



**NAPAFIREWISE**

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Berryessa West Fire Safe Council  
Community Wildfire Protection Plan  
July 2025



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## Executive Summary

The Berryessa West Fire Safe Council (BWFSC) has developed this Community Wildfire Protection Plan (CWPP); a CWPP is a community-based plan focused on identifying and addressing specific local hazards and risks from wildfire. It determines what is at risk and provides a road map of actions for a community to address the wildfire threat. It may also open up funding opportunities to implement the plan. CWPPs are authorized and defined in Title I of the Healthy Forests Restoration Act (HFRA), passed by Congress in 2003.

The area included within the BWFSC has had an active fire history, which brings focus to this plan. It is understood that not all fires can be prevented, but appropriate vegetation management and other mitigation practices can minimize the impact and destruction of Wildfires.

### **Decision Makers**

The following community representatives collaborated in the development of the CWPP:

- BWFSC
- Napa Communities Firewise Foundation (NCFE)
- CAL FIRE/Napa County Fire Department
- Napa County Board of Supervisors

### **Community Evaluation**

A Community Evaluation was engaged by NCFE and the BWFSC and prepared by Carol Rice, Wildland Res Mgt, a wildland fire manager specializing in wildland fire risk issues, and includes input from the BWFSC community, including local government, non-profits and local fire authorities. The Evaluation serves as a foundation for recommendations for projects to minimize threat from wildfire to life safety and damage to homes and natural resources. It is based on a review of the terrain, weather, fuels, and fire history of the area, compared to the values at risk, and likely scenarios of fire ignition and spread.

## Introduction

Fire hazard is a special concern in the Berryessa West area in central Napa County. The area is located in the interface between wildlands and developed areas where fires may spread from wildlands to homes, possibly damaging structures or even threatening lives. Conversely, wildlands are subject to increased ignition potential from elevated levels of human activities. Most fires in Napa County are human caused<sup>1</sup>.

This evaluation serves as a platform for recommendations for projects to minimize threat to life safety and damage from wildfire to homes and natural resources. It is based on a review of the

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<sup>1</sup> <https://www.nps.gov/articles/wildfire-causes-and-evaluation.htm>

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terrain, weather, fuels and recent fire history of the area, compared to the values at risk, and likely scenarios of fire ignition and spread.

The Berryessa West community boundary covers 9,677 acres in central Napa County and is fully within the organized Berryessa West Fire Safe Council. The community is sandwiched between Lake Berryessa to the east, Cedar Roughs Wilderness and the Pope Valley FSC to the west, and Berryessa Vista Wilderness Park to the south. It is generally a remote area; Walter Springs is the closest town to the north.



Within this area, data records show approximately 281 parcels and 369 structures. Elevation ranges from 430 feet along the western edge of Lake Berryessa to over 2,280 feet at the peak of Iron Mountain. The area is best characterized by steep and rugged terrain in the southern portion as well as to the west of the area boundary, with gentler slopes in the northern portion. It borders Lake Berryessa, a major geographical feature in Napa County. The residential area in the northeast is situated at lower elevations near the Lake Berryessa shore.

There are many rural residents within the Berryessa West community boundary. They are mostly concentrated in the northeastern portion of the area where the Berryessa Pines residential subdivision is located, as well as in the southeastern portion near the Spanish Flat

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RV resort. Outside the boundary, there are more dispersed homes stretching along Capell Valley to the south and throughout Pope Valley to the west.



More details on each will be presented in the following sections.

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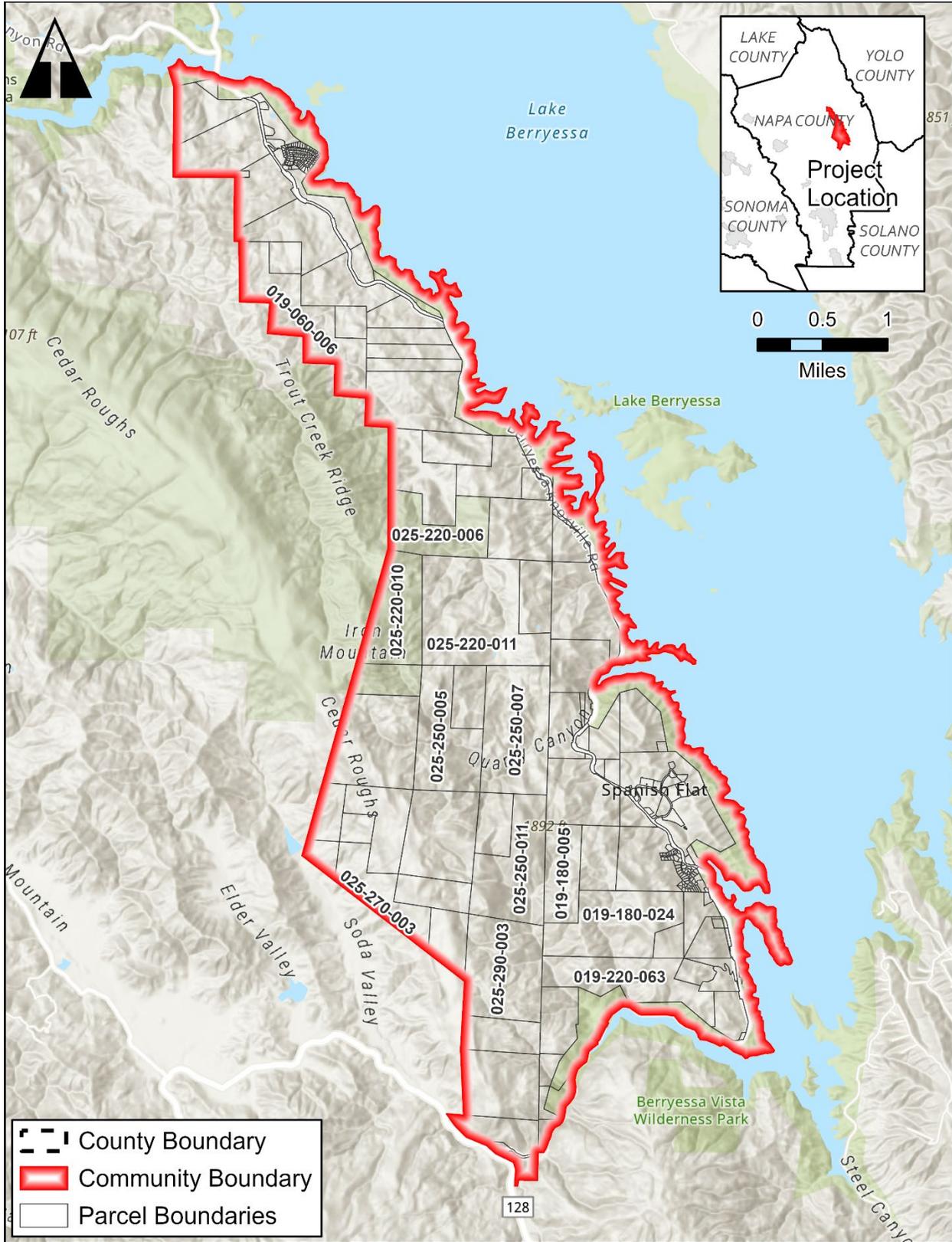


Figure 1. Area of interest – Berryessa West FSC boundary (shown in red).

## Values at Risk

The most important values at risk are life safety, then improvements to property (residential structures and vineyards), then natural resources. Because all the evacuation routes are long and involve poor road conditions, the threat to human life is significant.

Homes in Berryessa West are at risk from wildfire for a number of reasons. Structures are generally older, dating before the requirement for ignition resistant construction. Most roofs are less flammable, however, wood siding, decks, and unprotected vents that are part of most homes all make the buildings prone to ignition.



**Homes:** Residential structures are mostly made of wood because of their age. They have wood porches and decks, though wood fences are a rarity. The presence of ignition-resistant construction is closely related to the age of the structures; structures built after 1996 have features that prevent ignition such as non-flammable roofs, double-paned windows, and stucco siding. Many older structures have been remodeled and a few property owners have installed personal fire suppression systems involving various water sprinkler strategies.

Structures are located primarily along the gentler slopes within the FSC boundary. There are a few short roads that branch off of Berryessa Knoxville Rd near Lake Berryessa and connect to most of the structures in the area. Structures located west of Berryessa Knoxville Rd in the Wildland Urban Interface (WUI) tend to have long narrow driveways, often with only one ingress/egress route.



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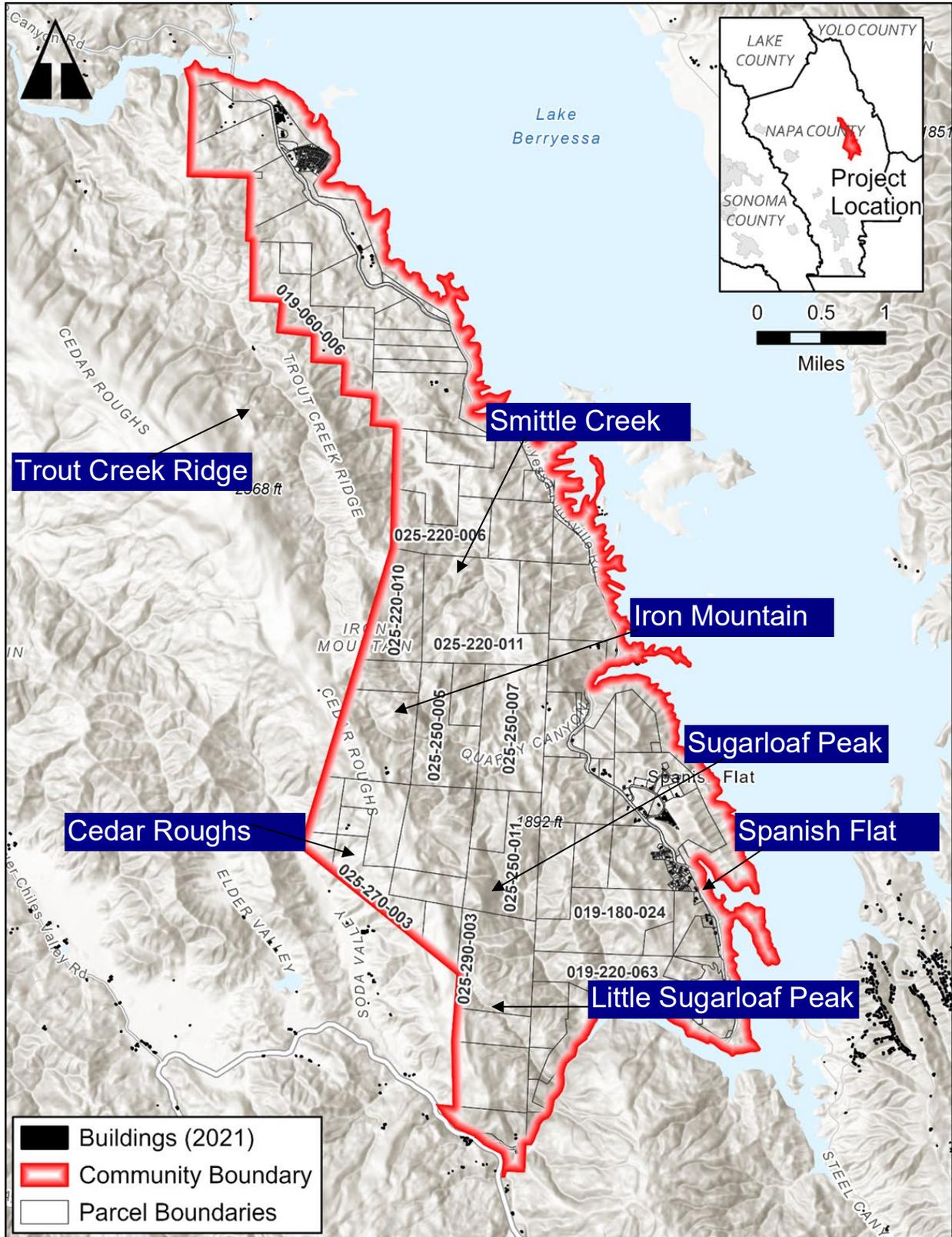


Figure 2. Structures (shown in black) within Berryessa West community boundary.

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**Land Use:** The Napa County parcel database shows that Berryessa West is dominated by vacant lands. Vacant lands account for 89% of the lands within Berryessa West and are spread throughout the area. 56% of these vacant parcels are rural, with 10% having miscellaneous improvements. Another 33% are non-taxable vacant parcels.

Residential lands account for 7% of the total area. These lands are adjacent to vacant and commercial lands. There are three distinct areas of residential development. The largest is the Berryessa Pines subdivision, on the northeastern portion of the Fire Safe Council. Residences also are located along Mulford Drive, and Sugarloaf Drive.

Commercial parcels account for approximately 3% of the Berryessa West area and are concentrated in the areas around Spanish Flat as well as in the Berryessa Pines subdivision. Commercial properties include boat storage, a restaurant and a senior center. Vineyards account for just 0.05% of the total area in Berryessa West.



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**Table 1.** Number of parcels and county land use within the Berryessa West area (Napa County GIS Open Data Portal, accessed in July 2021).

Category	Acres	Parcel Count	Percent (%)
<b>Agricultural</b>	<b>4</b>	<b>1</b>	<b>0.05%</b>
VINEYARD LAND >5 AC	4	1	0.05%
<b>Residential</b>	<b>699</b>	<b>87</b>	<b>7%</b>
RURAL RES < 5 AC W/1 RES	30	81	0.3%
RURAL RES > 5 AC W/1 RES	457	5	5%
RURAL RES > 5 AC W/2 SFRS	213	1	2%
<b>Vacant</b>	<b>8607</b>	<b>178</b>	<b>89%</b>
VACANT LAND MULTIPLE	6	1	0.1%
VACANT LAND RURAL	4451	137	0.1%
VACANT RURAL W/MISC IMPS	968	5	33%
VACANT LAND COMMERCIAL	9	2	46%
VACANT LAND VALUED BY S.B.E.	1	2	0.03%
VACANT LAND NON-TAXABLE	3169	29	10%
VACANT LAND R/W	3	2	0.02%
<b>Commercial</b>	<b>273</b>	<b>15</b>	<b>3%</b>
COMMERCIAL IMPROVED	132	9	1%
IMPRVD LAND NON-TAXABLE	141	6	1%

## Topography

Topographic features - such as slope and aspect (orientation with respect to sun and wind) and the overall form of the land - have a profound effect on fire behavior. Topography affects a wildfire's intensity, direction, and rate of spread. An area's topography also affects local winds, which are either "bent" or intensified by topographic features. Topographic features can also induce daily upslope and downslope winds. The speed, regularity, and direction of these winds (and other winds) directly influence the direction of wildfire spread and the shape of the flaming front. For example, fires burning on flat or gently sloping areas tend to burn more slowly and to spread more horizontally than fires burning on steep slopes. This makes ridgetop positions more vulnerable than valleys.

The area encompasses a broad range of slopes and aspects, though the area is mostly rugged. Slopes range from 0% along Smittle Creek and the ridgeline of Cedar Roughs to over 90% on the hillsides in the south.

Trout Creek Ridge, a steep ridgeline, runs along the northwest border of the area. This is an important control location for fires. Further South, there are several small peaks, including Iron Mountain, Sugarloaf Peak and Little Sugarloaf Peak. Spanish Flat is a sub-region that borders

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Lake Berryessa to the east of the area. Smittle Creek bisects the north portion of the area, running parallel to Trout Creek Ridge along its eastern base.

### **Watersheds and Orientation of Canyons:**

- Quarry Canyon: This canyon runs from west to east between Sugarloaf Peak and Iron Mountain Peak. It crosses Smith Creek perpendicularly and runs all the way into Lake Berryessa.
- Sugarloaf and Little Sugarloaf Peak canyons: Several small canyons stem from this peak. These canyons are northeast to southwest in orientation and run down to the southeastern residential part of the area. This direction is aligned with the predominant winds from the southwest and the more concerning Diablo winds from the northeast.

The Berryessa West area is mostly in the Smittle Creek Watershed but also contains portions of the Moskowite Reservoir and Trout Creek watersheds. Multiple creeks exist in the area. They include: Smittle Creek, Capell Creek, Soda Creek, and several seasonal creeks.

More details of the terrain follow in the discussion of weather.

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Figure 3. USGS Topographic map of the Berryessa West FSC area (boundary shown in red).

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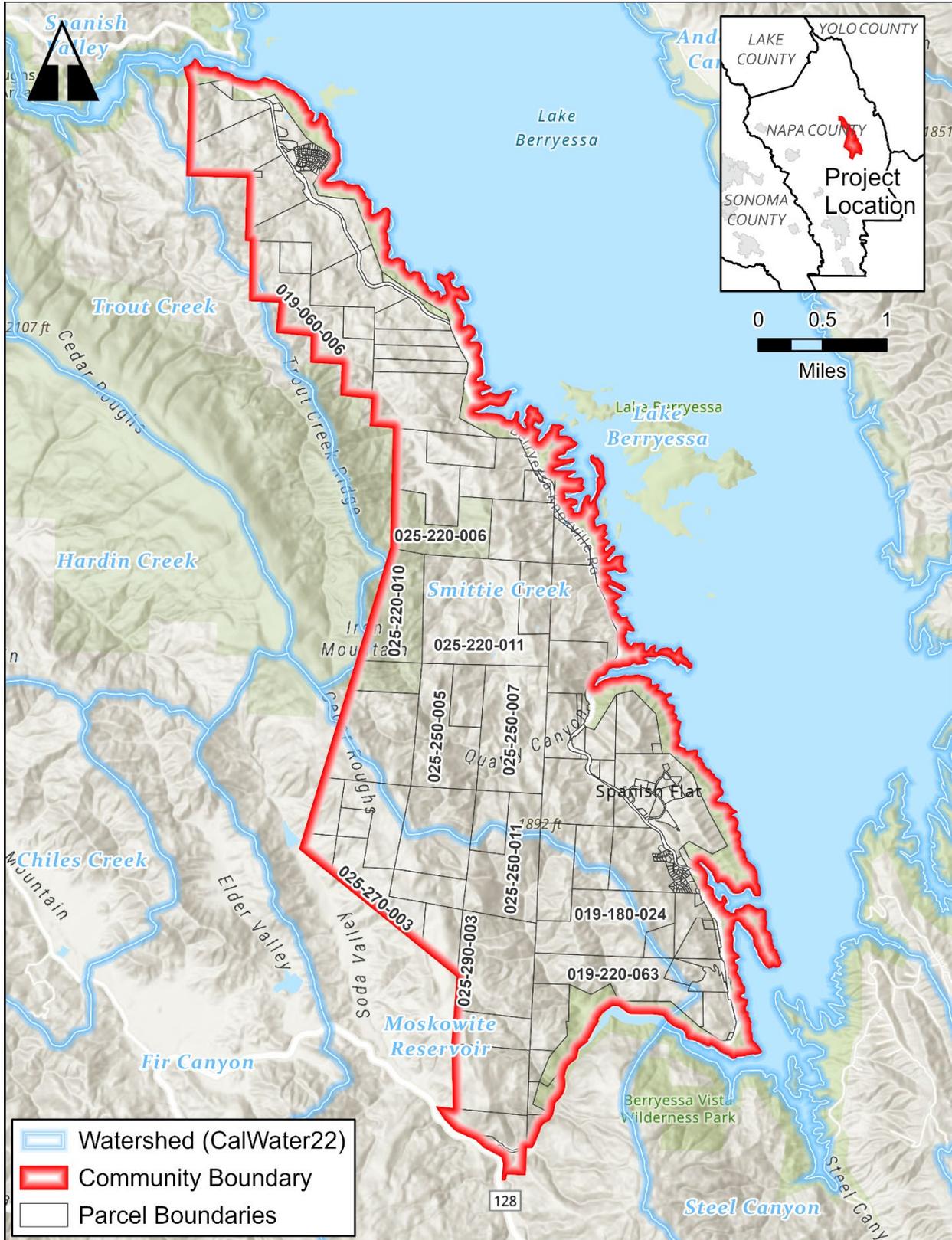


Figure 4. Watershed map of the Berryessa West area (boundary shown in red).

## Weather

Weather conditions significantly impact both the potential for ignition and the rate, intensity, and direction in which fires burn. The most important weather factors used to predict fire behavior are wind, temperature, and humidity.

**Temperatures and Humidities:** Summer days are usually warm but comfortable; temperatures normally range from lows in the 40's and to highs in the 90's, with an occasional high reaching a maximum of 105 degrees Fahrenheit. Humidity can drop to the single digits in the summer and fall.

The Berryessa West FSC lies in a relatively protected area and would be subject to occasional episodes of several still, stagnant air formed by stationary highs during summer months. This overall weather pattern -- characterized by continuous high temperatures and low relative humidities -- enhances the possibilities of ignition, extreme fire behavior and extreme resistance to fire control.

**Winds:** The most important influence on fire behavior is wind. Wind can greatly affect the rate of fire's spread and the output of a fire. Wind increases the flammability of fuels both by removing moisture through evaporation and by angling the flames so that they heat the fuels in the fire's path. The direction and velocity of winds can also control the direction and rate of the fire's spread. Winds can carry embers and firebrands downwind that can ignite spot fires ahead of the primary front. Gusty winds cause a fire to burn erratically and make it more difficult to contain. Wind will tend to follow the pattern of least resistance and is therefore frequently deflected and divided by landforms.

The winds that create the most severe fire danger typically blow from the north, usually in October. Winds from the east and north bring low humidity and elevated fire danger and can wreak havoc on the forested and chaparral covered areas, causing fire to spread to the south. These winds are the same ones that blew during the largest fires in Napa County; an unnamed fire in 1939 followed the pattern of larger fires influenced by these northeasterly winds. Those larger fires include the C. HANLY fire in 1964 along with its companion fire in 1965, the P.G. & E. #10 fire. Again, in 1976 and 1982, two fires, the IDA CLAYTON fire and the SILVERADO fire also started under these conditions. More recently, the TUBBS and NUNS fire in 2017 and the GLASS fire in 2020, which burned substantial parts of Napa County to the west, also followed this pattern.

Locally, winds flow in all directions, and are not easily predicted. The lake and the topographic basin produce swirling and spurious wind flows. The direction of the winds changed often during the 2020 LNU Lightning Complex (also known as the Hennessey Fire), which burned the entirety of the Berryessa West Fire Safe Council.

Most of the area is characterized by northwest-to-southeast aligned ridges with several peaks in the southern portion of the area. These ridges slow the regionally dominated southwesterly

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winds. However, strong winds from the northeast can produce strong up slope and erratic winds. The southern section has peaks that can align with the predominate wind direction (southwest-northeast), acting as funnels for strong afternoon winds or the less common Diablo winds from the northeast.

Any southwestern-facing aspect of the Berryessa West area can exacerbate its risk from the Diablo winds. This is because these foehn or subsiding winds accelerate with decreasing elevation.

## Vegetation

The 2016 Vegetation Map of Napa County<sup>2</sup> (updated from the 2004 version) was used as reference for this evaluation. There are seven main vegetation categories within the Berryessa West area along with three non-veg types (rock outcrop, developed, and streams and reservoirs). The major vegetation categories mapped are listed in Table 2.

**Table 2.** Vegetation acres by major vegetation categories within the Berryessa West area (Vegetation Map of Napa County).

Vegetation Major Category	Acres	Percent (%)
Agriculture	3	0.03%
Coniferous forest	9	0.1%
Developed	183	2%
Grassland	383	4%
Oak woodlands	3488	36%
Riparian woodland	33	0.3%
Rock outcrop	6	0.1%
Shrubland	5489	57%
Streams and reservoirs	83	1%

In addition, the landscaped environment surrounding buildings and homes includes vegetation not captured in the vegetation.

Each vegetation type burns differently, based on the amount of biomass available to burn, the distribution of biomass in the vegetation, as well as the moisture and oil content of the foliage and dead material. A discussion on each major type follows the map on the next page.

Note: the tables and maps presented here reflect **pre-2020** conditions.

<sup>2</sup> [https://data-cdfw.opendata.arcgis.com/datasets/b9855bea85c14190ab030da86441301c\\_0/explore](https://data-cdfw.opendata.arcgis.com/datasets/b9855bea85c14190ab030da86441301c_0/explore)

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Figure 5. Vegetation map – Berryessa West area (boundary shown in red) (Napa Vegetation Map, 2016).

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**Oak Woodland:** 36% of the Berryessa West area was mapped as Oak Woodland in 2016 on the flanks of hillsides and ridgetops throughout the area. In unburned areas, dense canopies, with little or no grass or shrubs under the canopies, typify these oak woodlands. The tree canopy in the lower reaches of the drainages is dominated by blue oak, but also includes interior live oak, California bay, coast live oak, valley oak, leather oak, and occasional pines. In more exposed areas, where the canopy opens up, shrubs are dominant in the understory.

Currently, the oak woodlands are recovering from the LNU Lightning Complex in 2020, and are sprouting from the base. Few trees were left unscorched, and standing dead trunks are the norm. The sprouts are in the form of bushes, with many stems. Grass and shorter shrubs are interspersed between the oaks.

If a fire were to occur in the area within the next decade, the vegetation can be expected to burn as a grassy shrubland until trees grow in height and form a more closed canopy. Because the foliage of the tree sprouts and chaparral is all new, a fire would be dampened by the live growth, but propelled by the grass in and amongst the re-sprouting trees.

**Shrubland:** Prior to the LNU Lightning Complex shrubland occupied 57% of the Berryessa West area. All shrublands are re-growing on both the steep hillsides of the southern portion and the flatter areas in the northern portion. They are also interspersed with patches of oak woodlands throughout the center of Berryessa West. The photograph on page 4 shows the pattern of re-growth. While these distinct areas were mapped as Shrubland, brush exists throughout and often contributes to other vegetation types described in this document. The specific mapped alliances mapped in 2016 will persist after the fires and include:

- California Bay - Leather Oak - (Rhamnus spp. (Foothill Pine)) Mesic Serpentine
- Chamise - Wedgeleaf Ceanothus
- Chamise Alliance
- Leather Oak - California Bay - Rhamnus spp. Mesic Serpentine Chaparral
- Leather Oak - White Leaf Manzanita - Chamise Xeric Serpentine
- Scrub Interior Live Oak - Scrub Oak - (California Bay - California Ash - Birch Leaf Mountain Mahogany - Toyon - California Buckeye) Mesic East County



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Currently, the brush on the hillside is growing rapidly, from re-sprouts and seeds. The new foliage will act to dampen fire spread and heat output, but any dead sticks remaining from the LNU lightning complex will contribute to faster fire spread. The hazard posed by this vegetation type is not great now, but will increase every year. When the plants grow together, sticks and twigs will die from too much shade, and the hazard will grow.

When mature, brush produces severe fire behavior, with flames longer than 20 feet in length. Intense, fast-spreading fires in chaparral burn the foliage as well as the live and dead fine woody material in the brush crowns. The foliage is highly flammable and dead woody material in the stands significantly contributes to increased fire intensity.

Currently, this type of vegetation is hazardous, but would be characterized so because it produces a fast-moving fire with flames longer than 12 feet. In a decade, this fuel type will constitute the highest hazard. Direct attack is not possible, and containment efforts would need to rely on backfiring or suppression strategies other than line building because the perimeter of the fire is likely to grow faster than a line could be built.

**Agriculture (Cropland/Vineyards):** Only 0.03% of the land in the Berryessa West area is mapped as agriculture. This occurs in small sections in the central and northern parts of the area of interest. All of the agricultural areas are vineyards.

Very little damage was incurred in this land use because fires are usually benign in croplands or vineyards. In the case of vineyards, biomass is concentrated in live vines, with a mowed or bare soil surface. A fire can spread quickly through the vineyard where there is a ground cover. However, this situation is rare. Vineyards were instrumental in stopping the Howell Mountain fire in 1983, and formed the edges of fires in the Tubbs, Nuns, and Kincade Fires, but were part of the contagion in the Cavedale Fire in Napa in 1996. Vineyards often have access roads on the perimeter and within the interior, further aiding containment. With all that said, however, in the Glass fire of 2020, many vineyards were burned through.

**Annual Grasslands (Herbaceous):** Accounting for 4% of the Berryessa West area, annual grasslands were mapped throughout as scattered pockets in oak woodlands and shrublands. The extent of grasslands expanded after the LNY Complex, now interspersed between oak woodlands, shrublands and conifers. Grasses are flash fuels and fire spread can be rapid through herbaceous areas, but these fires can be easy to spot and contain.

**Conifer Forest:** Prior to the LNU Complex, coniferous forests occurred in a few small patches on the western, northern, and eastern edges of the Berryessa West area, particularly along the Lake Berryessa shore and in Cedar Roughs Wilderness. Together, they constituted only 0.1% of the area. The specific mapped conifer forest includes Foothill Pine and Sargent Cypress.

These trees were killed during the LNU lightning Complex. However, regeneration on newly bared soil is likely. These young trees do not present a fire hazard. Instead, the burned, dead

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material from the mature trees is a challenge as it fuels fires that are harder to contain and suppress.

**Landscaping:** Landscaped areas -- being closest to homes -- may make the greatest impact on survivability of a house during a fire arising in wildlands. Landscaped areas either (1) are moist, thus will not likely burn; (2) contain large amounts of fuel which will burn with great intensity; or (3) are landscaped with fire resistant plants, and only burn slowly with little heat release.

While research results regarding fire resistance of landscape plants are meager, several important generalities have surfaced. First, the overall volume of biomass as well as the spacing and design of the garden is more critical than the species selected. Horizontal spaces between planting masses and the house are important components of a fire safe landscape. Similarly, vertical spacing between tree branches, shrubs, ground cover and the structure (particularly windows) are also part of a well-designed garden.

Maintenance of landscaped areas is necessary to remove dead material and to maintain vertical and horizontal spaces. Neglect of landscape maintenance can lead to a significant worsening of the fire hazard closest to the structure.

Some yards in the Berryessa West FSC are generally consistent with fire safety principles. Other residences in each neighborhood have abundant vegetation that can endanger adjacent and nearby residents if they are within a few hundred feet of each other. This is particularly important because residences are near enough to be affected by vegetation in a neighboring property.



## Predicted Fire Behavior

While the vegetation map has not been updated since 2016, the fuel models that form the underpinning of fire behavior were updated in the fall of 2020, after the LNU Lightning Complex. The post-fire fuels were assumed to grow back, as influenced by the severity of the fire and the original vegetation.

The distribution within an area of expected flame lengths can be predicted using public-domain software and data. FlamMap<sup>3</sup> was used to model fire behavior using a county-wide dataset developed from the Napa County Vegetation Map<sup>4</sup>.

Details regarding fire behavior follow. In summary, flame lengths are expected to be high (over 12 feet) because of the combination of heavy fuels, especially in the mixed forest and chaparral. Where a well-developed understory is present under the oak canopies, fires are also expected to burn with high intensity (Figure 6). Fires can also be expected to burn fast when they are propelled by dry grass and chaparral. Vineyards can moderate both the fire intensity and fire spread but would not provide good suppression opportunities for safe evacuation because they are small in comparison to the tracts of uninterrupted vegetation.

**Predicted Flame Lengths:** Long flame lengths can be expected in dense oak forests where understory is present. Vineyards and areas of well-maintained defensible space can be expected to burn with low intensity even under the most extreme conditions. Flame length most directly relates to the ability of a firefighter to safely attack a fire; flames longer than eight feet prevent safe, effective direct attack. Flame length is also most closely related to structural damage – the higher the flame length, the more likely a structure could be lost.

63% of the area has a predicted flame length of over 8 feet when predicting for a northeasterly wind at 15 miles per hour. This leaves about 38% of the area predicted to have less than 8-foot flame lengths. Of those areas, 22% are predicted to have less than 4-foot flame lengths. Table 3 lists the predicted flame length by category and area (in acres) within the Berryessa West area.

The higher flame lengths are concentrated in the shrublands throughout Berryessa West and are especially abundant in the steep terrain of the southern portion of the area. The lower flame lengths are distributed throughout the central and eastern parts of the area, occurring mostly in grasslands and oak woodlands as well as locations with some shelter from winds.

Note that the no predicted fire category accounts for agriculture and developed areas (includes vegetation in residential parcels) that may indeed burn – as evidenced in many of the recent fires in Napa County. In particular, no-till vineyards provide more potential fuels than vineyards with bare earth.

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<sup>3</sup> <https://www.firelab.org/document/flammap-software>

<sup>4</sup> <https://ncff-cwpp-dms-usa.hub.arcgis.com/maps/b2de24b3562e4e27b0fbea2921e2c9e4/explore>

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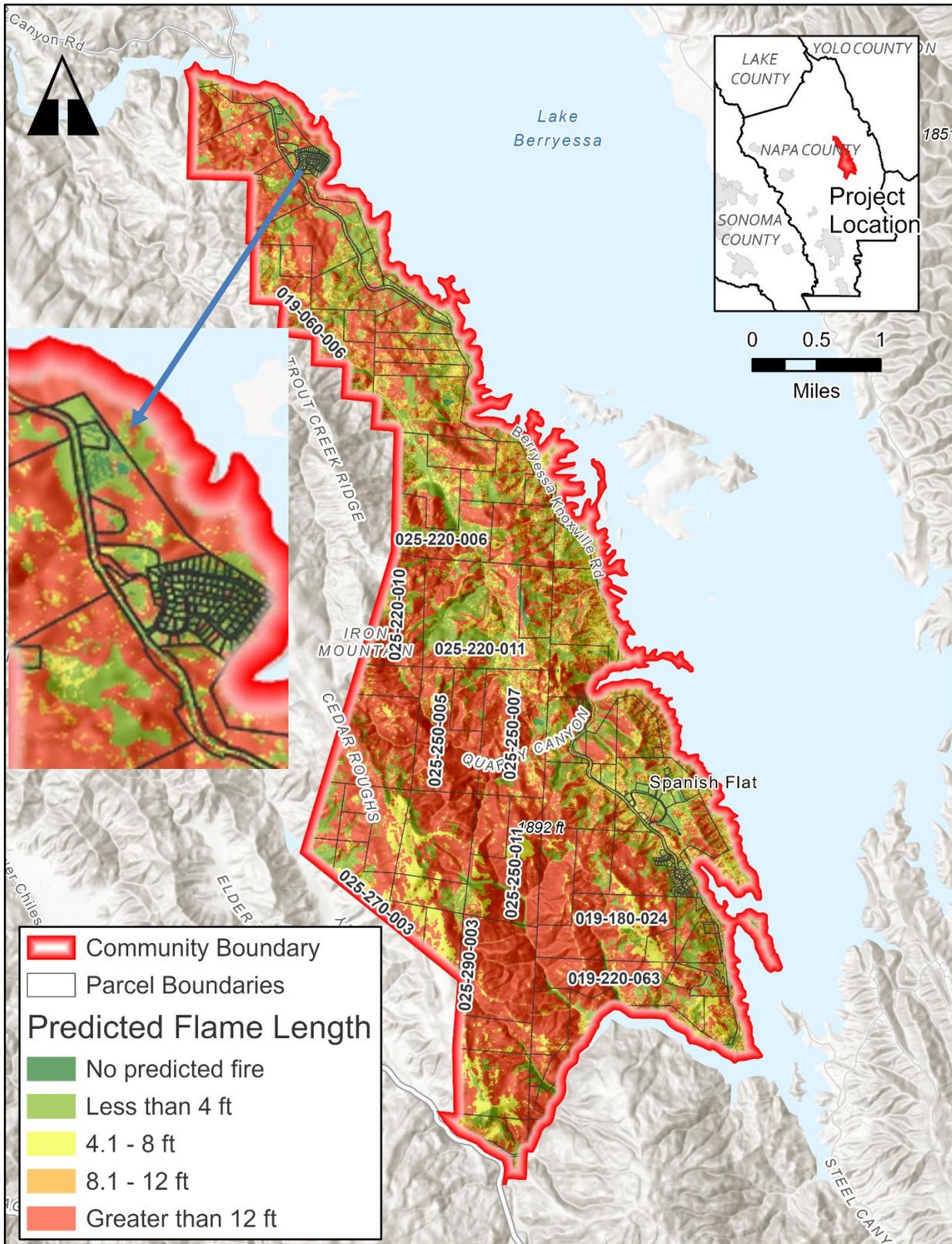


Figure 6. Predicted flame length (feet) map (based on Napa Veg Map-based landscape version)

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2-2021 with a Northeast wind at 15 mph with low fuel moistures). Berryessa West area boundary (shown in red).

**Table 3.** Predicted flame length by category and area (in acres) within the Berryessa West area (based on Napa Veg Map-based landscape version 2-2021 with a Northeast wind at 15mph with low fuel moistures).

Predicted Flame Length	Acres	Percent (%)
No predicted fire	177	2%
Less than 4 ft	1902	20%
4.1 - 8 ft	1585	16%
8.1 - 12 ft	921	10%
Greater than 12 ft	5084	53%

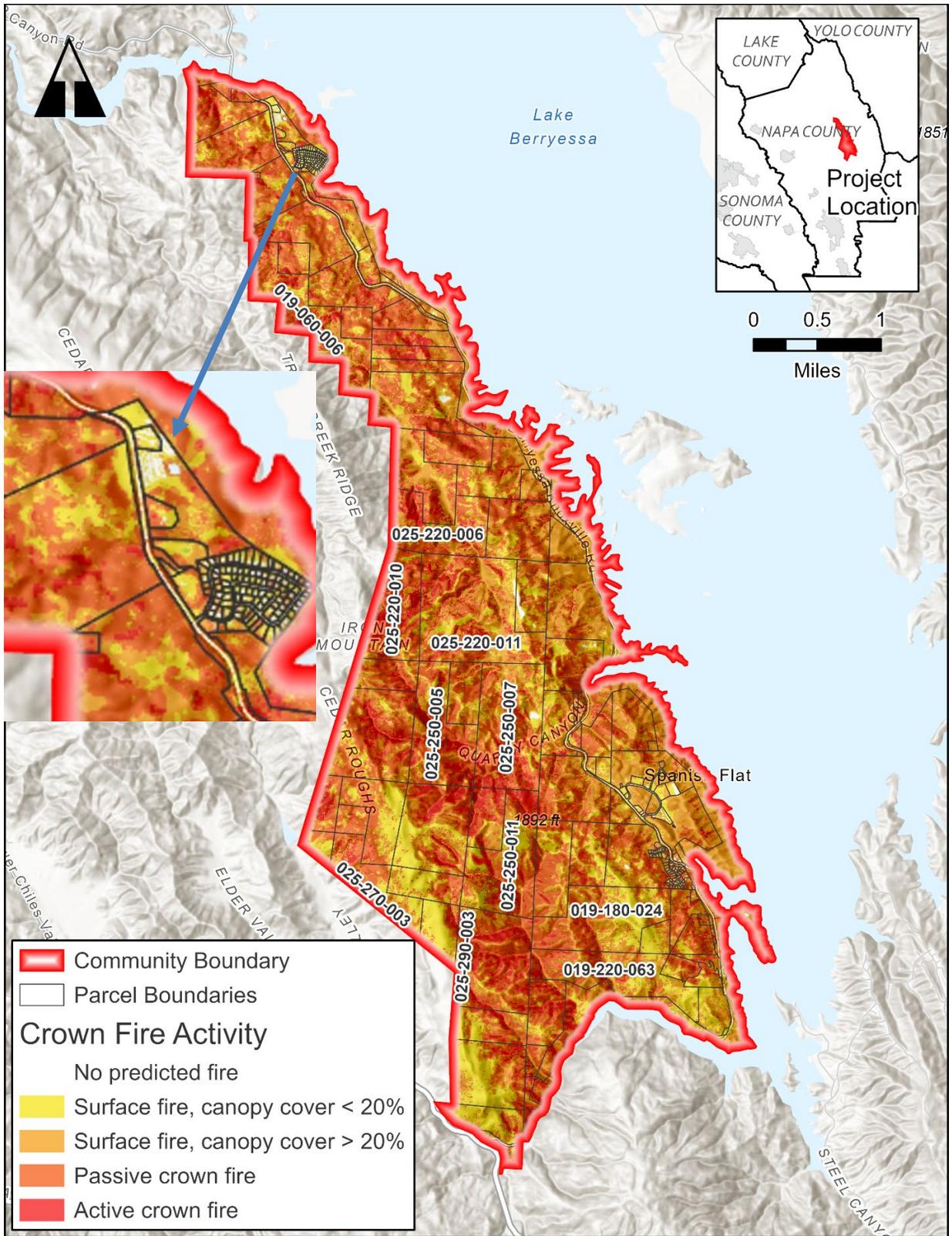
**Predicted Crown Fire Activity:** While both the coniferous and oak forests can torch, hardwoods are less likely to have fire reach to the tree crowns, unless vegetation is burning underneath. Crowning potential is crucial. When fires spread into crowns, thousands of embers are produced and lofted into ignitable fuels, often overwhelming fire suppression personnel.

For the Berryessa West area, a relatively small area is predicted to have fire spread within the tree canopy (tree-to-tree or crown fire), which is rare and virtually unheard of in hardwoods. Areas with higher density of coniferous forests are most at risk of torching and crown fires. These areas are located throughout the area of interest and persist on steep ridges.

A combination of no predicted fire and surface fire in a canopy cover of less than 20% accounts for approximately 17% of the Berryessa West area. These areas are concentrated in the developed parts of Berryessa West as well as in vineyards and small patches in oak woodlands.

Of the places predicted to have only a surface fire, we identified those areas with a higher canopy (over 20%) to highlight areas that do not torch but are likely to. These areas account for 37% of the predicted surface fire. Areas where torching is predicted also account for 37% of the area. These areas are predominantly on steep mid-slopes and places where the vegetation is not protected from strong winds. They occur throughout the Berryessa West area and surround the vineyards and residential areas. And lastly 10% of the area is predicted to have active crown fire. While this is a relatively low number, in comparison to other communities, this is high. Field verification is recommended. Active crown fire is predicted on the steepest north- and east-facing slopes throughout the area, but it is concentrated in the south on the steep walls of Quarry Canyon and the slopes of the nearby mountain peaks.

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**Figure 7.** Predicted crown fire activity map (based on LANDFIRE landscape version 2.0 with a Northeast wind at 15 mph with low fuel moistures). Berryessa West area boundary (shown in red).

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**Table 4.** Predicted crown fire activity (or fire type) by category and area (in acres) within the Berryessa West area (based on Napa Veg Map-based landscape version 2-2021 with a Northeast wind at 15 mph with low fuel moistures).

<b>Crown Fire Activity</b>	<b>Acres</b>	<b>Percent (%)</b>
No predicted fire	177	2%
Surface fire canopy cover < 20%	1427	15%
Surface fire with canopy > 20%	3540	37%
Torching fire (passive crown fire)	3607	37%
Crown fire	919	10%

## Fire History

In the past decades, five fires have been recorded occurring near the Berryessa West area. Most notable are the large and wide-ranging Hennessy fire (also known as the LNU Lightning Complex) of 2020, the Atlas fire of 2017, the Priest fire of 1995, and the Atlas Peak fire of 1981.

Large fires have directly impacted most of the area within the Berryessa West neighborhood. The fire history map shows that the vast majority of the neighborhood was visited by fire in 2020, suggesting a relatively lower fuel load than in other areas that have not experienced fire recently.

**Table 5.** List of recorded fires near the Berryessa West area (CAL FIRE, 2020).

<b>Year</b>	<b>Month</b>	<b>Date</b>	<b>Fire Name</b>	<b>Cause</b>	<b>Acres</b>	<b>Comments</b>
1959	December	12/3/1959	R. WILSON	Unknown/ Unidentified	3,504.4	
1981	June	6/22/1981	ATLAS PEAK	Arson	33,606.4	
1995	Unknown/ Unidentified	Unknown/ Unidentified	PRIEST	Unknown/ Unidentified	5,112.6	
2017	October	10/8/2017	ATLAS	Unknown/ Unidentified	51,624.7	Southern Complex
2020	August	8/17/2020	HENNESSEY	Lightning	305,352.0	Part of the LNU LIGHTNING COMPLEX

A recurring history of large fires (over 10,000 acres in size), which typically burn for several days, has been well established in Napa County. The typical period between such large fires is approximately 20-30 years. Like much of California, fires in Napa County are almost entirely caused by human-related accidental ignitions. With that said, in 2020, several lightning-strike fires burned in Napa County and west into Sonoma County.

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In the past, fires did not involve large numbers of structures because of the historic rural nature of Napa County; however, structure damage is now a common concern whenever wildland fires of any size occur.

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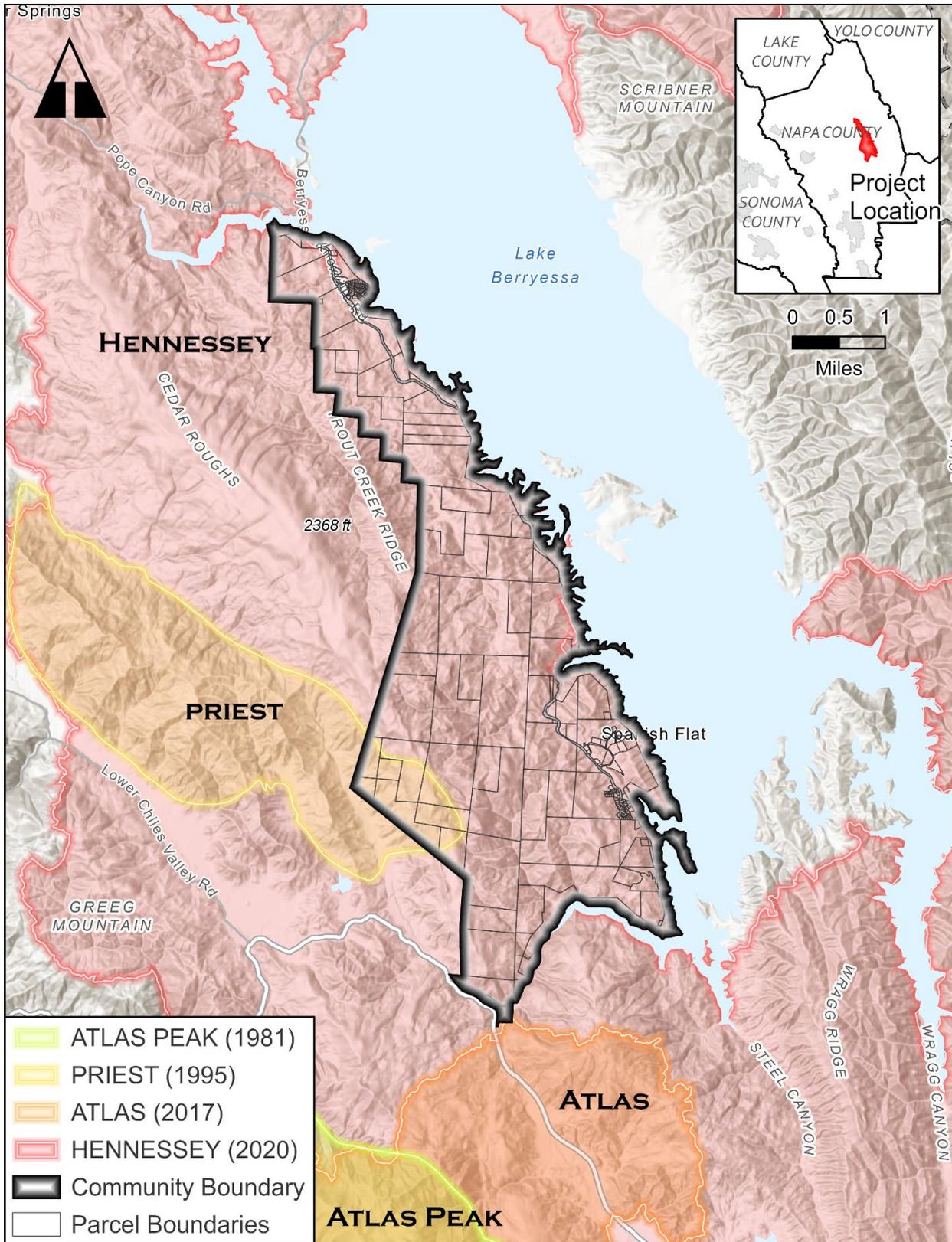


Figure 8. Fire perimeters/fire history map of Berryessa West area (CALFIRE FRAP, 2019).

## Access

In general, access to the boundaries and interior of the Berryessa West is poor. Berryessa Knoxville Road is the main ingress/egress road into the area that runs parallel to Lake Berryessa on the far eastern border of the area. It can be accessed from state highway 128 from the south or from Pope Canyon Road from the North. There are several smaller local roads that lead into small neighborhoods along the shore of Lake Berryessa that allow for limited access. However, this patchwork of interior driveways and roads are dead ends. The neighborhoods of Berryessa West, Mulford Drive and Sugarloaf Lane all have one-way in and one-way out to Berryessa Knoxville Road. There are no other means of egress other than fire roads that may or may not be maintained.



Most roads are barely two lanes with no shoulders. Berryessa Drive and Putah Creek Road appear to have minimum 14' travel lanes and accessible turning areas for emergency vehicles. Pavements (road surfaces) are generally in good shape, some curves are simultaneously sharp and steep. Some residences are served by long shared driveways behind locked gates. Locked gates are common and can further delay emergency response. Locked gates also discourage/prevent inspection by local fire authorities.

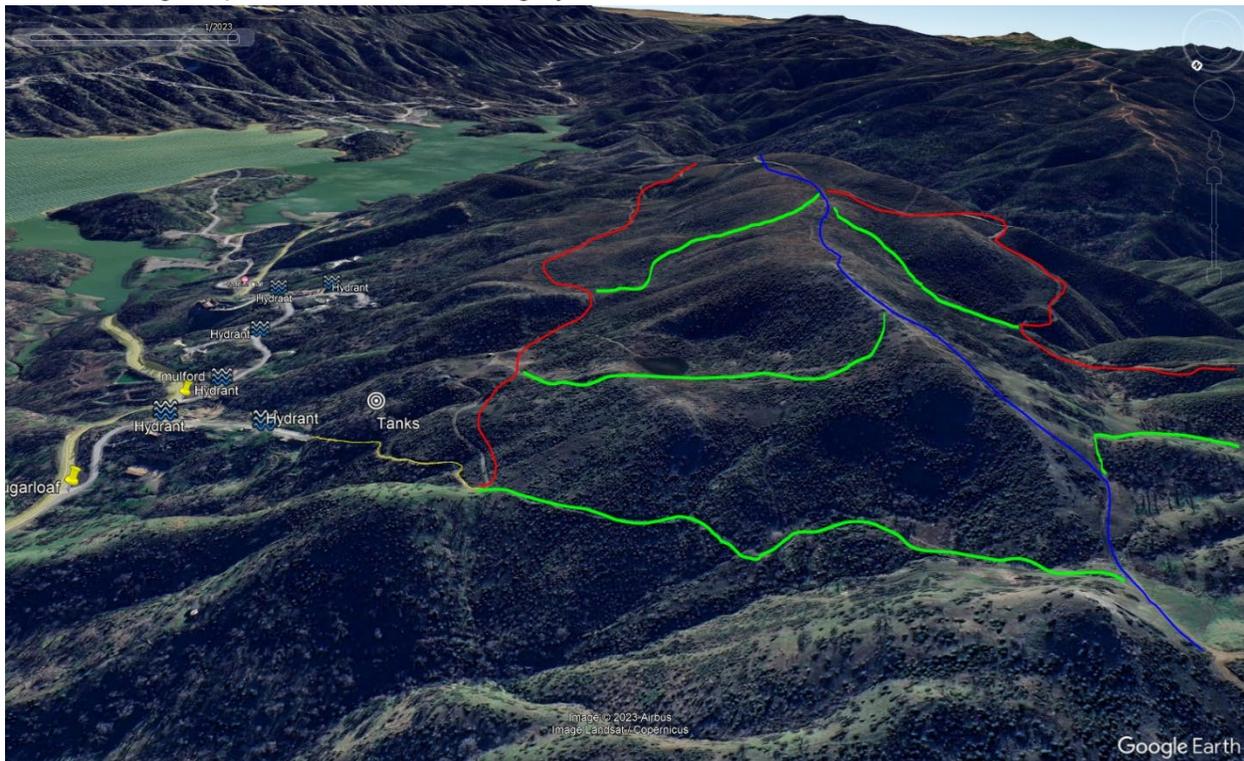


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Regardless of the condition of the roadbed, access can be blocked by roadside vegetation. Trees can fall, blocking passage or vegetation can burn with such intensity that emergency response and evacuation cannot occur.

Most roadsides have abundant roadside vegetation. This vegetation could block the road while burning, and after, as trees fall (a common event during a fire). Roadside vegetation has not been maintained on many of the roads or driveways within the Berryessa West area and could prove significant in the event of a fire.

Above the residential area, a network of dozer trails exist to support fire containment. Several lead to a ridge-top fire trail that runs roughly north-south.



**Figure 9.** Dozer trail network west of Mulford and Sugarloaf Drives.

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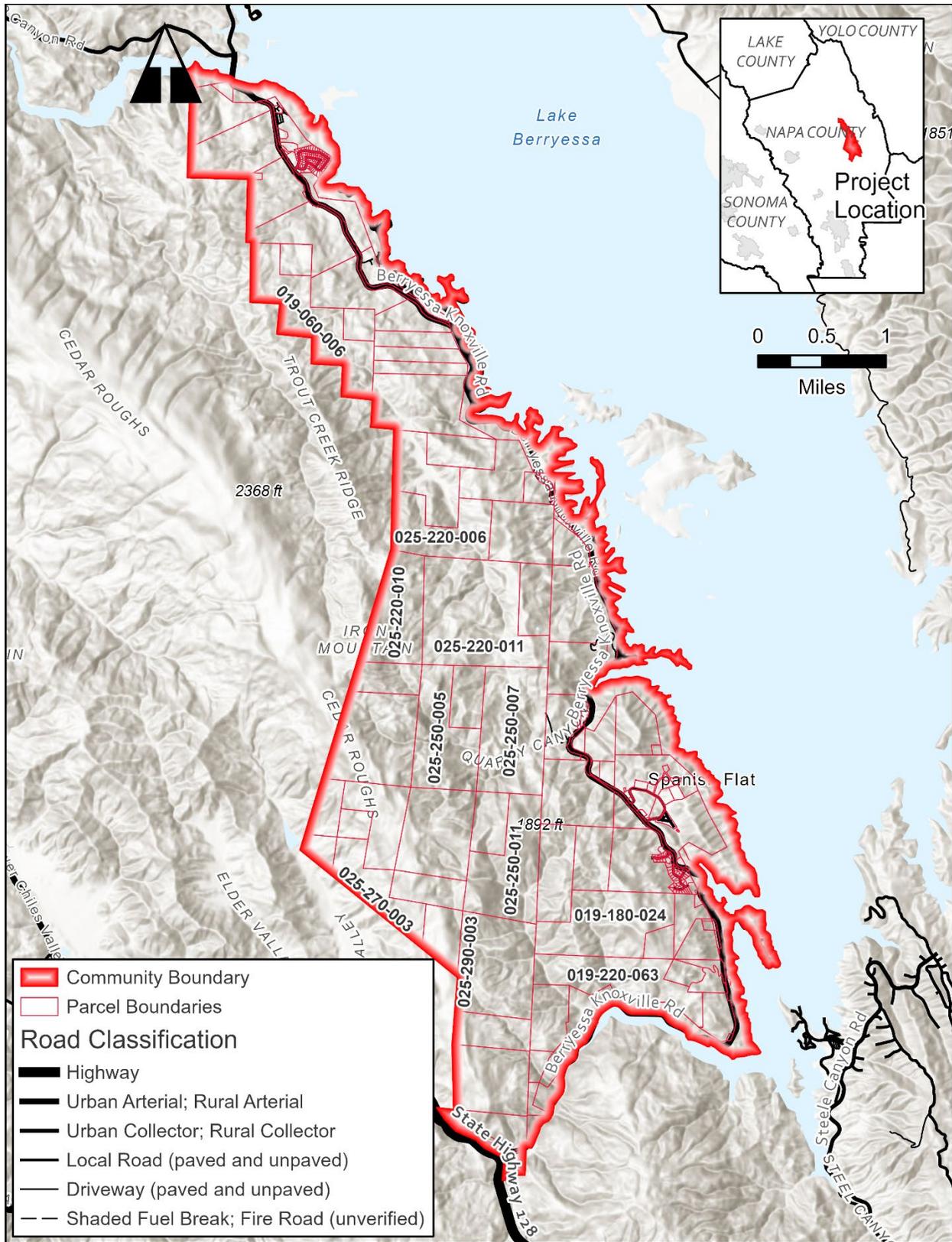
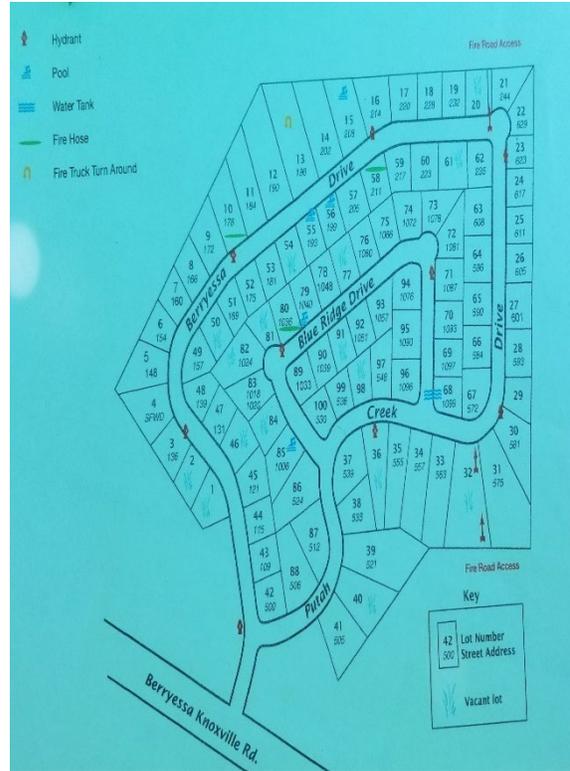


Figure 10. Access and street map of Berryessa West area (shown with red outline).

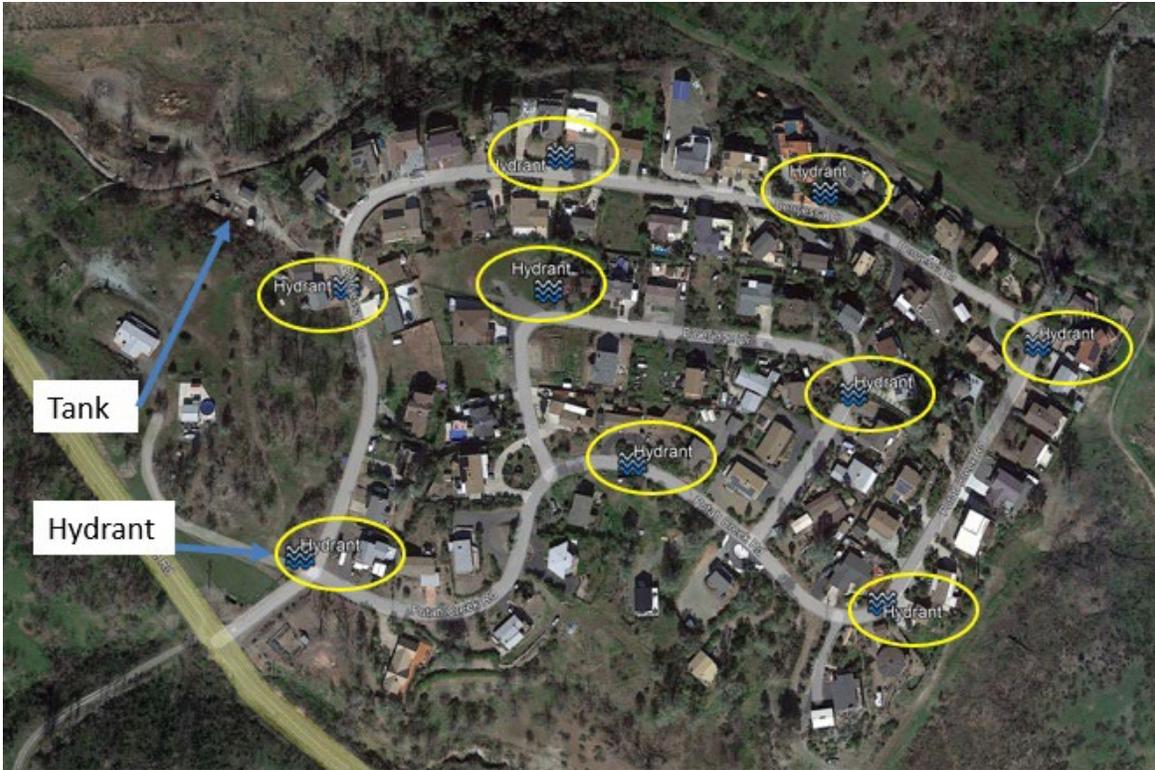
## Water Supply

The water supplies for emergency fire response is adequate for the expected demand during a wildfire. Lake Berryessa represents an unlimited water supply for helicopter attack.

The Berryessa Pines subdivision has hydrants spaced on average every 500-560', this is likely slightly larger than code compliance. Yellow hydrant bonnet indicates Class B with flow of 500-1000gpm (not tested). The water supply is fed by pumps from Lake Berryessa, stored in a 25,000-gallon bolted steel treatment tank north-west of community, then pumped to a 100,000 tank west above community for pressure and reserve. A water tank is indicated at 68 Blueridge, to be confirmed if this is fire vehicle-accessible.



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**Figure 11.** Location of hydrants and tank in the Berryessa Pines neighborhood.

The area of Mulford Drive also has hydrants, spaced on average, every 250-515 feet; this is likely slightly larger spacing than code compliance. The water for this neighborhood is supplied by tanks not near the neighborhood.

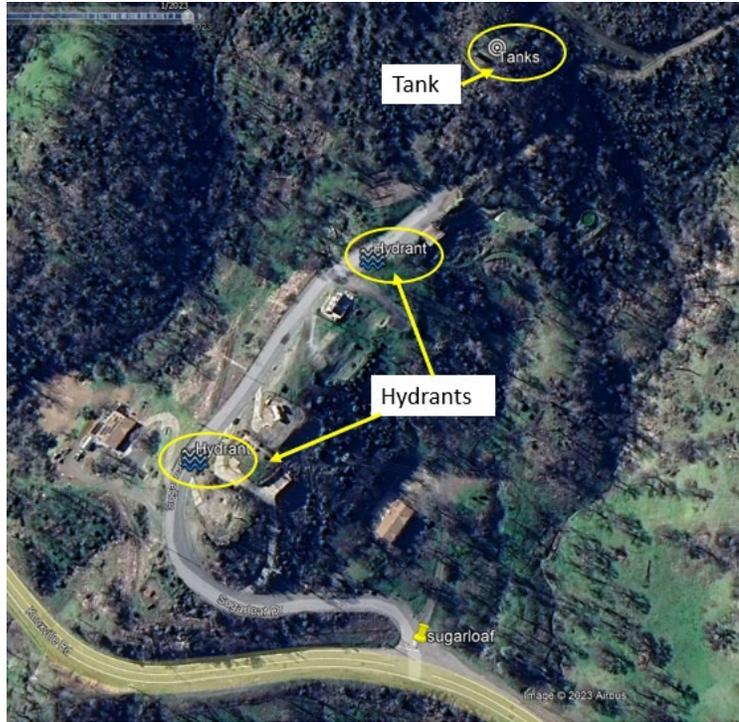


**Figure 12.** Location of hydrants and tank in the Mulford Dr. neighborhood. Vegetation is cleared around hydrants.

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The water supply for the Sugarloaf Drive neighborhood is served by hydrants that are spaced 400 ft apart, likely slightly larger than code compliance. Upper plastic tanks assist providing pressure to houses. Water is pumped up from Berryessa-Knoxville Road.

**Figure 13.** Location of hydrants and tank in the Sugarloaf Dr. neighborhood.



## Hazard Ranking

The majority of the Berryessa West area is within CAL FIRE’s State Responsibility Area (SRA). 30% is not within the SRA. The area not within the SRA is all designated as a Federal Responsibility Area (FRA).

For the SRA portions of the Berryessa West CAL FIRE in 2022 determined that 71% of the area is categorized as a **Very High Fire Hazard Severity Zone**. All other areas were not rated as an area with a fire hazard.

**Table 6.** Fire hazard severity zone by area (acres) within Berryessa West area boundary (CAL FIRE, 2022– current version).

Fire Hazard Severity Zone (CAL FIRE)	Acres	Percent
Moderate	0	14%
High	0	2%
Very High	6837	71%
Non-SRA	2840	29%

This is an update from a Fire Hazard Severity Zone assessment in 2007. A comparison of the current and proposed distribution of these zones as of 2022 is available at <https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=fd937aba2b044c3484a642ae03c35677>. In short, the **entirety** of the SRA lands in the Berryessa West FSC is categorized as a Very High Fire Hazard Severity Zone.

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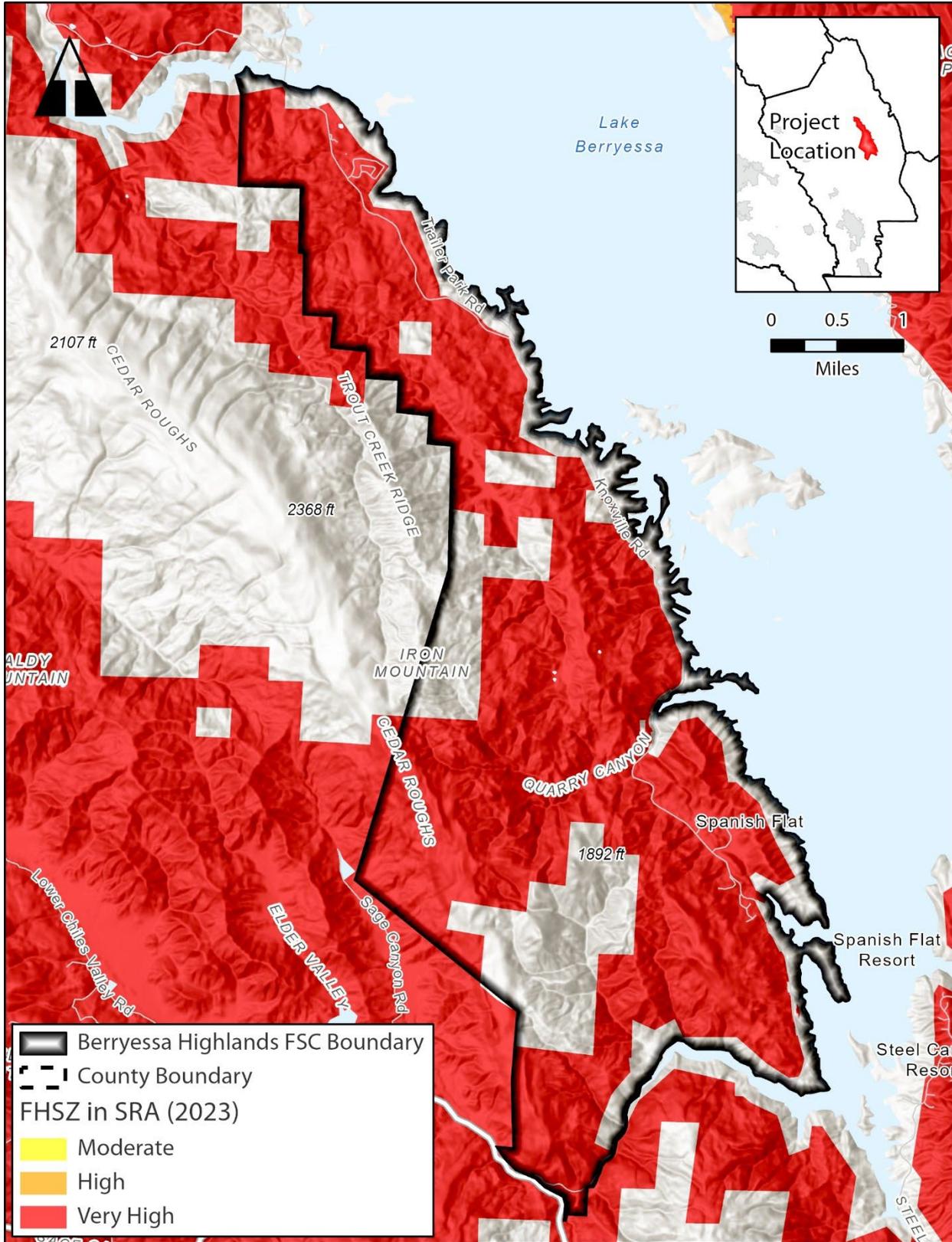


Figure 14. Distribution of Fire Hazard Severity Zones (CALFIRE, 2007).

## The Plan

The elements of this Plan have been arrived at through a collaborative process, with the understanding that some elements of this Plan will require outside funding, that some elements will be easier to accomplish than others, and that all elements will take some time.

## Projects

### **Completed Projects**

Owing to NCCFF funding sources, some fuel management projects including the Berryessa Pines Subdivision Fuel Break, and dozer lines for containment have been accomplished, with additional work planned.

### **Mapped Projects**

Planned, completed and proposed fuel management projects have been mapped for the BWFSC. Figure 15 shows the mapped fuel management projects planned, proposed, and completed for Berryessa West Fire Safe Council by project status. Figure 16 shows the projects by project type.

Berryessa West FSC Fuel Reduction Project Status

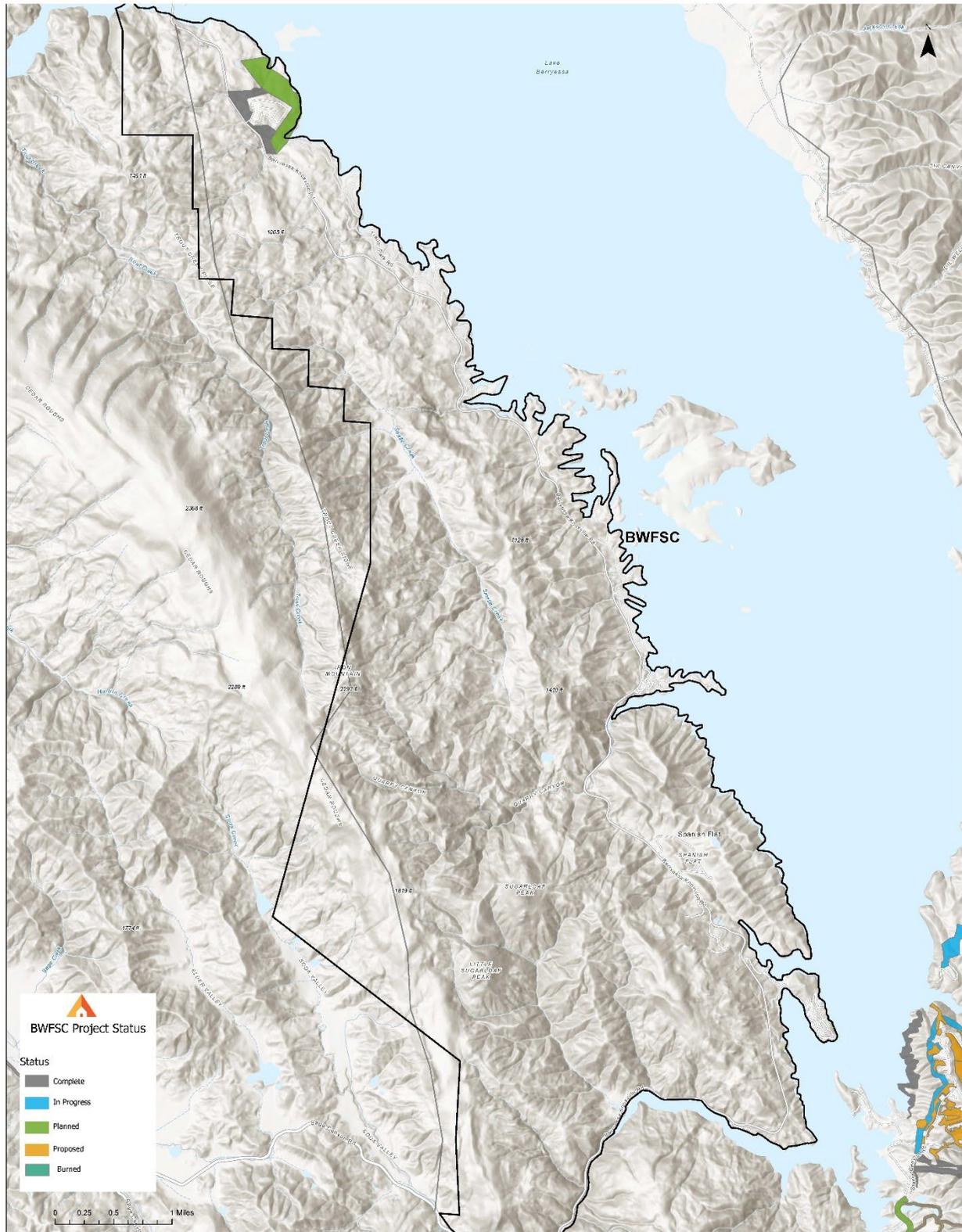


Figure 15. Berryessa West FSC fuel reduction project status.

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Figure 16. Berryessa West FSC fuel reduction projects by type.

**Recommended Projects**

Several projects in the areas of emergency water supplies, emergency access and resident evacuation routes were recommended to enhance the fire safety within the Berryessa West area.

**Emergency Water Supply Projects**

- Remove vegetation within 3' of all hydrants and ensure 50' of visibility from road.
- Install and maintain reflective hydrant markers in the road at each hydrant.
- Test hydrants on a routine basis to confirm their flow and function.
- Evaluate flow and available volume at the hydrants for Code compliance.
- Confirm that water system can function during power outage or plan for emergency generators to be operated during power outage/fire event.
- Increase visibility of hose reels near hydrants on-site.
- Harden any plastic pipes in fire prone areas which could burn and depressurize hydrants.



**Evacuation and Emergency Access Projects**

- Develop secondary evacuation route for residents.
- Develop secondary access for Fire Vehicles.
- Develop secondary evacuation route for 4X4 vehicles.
- Evaluate alternative routes to existing dozer trail networks.

As part of the process of developing the CWPP, the community identified additional projects. Some of the projects can be accomplished by residents, working together or individually, and some which require significant funding.

**Projects that can be accomplished by residents include:**

1. Create defensible space around every structure:
  - Form a committee to reach out and help neighbors that need help clearing debris and foliage from around their residence.
  - Establish a chipping pile area, request Napa County Chipping Program to provide chipping service and request chipping from the BAAQMD program
  - Have a neighborhood meeting to get a list of what people are able to assist with, i.e. provide labor, provide tools/machinery, donate funds, etc. (says volunteers to help neighbors or help trails)
  - Support the local Prescribed Burn Association by having a community member attend meetings, prescribed burns.
2. Provide information on defensible space, home hardening, demonstration homes, addressing:
  - Fire-resistant plants, fire-safe landscaping
  - The need to cut down and remove dead/burnt trees immediately adjacent to homes.
  - Retrofitting structures to be ignition-resistant
    - Lattice replacement
    - Siding protection
    - Deck skirting
3. Promote installation of reflective green signs at home, driveways and lanes. Participate in any grant funded reflective sign programs.
4. Address evacuation needs:
  - Review community map and which homes have residents that would require assistance in case of evacuation.
  - Emphasize communication for situational awareness – notification systems (e.g. Nixle, Watch Duty).
5. Coordinate with local firefighter unit to become familiar with Communities (tour days, fire engine days).
6. Engage in FSC liaison meetings.

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7. Convene a fire fair for the Berryessa FSCs.
8. Place a box repository for maps for fire responders, including access and water and critical infrastructure, structure locations.
10. Establish relationships with commercial owners for sponsorship and support to the FSC:
  - Boat storage facilities (e.g. Lakeview LLC and others)
  - Restaurants
11. Successfully apply to be recognized as a Firewise Community by the National Fire Protection Association and maintain recognition annually.

### **Projects that require significant funding in coordination with Napa Firewise include:**

1. Engage BOR and BLM to get approval and funding to:
  - Establish a wider firebreak on BOR property surrounding homes.
  - Clear grass on BOR property adjacent to homes, possibly with goats.
  - Have a burn pile for vegetation removed from the areas immediately surrounding homes.
2. Conduct roadside treatments along Berryessa-Knoxville Rd:
  - Identify temporary refuges, e.g. Spanish Flat day use area
3. Bury power lines underground.
4. Pursue the BLM landscape-scale projects for Berryessa Region.
5. Develop and print a pre-attack map for firefighters showing access and water and critical infrastructure, structure locations.
6. Harden above-ground water supply lines, replace damaged water storage tanks

### **One final note:**

As of the date of this writing, the boundaries of the Berryessa West Fire Safe Council are as shown and reported in this CWPP.

There is currently discussion about changing the boundary to short a few parcels near the intersection of Knoxville Rd., Capell Valley Road and Sage Canyon Road to the newly-created Capell Valley Fire Safe Council. These are expected to affect fewer than five parcels and involve less than 200 acres.

Any changes that are agreed-upon by both fire safe councils and NCCFF will be reflected in the next CWPP update.

## Approval Signatures

The Berryessa West Community Wildfire Protection Plan was developed collaboratively and in consultation with interested parties, including Napa Communities Firewise Foundation, Napa County Fire Department, CAL FIRE, and the residents of the Berryessa West community.

The Plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends other types and methods of treatments that will help protect the Berryessa West Community.

The following entities acknowledge the receipt of this Community Wildfire Protection Plan:

Acknowledged:  Date: 08/08/2025  
[Anne Cottrell \(Aug 8, 2025 08:46:00 PDT\)](#)  
Anne Cottrell, Supervisor, Napa County District 3

Acknowledged:  Date: 08/11/2025  
Matt Ryan, Unit Chief, CAL FIRE and Fire Chief, Napa County Fire Department

The following entities mutually agree with the contents of this Community Wildfire Protection Plan:

Agreed:  Date: 08/11/2025  
[Christopher Thompson \(Aug 11, 2025 14:15:58 PDT\)](#)  
Christopher Thompson, Chairman of the Board, Napa Communities Firewise Foundation

Agreed:  Date: 08/12/2025  
[Megan Jepsen \(Aug 12, 2025 07:52:05 PDT\)](#)  
Megan Jepsen, Co-Lead, Berryessa West Fire Safe Council

Agreed:  Date: 08/12/2025  
[Cheryl Bean \(Aug 12, 2025 08:55:39 PDT\)](#)  
Cheryl Bean, Co-Lead, Berryessa West Fire Safe Council

Agreed:  Date: 08/12/2025  
[Julia Robinson \(Aug 12, 2025 10:10:42 PDT\)](#)  
Julia Robinson, Co-Lead, Berryessa West Fire Safe Council