish a regional partnership with USDA to create paddock grazing areas. • Work with Solano County Farm Bureau to develop a regional grazing plan. • Pleasants Valley Agricultural Association, Solano Water Agency, and city agencies to create priority fuel-breaks around each of the cities and unincorporated areas. • The use of grazing should be prioritized in small paddock areas 30 to 50 feet from rear yard. • Potential impacts to water quality should be evaluated when developing the plan.	• Reduce fuel loading and continuity within and around communities • Enhance regional landscape resiliency	• As determined by plan	• CAL FIRE Grant Programs • USFS CWDG Grants

Note: See Appendix A to consult relevant regulations and past planning efforts

Table J.2. Recommendations for Creating Fire-Adapted Communities (Public Education and Reducing Structural Ignitability)

Project ID	Status	Priority (H,M,L)	Suggested Timeline	Project Description	Location	Partners and/or Collaborating Agencies	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Potential Funding Sources
#1		H	Spring 2025	Create a countywide ordinance to address hazardous fuels on private property.	Solano County	Solano County	Investigate the viability of enacting a countywide fuels (vegetation) and ignitable material ordinance with authority to mandate compliance. Ordinance would address: • Regular vegetation management on entire property in accordance with CAL FIRE's defensible space standards • Enforcement of the County's adopted WUI code • Fire code amendments to address ladder fuels and fuel continuity • Hazardous fuels and ignitable material buildup on property • Unmanaged properties with absentee landowners	• Reduce loss of life and structures through fuels management	• Ensure yearly compliance ahead of main historic fire season.	• USFS CWDG • California Fire Safe Council Grants • CAL FIRE Wildfire Prevention Grants

#2		H	Fall 2025	Create a countywide ordinance regarding emergency access as well as right-of-entry agreements for fuels work.	Solano County	Solano County	Investigate the feasibility of establishing a countywide ordinance to address:
							• Emergency access (agreements with local fire departments)
							  o Fire responders currently have access to locked gates within the system, but there are gates that are not within the system.
							  o Standardized keys are needed.
							  o Standardization of property addressing requirements (wayfaring, signage, and readability)
							• Project access for fuels (project by project basis right of entry agreements)
							  o Codify right-of-entry and access usage agreements.
							Develop a digital mapping resource where information can be readily shared with out-of-area resources during an incident.
							Utilize Vacaville Fire Protection District's program for emergency access as a model for other areas.
								• Improve emergency response
								• Streamline fuels work
									• As needed	• USFS CWDG
										• California Fire Safe Council Grants
										• CAL FIRE Wildfire Prevention Grants

#3		H	Ongoing	Develop a comprehensive public education and community engagement program.	Solano County	Solano Fire Safe Council	Solano Fire Safe Council to: • Collaborate with local Fire Safe Councils to provide community-specific property owner education media, including videos (demonstration projects on private property) • Provide an initial communication (announcement) to residents, including short-term residents, living in the WUI that contains a copy of Solano County's WUI ordinance, CAL FIRE's defensible space standards, Fire Safe Council contacts, and fire district information for help and questions. o Utilize the county assessor records to identify changes in property ownership to send the communication to new residents. • Inform landowners about what they can and cannot do with respect to treating riparian areas.	• Reduce wildfire risk through community collaboration • Protect communities and valued resources by raising awareness of community residents and those staying in the area about actions that can prevent fires • Engage and involve community members	• Review and revise strategy on an annual basis	• FEMA Building Resilient Infrastructure and Communities (BRIC) Grants • USFS CWDG • EPA Environmental Education Grants • CAL FIRE Grant Programs • California Fire Safe Council Grants

Project ID	Status	Priority (H,M,L)	Suggested Timeline	Project Description	Location	Partners and/or Collaborating Agencies	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Potential Funding Sources
							o Develop educational materials for addressing riparian fuels.			

Methodology/Approach continued:

- o Develop educational materials for addressing riparian fuels.
- o Create and distribute maps with riparian corridors.
- o Notify landowners about Fish and Game Code Section 1602.
- o CDFW strongly encourages landowners and project proponents to pre-consult with CDFW early in the process to ensure any impacts to special-status animals and plants are resolved and any required permits are obtained.
- Reach out to landowners along main transportation corridors to inform about the importance of disc lines/fire breaks as a wildfire mitigation tool.
- Increase awareness and knowledge through community workshops and training classes on defensible space, fire safe landscaping, structural hardening, planting and clearance around power poles, and proper use of equipment (e.g., mowers and power tools that are potential sources of ignition).
- Establish a training program to instruct residents about the appropriate protocols for using prescribed fire.
- Increase awareness about common human ignitions and associated dangers (e.g., fireworks, cigarettes, vehicles, etc.).
- Identify areas with high frequencies of human ignitions to focus educational efforts
- Establish a program to have Fire Safe Council volunteers perform a walkthrough with residents in high-risk areas and provide a writeup of potential mitigation actions, including sufficient access for emergency responders (advisory only not enforceable, CAL FIRE and local fire departments to train Fire Safe Council members to conduct assessments).
- Increase awareness about the invasive plant countywide strategic plan and related statewide ordinances as well as the benefits of replanting or encouraging native vegetation.
- Increase awareness and knowledge about the benefits of cultural burning.
- Ensure inclusivity and support for vulnerable populations (e.g., disabled residents, low-income individuals, non-English speakers, etc.) in wildfire planning, preparedness, and response efforts.
- Increase awareness throughout the county about intentional fires caused by criminal activity.
  - o Encourage residents to be vigilant and report suspicious activity to the relevant authorities.
- Develop an online version of the Plan, building from the Plan hub site. Develop story map and

Project ID	Status	Priority (H,M,L)	Suggested Timeline	Project Description	Location	Partners and/or Collaborating Agencies	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Potential Funding Sources
							web map content to increase access by residents to the plan and data. • Program to be administrated by Solano County Fire Safe Council.			
#4		H	Fall 2024	Promote and expand a countywide program to assist property owners with 1) defensible space and home hardening measures; 2) addressing and signage; and 3) green waste disposal.	Solano County	Solano County and Solano Fire Safe Council	Solano County and Solano Fire Safe Council to: • Conduct an initial assessment to identify service gaps. • Integrate this program with educational programs. • Integrate this program with potential countywide hazardous fuels ordinances (see FAC #1). • Procure chippers to support fire mitigation work. ○ Local fire departments, Fire Protection Districts, or CAL FIRE to administer the chipper program • Establish a defensible space and home hardening assistance program. • Create a program to assist homeowners with removal of invasive species (e.g., eucalyptus). • Create an addressing and signage assistance program to help residents with addressing issues and community signage. • Prioritize efforts in high-risk, underserved, and rural communities. • Establish a wildfire mitigation assistance program for disabled, elderly, and low-income residents. • Establish a green waste disposal program to support residents in conducting their own vegetation removal.	• Support community defensible space efforts • Reduce fuel loading within the community • Protect life and property by mitigating fuels	• Establish a program to assess frequency of activities.	• FEMA BRIC Grants • USFS CWDG • Firewise Grants • California Fire Safe Council Grants • Good Neighbor Citizenship Grant • CAL FIRE Wildfire Prevention Grants • Team Rubicon (provides free fire mitigation services to individual homeowners; see Appendix I; coordinate through a Fire Safe Council)
#5		H	Spring 2025	Conduct an initial assessment of ingress and egress issues to identify service/planning gaps regarding evacuation efforts.	Solano County	Solano County	• Perform an assessment to identify problem roads and potential solutions. • Prioritize high-risk areas with known evacuation issues, e.g., Pleasants Valley, Green Valley, Rural Vacaville, etc. • Identify temporary refuge areas or potential ones on public or private property (if there are agreements with landowners). • Explore feasibility of adding additional access points and widening existing roads. • Prioritize the maintenance of fire access roads. • Create and maintain a map with emergency access roads. • Assess evacuation route impacts in areas with limited access when considering land use or zoning changes.	• Enhance evacuation efforts • Protect life and lessen the risk of entrapment • Improve community preparedness	• Yearly assessment of progress and needs	• FEMA BRIC Grants • FEMA Fire Management Assistance Grant • USFS CWDG • Assistance to Firefighters Grants
#6		H	Ongoing	Increase awareness of the emergency notification system.	Solano County	Solano County	• Inform residents in areas with poor coverage about receiving alerts and using alternative methods to receive messages. • Increase opt-ins to Alert Solano. • Assess feasibility of supplementing existing systems with PulsePoint (PG&E has started local efforts).	• Enhance effectiveness of public messaging and safety	• Periodic testing to ensure the system is working correctly	• USFS CWDG • CAL FIRE Wildfire Prevention Grants • California Fire Safe Council Grants

Project ID	Status	Priority (H,M,L)	Suggested Timeline	Project Description	Location	Partners and/or Collaborating Agencies	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Potential Funding Sources
#7		H	Ongoing	Maintain roadside clearance along highways.	Solano County	Caltrans	Solano County to outreach Caltrans, county public works, and other appropriate agencies to ensure that proper roadside clearance is maintained along the main transportation corridors. • Convey fire risk to appropriate agencies and/or jurisdictions. • Address landslide-prone roadside slopes to ensure that evacuation routes remain navigable.	• Reduce roadside ignitions	• Regular maintenance needed (Caltrans standards)	N/A
#8		H	Ongoing	Partner and work with adjacent counties to collaborate on mutually beneficial projects and initiatives.	Solano County and adjacent counties	Solano Fire Safe Council	Solano Fire Safe Council to continue developing existing relationships with adjacent counties' RCDs and Fire Safe Councils.	• Enhance regional landscape resiliency • Streamline fuel reduction and public education projects • Increase resources and access to information	N/A	• USFS CWDG • CAL FIRE Wildfire Prevention Grants • California Fire Safe Council Grants
#9		M	Spring 2024	Assess opportunities to expand the Ag Pass program to include non-commercial operations and small-scale ranchers	Solano County	Solano Fire Safe Council	Consider updating the minimum requirements to allow small-scale and/or non-commercial ranchers to qualify for the program Increase capabilities of the Solano CART program, allowing for the evacuation of livestock and other animals. Investigate the feasibility of creating an online or hybrid training course for the Ag Pass program to enhance program accessibility.	• Support community evacuation planning	N/A	• California Fire Foundation Grant Program • USFS CWDG
#10		M	Fall 2024	Work with landowners to improve local access	Solano County	Solano County, Solano Fire Safe Council, private landowners	Assess landowner interest in: • Improving access in private roads for emergency access (e.g., Sky Ranch Rd) Providing staging areas for fire response operations	• Improve responder access and safety • Enhance resident evacuations	N/A	• USFS CWDG • CAL FIRE Wildfire Prevention Grants • California Fire Safe Council Grants

Note: See Appendix A to consult relevant regulations and past planning efforts.

Table J.3. Recommendations for Safe and Effective Wildfire Response

Project ID	Status	Priority (H,M,L)	Suggested Timeline	Project Description	Location	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Potential Funding Sources
#1		H	Spring 2025	Continuing working towards countywide fire and EMS services	Solano County	Consolidation of fire and EMS services.	• Enhance coordination between response agencies • Protect life and property through Improved firefighting response • Facilitate multi-agency coordination • Enhance emergency notifications such as evacuation orders	• Follow existing maintenance schedule	• FEMA Regional Catastrophic Preparedness Grants • USFS Community Wildfire Defense Grant (CWDG) • FEMA Building Resilient Infrastructure and Communities Grants (BRIC) • Fire Management Assistance Grant • California Fire Safe Council Grants
#2		H	Summer 2024	Investigate dedicated countywide fire marshal and wildfire coordinator positions.	Solano County	Explore feasibility of creating a dedicated (permanent) countywide fire marshal and wildfire coordinator positions. • Fire marshal to have authority to create and enforce vegetation- and fire-related ordinances with the concurrence of the County Board of Supervisors. • The wildfire coordinator position is currently grant funded.	• Enhance fire prevention and protection efforts • Protect communities and valued resources through code enforcement • Streamline wildfire mitigation efforts • Increase grant opportunities	• Ensure yearly compliance ahead of main historic fire season	• Staffing for Adequate Fire and Emergency Response (SAFER) • USFS CWDG
#3		H	Winter 2024	Investigate a countywide interoperable public safety communications system.	Solano County	Solano County and all cities to expand existing public safety communications system to support countywide interoperability.	• Improve first responder safety • Improve communication & response during mutual aid incidents	• Scheduled maintenance of the system as needed	• FEMA RPC Grants • FEMA Fire Prevention and Safety Grants • FEMA BRIC Grants • USFS CWDG

#4		H	Ongoing	Investigate ways to support fire prevention and protection services in the unincorporated and rural areas.	Solano County	Identify fiscal support for fire protection districts with underserved communities.
						Investigate the feasibility of:
						• Establishing a dedicated tax to support fire prevention and protection efforts such as fixing fire stations, upgrading vehicles and equipment, and increasing staff (see Project FR #8)
						• Investigate the feasibility of consolidation between fire departments and fire protection districts
						• Develop and implement seasonal wildland firefighters, hand crews (project work, manage chipper program), resident/sleeper/student firefighters (sleep at stations), improve response times.
						• Increasing capacity in communities with expanding development (e.g., Pleasants Valley)
						• Promoting volunteerism and recruitment; potential actions include:
						  o Expanding the high school Fire Explorer program
						  o Creating an apprentice firefighter program where qualifications can be attained through different avenues (e.g., seasonal firefighter, resident firefighter, volunteer firefighter)
							• Reduce wildfire risk through greater capacity for wildfire prevention and response
							• Protect life and property through improved firefighting response
								• Assess capacity on an annual basis	• FEMA Assistance to Firefighters Grants
									• FEMA Staffing for Adequate Fire and Emergency Response
									• GSA-Federal Excess Personal Property (GSA)
									• California Fire Foundation Grant Program
									• USFS CWDG

Project ID	Status	Priority (H,M,L)	Suggested Timeline	Project Description	Location	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Potential Funding Sources
#5		H	Ongoing	Supplement budget allocations to Solano OES to support preparedness, planning, response, and recovery.	Solano County	Solano County to explore the viability of: • Increasing position allocations to support Solano OES's mission, including wildfire preparedness, prevention, response, and recovery	• Protect life and property through expanded public education, public alerting, planning, and grant funding opportunities	• As needed	• FEMA BRIC Grants • FEMA SAFER • California Fire Foundation Grant Program • USFS CWDG
#6		M	Fall 2025	Assess water supply in rural areas near critical infrastructure.	Solano County	• Evaluate the level of need and potential solutions. • Identify voluntary measures that would help support greater provision of water for fire suppression use – i.e., encourage installation of water tanks on private lands, establish voluntary water use agreements with ranchers and farmers for water use during fire events, etc. • Develop public education materials to address available water supplies.	• Protect life and property though Improved firefighting response • Improve firefighter safety	• As needed	• FEMA BRIC Grants • USFS CWDG • 2022 Infrastructure and Jobs Act
#7		M	Summer 2024	Identify and create a map of environmentally sensitive areas.	Solano County	Develop maps and create a spatial database that show the location of: • Areas where soil may not be disturbed due to sensitive cultural and natural resources or soil contamination • Off-limits water resources (e.g., contaminated water) • Develop internal and external versions of these maps with a key for internal use • Distribute maps to all fire departments and fire protection districts, CAL FIRE, and other agencies involved in fire response	• Enhance firefighter safety • Protect life and property though Improved firefighting response • Ensure the protection of sensitive ecosystems	• Revise map as needed	• USFS CWDG Grants • CAL FIRE Grant Programs • California EPA Loans and Grants
#8		H	Spring 2023	Assess the viability of establishing a dedicated tax to support countywide fire prevention, preparedness, response, and recovery efforts.	Solano County	Apply for grant funding to support the development of individual fire department and fire protection district annexes that will include more detailed analysis of conditions and more detailed mitigation recommendations than can be provided in a countywide CWPP	• Support fire prevention, preparedness, and response at a finer scale	• As needed	• USFS CWDG Grants • CAL FIRE Grant Programs