WILDLAND FIRE PROTECTION PLAN

ATTACHMENT E

to the
Fa Yun Chan Temple Project Initial Study / Mitigated Negative Declaration

Wildland Fire Protection Plan

February 2024

Fa Yun Chan Temple
Castro Valley, CA

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I. PROJECT DESCRIPTION

A. PROJECT LOCATION AND EXISTING USES

The approximately 10-acre active project site (Assessor's Parcel Numbers 085-5000-001-1 and 001-26, 085-4060-001-09) is part of a 97.4-acre site located on a south facing hillside at 7825 Crow Canyon Road in Castro Valley, California. The project site is located in a hilly, rural area northeast of Castro Valley's urban area. The 97.4-acre site is currently composed of 12 parcels. The applicant is proposing to reconfigure the site into 5 parcels, two of which, parcels A and B, would include the current project, which would cover approximately 10 acres.

The project site is currently developed with existing facilities belonging to the project sponsor, including one two-story main residential building and eleven other one- and multi-story structures originally built as other residences, barns, garages, a paved parking lot and internal roads, a paved driveway connected to Crow Canyon Road, and pavement around the buildings. The main residence is home to 3-4 masters and/or nuns. The Temple does not currently host any public programs at the project site.

B. SURROUNDING LAND USES

Neighboring uses are interspersed with open space and consist of a mix of commercial uses along Crow Canyon Road, including Apple Creek Farm (horse-riding school and stables) to the southwest, Crow Canyon Park to the northwest, Canyon Creek Ranch to the north and rural residential uses to the north along Crow Canyon and Norris Canyon roads. Open space lies immediately to the east. Existing uses along Crow Canyon Road and Norris Canyon Road are rural residential, park lands, and commercial uses including a horse-riding school and stables, and farms.

Figure 1. Land uses in vicinity of Project Site. Project site is on the right.

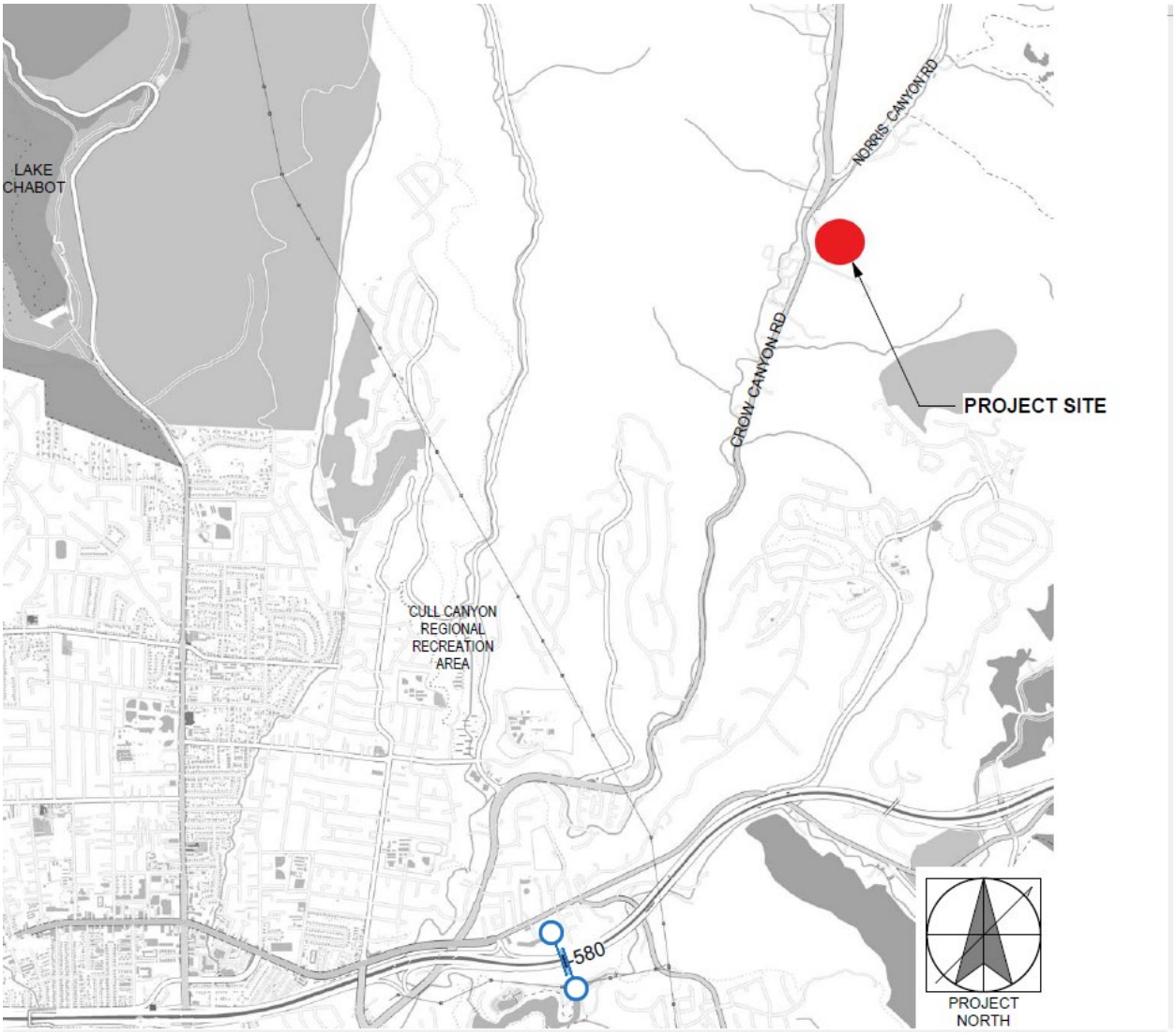

Figure 2. Map of the project site and surrounding vicinity.

C. DESCRIPTION OF THE PROJECT

1. BACKGROUND AND OVERVIEW

According to the Project Description, "Fa Yun Chan Temple currently operates as a Buddhist temple out of their main facility at 512 8th Street, in Oakland, CA and will continue to do so. The proposed project would provide a larger secondary facility in a natural setting in which Temple staff and long-term visitors could reside, weekly meditation sessions and monthly training sessions could be held, and two annual events could be hosted. Other than tours of the Buddha statues, which would be open to the public, events at the proposed secondary facility would be intended for Temple members and visiting masters/esteemed guests. Larger events would utilize shuttles for transport of Temple members to the secondary site.

The proposed project would proceed in two phases, as described below.

2. Phase 1

Phase 1 would involve the renovation of the existing main residence for continued and expanded use as a residence for up to 6 members of the Temple staff and to host small meditation sessions. The renovations would be to the interior, with no change to the building's footprint. Phase 1 would also include the placement of 4 Buddha statues, up to 44 feet (above ground level) tall, in the surrounding hillsides, with a meditation trail leading to and/or connecting them. All other existing buildings would remain vacant or used as storage locations, as under existing conditions. Chan Meditation practice, which is open to members of the Temple, will be offered on Sunday only between 2 pm to 5 pm. Expected attendees for the meditation practice are 10 to 20 people.

Once constructed, daily tours of the Buddha statues would be offered for up to 15 people at a time for a total of up to 30 visitors daily in 2 or 3 groups.

3. Phase 2

Phase 2 would include the demolition of all other existing buildings (currently vacant or used for storage) and the construction of a Buddhist Temple Compound consisting of 5 new buildings. These buildings would provide assembly space for meditation activities and other Temple events and residential space to support guests. Including in the main residence improved in Phase 1, up to 15 full time residents would be living at the project site, including 3 to 5 long-term guests (more than 90 days). An additional 25 short-term overnight guests could be accommodated at the site, with overnight stays expected to coincide with monthly "eight precepts" practices (arriving the morning of the first Sunday of the month and leaving the next morning), and a week-long annual Dharma Service Event in December. Including the up-to-25 overnight guests, the annual Dharma Service Event would be expected to attract up to 150 daytime attendees. Shuttles would be provided to/from the main Fa Yun Temple in Oakland and from the Castro Valley BART station for attendees.

Buddha statue tours would continue as under Phase 1 and the weekly Sunday Chan Meditation practices would continue to be held, with attendees expanded to a maximum of 40.

Additionally, single-day meditation retreats (no overnight guests) would be offered on selected Sundays in January, March, and November for up to 100 daytime guests. Shuttles would be provided to/from the main Fa Yun Temple in Oakland and from the Castro Valley BART station.

The proposed new buildings include two 3-story buildings and three 2-story buildings, ranging from 6,274 square feet to 12,092 square feet. The tallest building would have a height of 58 feet. The total development footprint at the end of Phase 2 would be similar to the existing footprint, plus the additional area (of approximately 4,900 square feet) for the four proposed statues, all occurring within an approximately 10-acre portion of the site.

Other site improvements would include stabilization of the hillsides, replacement and expansion of the current leach field and provision of individual wastewater service laterals, septic tanks, and ejector/grinder pumps. Additionally, a new fire suppression system would be provided, consisting of a new fire pump and delivery system with sufficient on-site water storage to provide fire protection as required under National Fire Protection Association standards. This system would serve all buildings onsite with the exception of the renovated residence building. A second driveway off of Crow Canyon Road would be built as a private entrance. Landscaping would include stormwater treatment areas.

4. Access and Parking

The project site is accessible by automobile. The existing driveway toward the north end of the project site's frontage along Crow Canyon Road would be maintained as a secondary fenced vehicular access point. A new main vehicle entry would be added to connect further south along the Crow Canyon Road frontage.

The existing visitor parking lot would be made more accessible, with wheelchair accessible golf carts providing transport from the parking lots or between site destinations, as only portions of the walkways would be ADA compliant on the hillside site. A total of 28 parking spaces would be available between the two parking lots. Shuttle bus service for larger events is proposed, with a 50-person shuttle bus or buses providing service from the Fa Yun Chan Temple in Oakland and the Castro Valley BART station to larger events. Golf carts would again be utilized to shuttle visitors from the shuttle drop off to the event location as necessary.

5. Utilities

The project would redevelop a site already partially provided with utilities and services. Localized lines may need to be extended or relocated within the project site for utilities to the new buildings. (See Section 19: Utilities and Service Systems for additional discussion of utilities.) Water for the site would continue to be provided by the on-site well [still under discussion]. Currently the well is permitted for residential use. It would be permitted for project use through a Conditional Use Permit. Water storage tanks would be installed for fire protection."

Use	Max. Attendees	When	Trip Notes
Residents	15	In residence	no shuttles
Buddha Statues tour	15 (at a time – up to 30 daily in 2 or 3 groups)	Every day	no shuttles
Sunday Meditation Session	40	Weekly on Sunday (except first Sunday) 2:00-5:00pm	no shuttles
Eight Precepts Practice	25	First Sunday, arrive Sun 8-9am leave on Monday 8-9am	no shuttles
One-Day Meditation Retreat	100	9am to 5pm on selected Sunday in Jan, Mar and Nov. (Assume will not occur on same day as the two above?)	20% drive plus shuttles At least two shuttle trips by a 50-person shuttle bus from/to: Fun-Yun Temple at Oakland, Ca and Castro Valley BART station.
Annual Dharma Service Event	150	1 week in December, Sun 9am start and Sat 5pm end (Assume will not occur on same day as the three above?)	20% drive, plus shuttles At least three shuttle trips per above. Expect overnight stay up to 25 guests.

Table 1. Proposed Site Uses.

II. EXISTING CONDITIONS

A. FACTORS TO CONSIDER IN THE WILDLAND FIRE PROTECTION PLAN

1. TOPOGRAPHY

Topographic features - such as slope, aspect (orientation with respect to sun and wind), and the overall form of the land - have a profound effect on an area's ecology and the pattern of heat transfer in a wildfire. Topography affects a wildfire's intensity, burning rate (consumption of fuels), 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 diurnal upslope and downslope winds. The speed, regularity, and direction of winds directly influence the direction of wildfire spread and the shape of the flame front.

According to the Project Description, the development site slopes towards the west, with varying elevations above mean sea level of approximately 580 to 530 feet. The driveway slopes downward to meet Crow Canyon Road at approximately 415 feet above mean sea level. The ridgeline to the east and northeast tops at approximately 810 feet with steep slopes. The northeastern hills were extensively graded in the past and contain many tiered retaining walls.

From observations on Google Earth, elevations across the Fa Yun Chan temple project site range from 415 feet where the driveway meets Crow Canyon Road to 810 feet at the highest point of the ridgeline to the east and northeast of the site. The site generally slopes towards the west; the developed area of the site is concentrated in these lower elevations near Crow Canyon Road. The northeastern hills were extensively graded in the past and contain many tiered retaining walls. The project site is prone to landslides and unstable ground due to underlying fill materials and landslide debris.

Figure 3. Terrain on the Fa Fun Chan Temple east of development site.

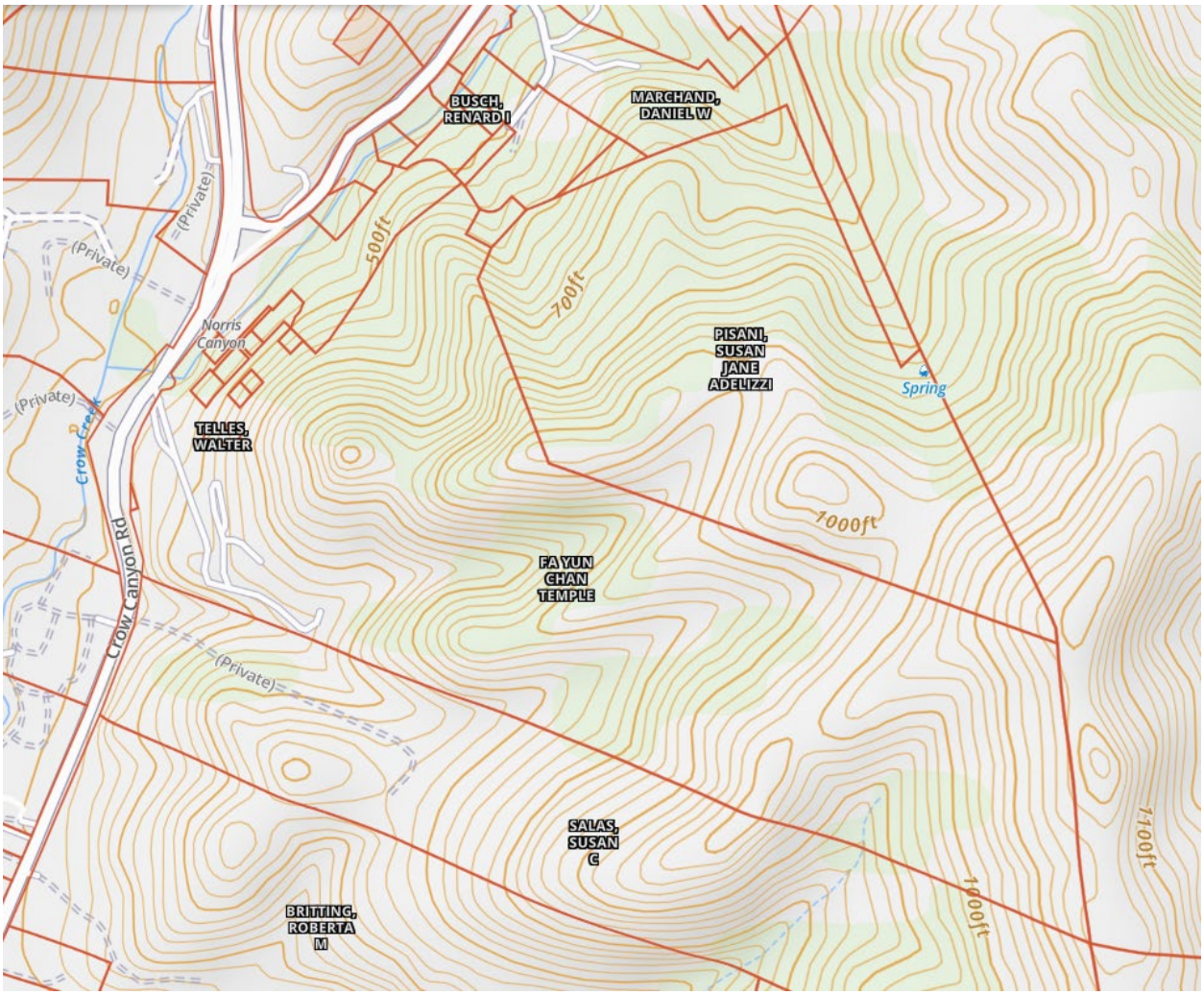

Figure 4. Topography of the Fa Fun Chan Temple property and adjacent parcels.

2. WEATHER

General Weather Information

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

Wind direction and velocity profoundly affect fire behavior, but wind is considered the most variable and unpredictable weather element. 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 surface winds can also control the direction and rate of the fire's spread. Aloft winds, defined as those that blow at least 20 ft above the ground, can carry embers and firebrands downwind. These burning fuels can ignite spot fires that precede

the primary front. Gusty winds cause a fire to burn erratically and make it more difficult to contain.

The winds that create the most severe fire danger, known as the "Santa Ana" or "Diablo" winds, typically blow from the northeast. Because the site is situated west of a major expanse of open space, the worst-case scenario would be an easterly wind that would cast countless embers in the dry grass that surrounds the developed area.

However, winds from the west are also likely to cause unacceptable damage, particularly to the project site. At the end of "Diablo" wind conditions, the fog often moves quickly shoreward, preceded by a brisk, high-speed northwest wind. Under these conditions, the fuels would still be dry from the previous weather conditions. The combination of the northwest wind and the west-facing slope would quickly spread the fire.

Local Weather Conditions

The project site's location in proximity to the coast influences its weather conditions. It has the warm, dry summers and cool, moist winters characteristic of the fog belt area. The area averages about 18+ in. of precipitation a year, primarily in the fall and winter. Most of the measurable rainfall generally occurs during the winter months (mid-October to mid-April). Thus, the fire season (the time of highest fire danger) comprises the dry months of May to October.

The wind normally blows from the west but, as discussed above, the most severe fire conditions occur in association with strong north or northeast winds. Under these conditions (common in the fall), humidities drop to 10% and temperatures soar to over 100 ^{o} F.

In addition, occasional episodes consisting of several still, stagnant days formed by stationary highs occur during summer months. During these periods—characterized by continuous high temperatures and low relative humidities—fuels dry to a National Fire Danger Rating System rating of over 81 for the Burning Index, indicating extreme resistance to fire-control. This overall weather pattern creates extremely low humidities and enhances the possibilities of ignition and extreme fire behavior.

Local weather stations reported ninetieth percentile values for relative humidity as 37%, temperature as 77^{o} F, and wind speed as 11 mph. Seventy percent of the observations recorded winds from the west and southwest; only 13.4% of the observations recorded winds from the north, northeast, or east. The vast majority of hot days coincided with winds from the southwest.

Although summertime temperatures are usually quite warm (75 to 85 ^{o} F), it is common for the fog to roll in during the early evenings. Thus, proximity to the bay often creates a pattern of hot days and cool nights. Fog also sometimes keeps summertime temperatures cool in the project site.

Northeasterly winds (typical fire weather conditions) will be especially conducive for transport of embers. The most extreme weather values typically are recorded during Diablo wind events in October. The driest recorded relative humidity was 9%; the highest recorded temperature was 103 ^{o} F, and the greatest recorded wind speed was 34 mph. Usually days with recorded relative humidities below 20% are associated with Diablo wind events.

Highest temperatures are normally recorded during June and July and associated with weak winds coming from the ocean. The highest temperatures produced by Diablo weather are also generally recorded in June and July. During the Diablo weather in October associated with high winds (> 10 mph), the temperature generally registers below 75 ^{o} F and is associated with fairly constant relative humidities. Diablo events generally last from 15 to 35 hours. During a Diablo wind event, the wind direction is somewhat sporadic, sometimes even exhibiting a complete reversal for 2-4 hours. The wind speed ramps up slowly - from 1-2 mph up to its maximum speed, and then down again - similar to a bell-shaped curve.

3. FIRE HISTORY

The East Bay hills' combination of hot dry summers, conducive topography, flammable vegetation, dense urban development, limited fire-fighting access, and Diablo winds present significant risks to the public, structures and property located along the wildland-urban interface.

Figure 5 indicates the wildfire history of the East Bay Hills from 1950 to 2017. Of these fires, 11 Diablo wind fires burned 9,840 acres of the East Bay hills between 1923 and 1998, destroying 3,542 homes and killing 26 people, with more than 2 billion dollars in financial loss in current dollars. Most of these losses occurred from two fires: The 1923 Berkeley Fire and the 1991 Oakland Tunnel Fire. During the same period, three large west-wind fires burned 1,230 acres of grass, brush, trees, and four homes in the East Bay hills. For eight decades, the 1923 Berkeley Fire, which burned 130 acres north of the Plan Area, held the California record for the greatest number of structures destroyed by wildfire (584 structures). Then, the 1991 Oakland Tunnel Fire set a tragic record for loss of homes to California wildfire. Until 2017, the 1991 Tunnel Fire stood as the highest destruction of California homes per acre.

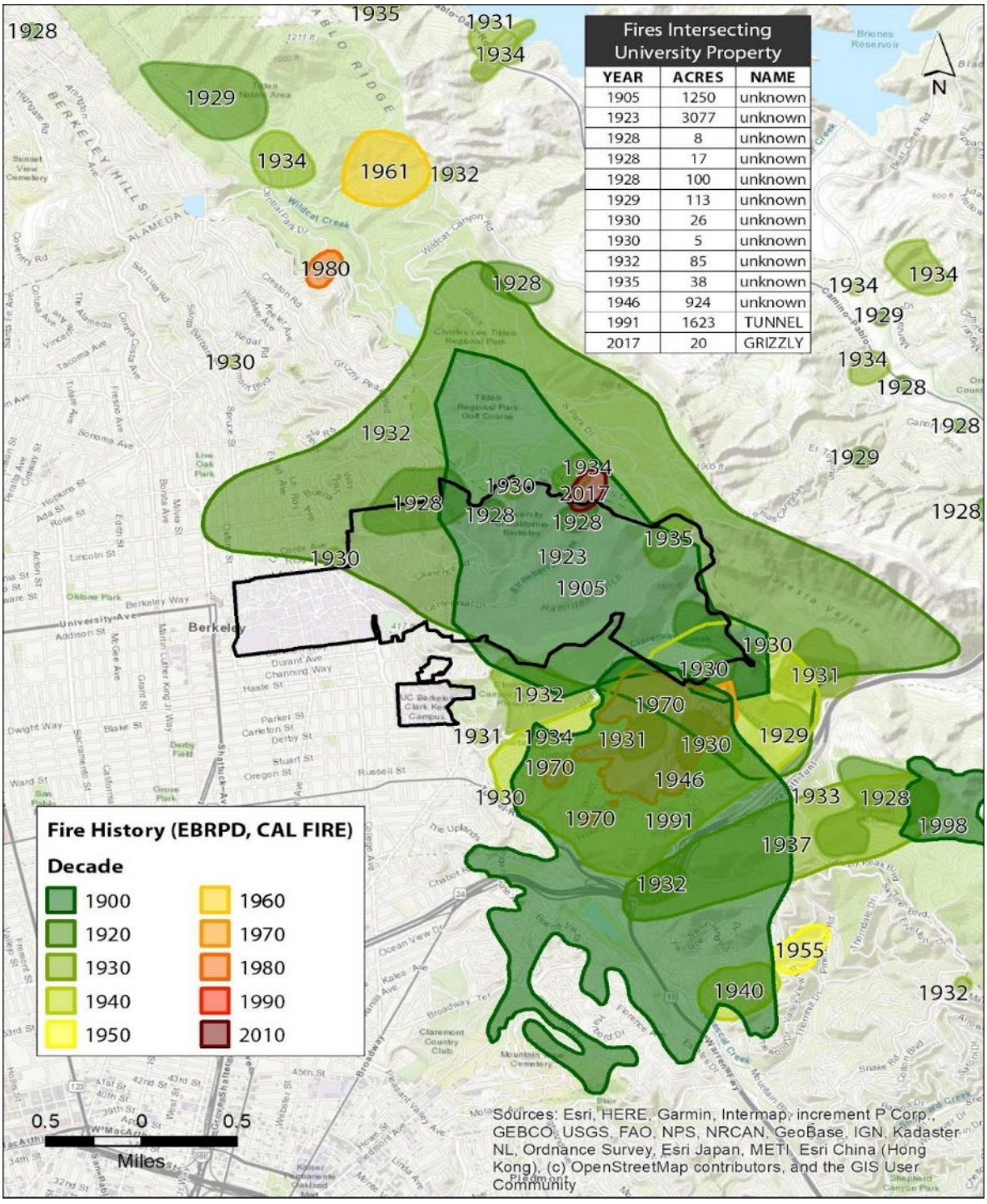

Figure 5. Fire History Map of the East Bay.

The nearest wildfire in the CAL FIRE and US Forest Service database is the Cull Canyon Fire, of July 21, 1954. This fire, or unknown cause, burned 312 acres. The diamond-shaped icons indicate ignitions that do not a perimeter associated with them, because they are too small, or not enough information is known about them to map the area.

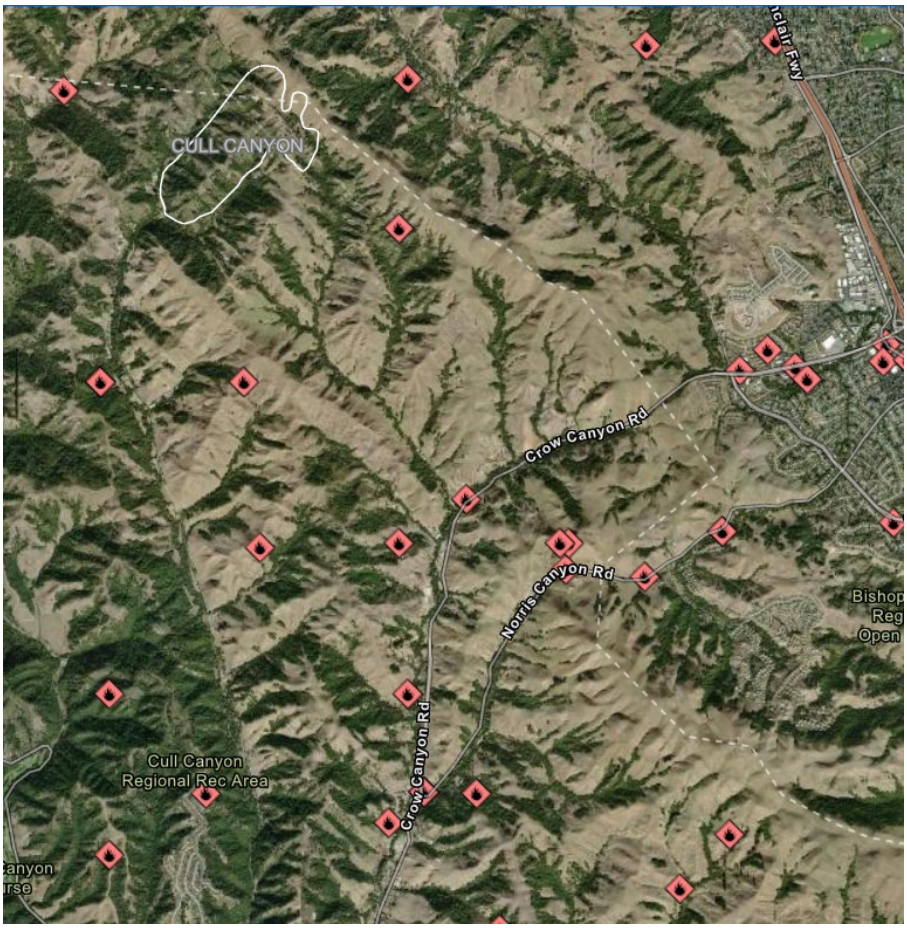

Figure 6. Perimeter of wildfires in the vicinity of the project site, and locations of unmapped ignitions.

4. REGULATIONS AND CODES

There are multiple relevant jurisdictions, regulating authorities, and codes which this project must address.

Alameda County Ordinance No. 2022-55 and -56 amended Chapter 6.04 of Title 6 relating to the prevention of fires, and adopts the 2022 California Fire Code and makes amendments.

Section 4903 CA Public Resources Code authorizes the fire code official to require the development of a fire protection plan, to be prepared by a qualified specialist who will analyze the wildfire risk of the building, Project, premises or region to recommend necessary changes.

The plan itself will include a project-specific wildfire hazard assessment that considers the Project location, topography, aspect, and climatic and fire history, and indicate that the plan conforms with all applicable fire safety regulations. The plan will address not only fuel reduction and building methods and materials required by state codes, but also fire department access, egress, road and address signage, water supply.

PRC 4903 specifically requires maps of boundaries, terrain, building footprints and fuel modification zones as well as natural vegetation and restoration plans. For fuel modification zones, details regarding the plant type, size and irrigation demands. Points of access to commonly-held lands is an additional requirement. Legally binding commitments of work done on commonly-held lands is a requirement as well. This plan satisfies the requirements of Section 4903.

The Fire Safe Regulations (State Minimum Fire Safe Regulations) have recently been revised, adopted in January, 2023; however interpretation of these regulations is being relegated to counties. These address access road, driveway and dead-end road standards for new development and in places where structures are to be re-built after wildfire. In addition, strategic ridgelines may be preempted from development. Interpretation of these regulations are referred to the local counties.

In addition, new legislation has been passed that affects the site planning.

AB3074 (Friedman, 2020) 1updated the requirements of defensible space in 4291 with the introduction of ember resistant zones zero to five feet from structures (Zone 0).

Section 4906 Vegetation Management is a new amendment that requires identification and maintenance of the vegetation management zones adjacent to new structures, as well as design criteria for specific types of fire-resistant and non-fire-resistant vegetation.

Section 4908 Fire Safe Development Regulations & Section 4909 Subdivision Review Survey are new sections which require that local governments survey every five years existing subdivisions in the SRA or VHFHSZ without a secondary egress route. Subsections authorize the Board of Forestry and local government bodies (as identified by the State Fire Marshal) to make recommendations that may involve creating secondary access or access road improvements, or alternatives.

A key regulation that affects site planning is the California Environmental Quality Act (CEQA). When considering the environmental impacts of a project, completion of an Initial Checklist is required. Section 20 of Appendix G, of the Environmental Checklist Form (included in its entirety in the Appendices of this plan) pertains to wildfire. In order to evaluate potential environmental impacts, the checklist asks the following questions: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

[1] Text of AB3074 (Friedman, 2020) https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB3074 accessed 10/3/22. Board of Forestry https://bof.fire.ca.gov/ and https://bof.fire.ca.gov/media/54flflkr/wkshp-3-valachovic-presentation_ada.pdf

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Because answers to these questions determine whether impacts of a project are significant, this checklist directly influences and generally supports efforts to improve wildland fire safety.

In addition to these local and state regulations, Alameda County has two plans that are pertinent to wildfire protection planning.

The Alameda County CWPP provides recommendations for reducing wildfire risk, including increasing awareness of hazard conditions; restricting certain equipment or work during high fire danger weather; maintaining and enforcing defensible space around buildings and reducing fuel sources adjacent to buildings; planting fire-resistant plants and using fire-resistant building materials; managing vegetation responsibly; and creating collaborative partnerships between local communities, natural resource, and fire response groups.

Alameda County Emergency Operations Plan describes the wildfire threat to the county, and provides an overview of emergency response policies, response and recovery organization, as well as the roles and responsibilities assigned to governmental agencies and community partners.

III. ANALYSIS OF WILDLAND FIRE HAZARD AND RISKS

This section identifies the primary risks for fire on the Fa Yun Chan Temple project site and the existing patterns or trends for fire in the vicinity.

Some of the fuel types are not easily ignitable – specifically vegetation in woodlands, riparian vegetation, compared to annual grass or pine or eucalyptus litter. However, non-native grasslands and scrub with grass intermixed are prone to ignitions, especially when they are near roads or human activity. Unsafe human behaviors (i.e., illegal campfires, fireworks, etc.) are the likely primary source of fire ignition within the project site. Based on fire history, fuel types, road characteristics, and access or human activities on the site, the anticipated probability of wildfire ignition is low. The limited access and site use minimize the risk of human-caused wildfires.

A. DESCRIPTION OF VEGETATIVE FUEL TYPES PRESENT ON THE PROJECT SITE

The term “fuel” is used to describe any material that will burn, whether vegetative or structural component. A single fire may consume shrubs, grasses, trees, woodpiles, and homes as fuels.

Fire managers in virtually all US agencies (as well as in other countries where wildland fire hazards are significant) use fuel model systems for computerized fire behavior prediction systems (FBPS). Information regarding fuel volumes and fire-behavior descriptions is based upon fuel models described in *How to Predict the Spread and Intensity of Forest and Range Fires*, by Richard C. Rothermel (1983), published by the USDA Forest Service Intermountain Forest and Range Experiment Station, General Technical Report INT–143. Fuel models relevant to the Fa Yun Chan Temple project include grassland and Coast Live Oak and Bay forests classified as Very High Load Broadleaf Litter fuel type. Each fuel model is given a number designation, which is interpreted by fire managers across the continent to mean the same thing.

Fuel models describe vegetation structure in addition to typical species composition. The most significant factor is the amount and distribution of smaller-diameter fuels, because these materials generally spread wildland fires.

Another important factor is the amount of dead biomass and the ratio of live-to-dead material in brush and tree stands, since dead biomass contributes fine fuel litter as well as carry flames more readily. Fuel models include these considerations.

The spatial distribution of each fuel type on the project site and surrounding area is depicted in Figure 7, which identifies unique fuel types. In general, the fuel model assignments were based on the mapped vegetation types and associated expected surface vegetation that would carry a fire. All shrub vegetation types were assigned a shrub fuel model, tree vegetation types were assigned a tree fuel model, and grass vegetation types were assigned a grass fuel model.

Nearly half of the project site is dominated by Coast Live Oak and Bay Forest, classified here as Very High Load Broadleaf Litter fuel type. The Coast Live Oak on the slopes present on the project site and surrounding vicinity is predicted to burn with extreme fire behavior (flame lengths greater than 20 feet, very high rates of spread, and torching fires). Swathes of Bay Forest in the valleys in the center of the project site exhibit more moderate fire behavior due to the streams in these valleys, although, as discussed below, these areas are still predicted to exhibit moderate flame lengths and torching in the event of ignition. Grassland dominates most of the rest of the project site, especially along the slopes and ridges of the eastern half of the site. These swathes of grassland are predicted to exhibit moderate to extreme fire behavior in the event of ignition. As discussed below, the patches of forest-shrub and grass-shrub in the north and center of the site are also predicted to burn with extreme fire behavior, with flame lengths above 20 feet, torching, and the highest rates of spread mapped on the site. Developed areas of the project site are not predicted to burn, although they may be impacted by fires that develop elsewhere on the project site or surrounding vicinity.

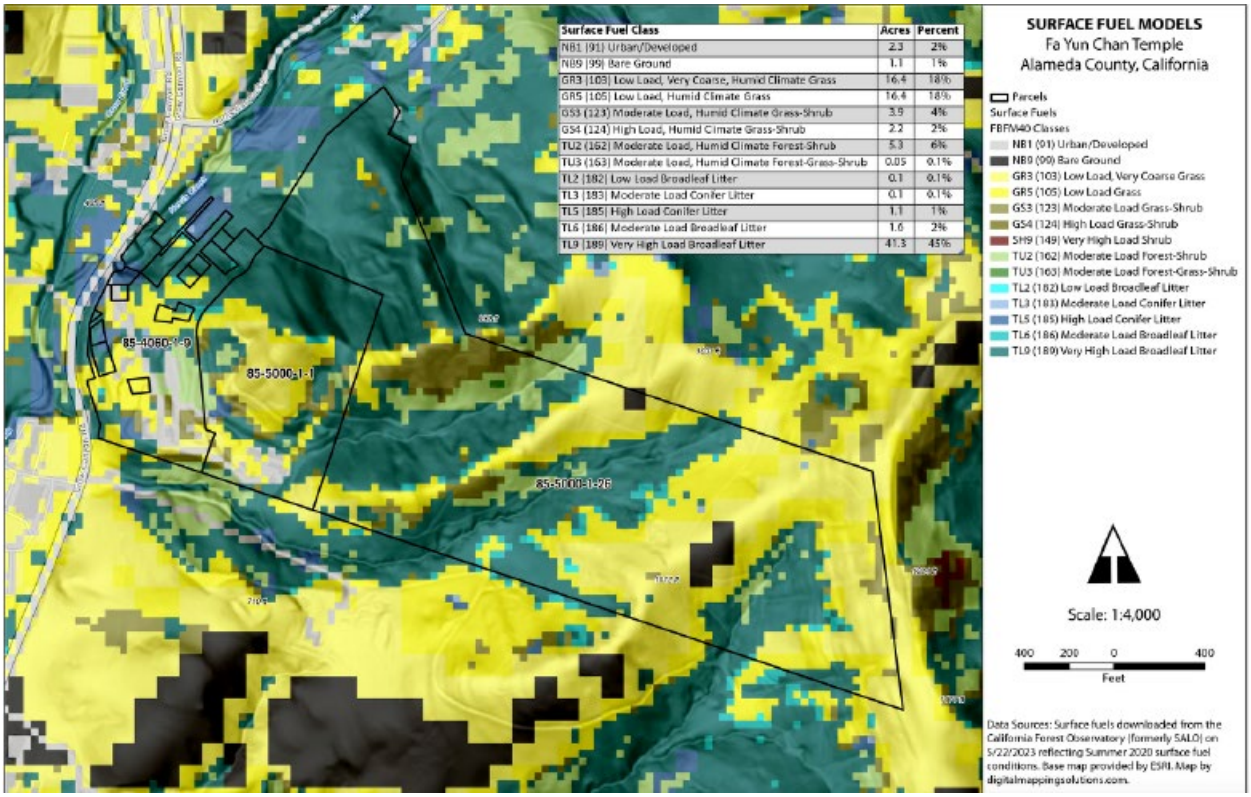

Figure 7. Map of vegetative fuel types on the project site.

Surface Fuel Class	Acres	Percent
NB1 (91) Urban/Developed	2.3	2%
NB9 (99) Bare Ground	1.1	1%
GR3 (103) Low Load, Very Coarse, Humid Climate Grass	16.4	18%
GR5 (105) Low Load, Humid Climate Grass	16.4	18%
GS3 (123) Moderate Load, Humid Climate Grass-Shrub	3.9	4%
GS4 (124) High Load, Humid Climate Grass-Shrub	2.2	2%
TU2 (162) Moderate Load, Humid Climate Forest-Shrub	5.3	6%
TU3 (163) Moderate Load, Humid Climate Forest-Grass-Shrub	0.05	0.1%
TL2 (182) Low Load Broadleaf Litter	0.1	0.1%
TL3 (183) Moderate Load Conifer Litter	0.1	0.1%
TL5 (185) High Load Conifer Litter	1.1	1%
TL6 (186) Moderate Load Broadleaf Litter	1.6	2%
TL9 (189) Very High Load Broadleaf Litter	41.3	45%

Table 2. Vegetative fuel types mapped on the project site.

Figure 8. Photo of Grass-Shrub fuel types in foreground, and Grass fuel type on top of the image.

Figure 9. Timber-Litter fuel types common in the valleys of the project site.

B. PREDICTED FIRE BEHAVIOR

Regionally, fire behavior is expected to be extreme. In critical weather, fires are expected to burn with extreme behavior, high rates of spread, and long-range spotting.

Figure 10. Vegetative fuels and land uses of adjacent parcels.

A fine-scale analysis of potential fire behavior across the Fa Yun Chan Temple project site is useful to determine the possible effects of wildfire, and potential for spread and containment of a wildland fire. For this purpose, a worst-case scenario was used to reflect conditions during an event of high impact.

For this analysis FlamMap, a computerized fuel and fire behavior prediction model, was used to predict fire behavior. FlamMap assumes the entire area is on fire under the same weather and fuel moisture conditions. Outputs and comparisons can be used to identify the spatial distribution of hazardous areas, as determined by flame length, rates of fire spread, crown fire potential, or combination thereof. The analysis indicates that with existing conditions, fire behavior on the project site and surrounding vicinity is predicted to be moderate to extreme, with moderate to extreme flame lengths dominating the project site and surrounding area,

extremely high rates of spread along the slopes that cut through the site, and torching fires predicted nearly everywhere on the site except the ridgelines and a portion of the developed area that is not predicted to burn.

1. FLAME LENGTH

Flame length is often correlated to the ability to control a fire. A flame length of four feet is the limit of what can be attacked with hand crews, and eight feet is usually treated as a cut-off point for strategic firefighting decisions on whether to attack the fire directly, or instead attempt control through indirect methods. Indirect attack is a method of suppression in which the control line is located some considerable distance away from the fire's active edge. Flame lengths are often used as a proxy for fire intensity because they are highly correlated with natural resource impacts. Flame length is the result of one other fire prediction output: fireline intensity times a constant. Fireline intensity is the result of two fuel model inputs (heat yield or the BTU/lb of fuel and the weight of available fuel) along with one other fire prediction output (rate of spread). Flame length, reported in feet, is the numerical characteristic that encompasses the flaming front of a fire and its interaction with wind and the fire’s radiation and convection heat transfer to adjacent fuel (Andrews, 2018).

Without vegetation treatment, flame lengths on the vast majority of the Fa Yun Chan Temple project site are predicted to range from moderate to extreme in the event of a fire. The slopes on the site, especially those slopes on the western half of the site, are predicted to burn with flame lengths greater than 20 feet, including much of the northern half of the developed area. These areas of extreme fire behavior are associated with the Coast Live Oak swathes and the patch of shrub near the center of the project site. Grass-dominated ridgelines throughout the project site are predicted to burn with flame lengths between 4-12 feet, while the valleys are also predicted to burn with moderate fire behavior, exhibiting flame lengths lower than 8 feet. The grassy portions within the developed area are predicted to burn with flame lengths below 4 feet, while the roads and driveways connected to Crow Canyon Road and the patches of bare ground on the ridgelines are not predicted to burn.

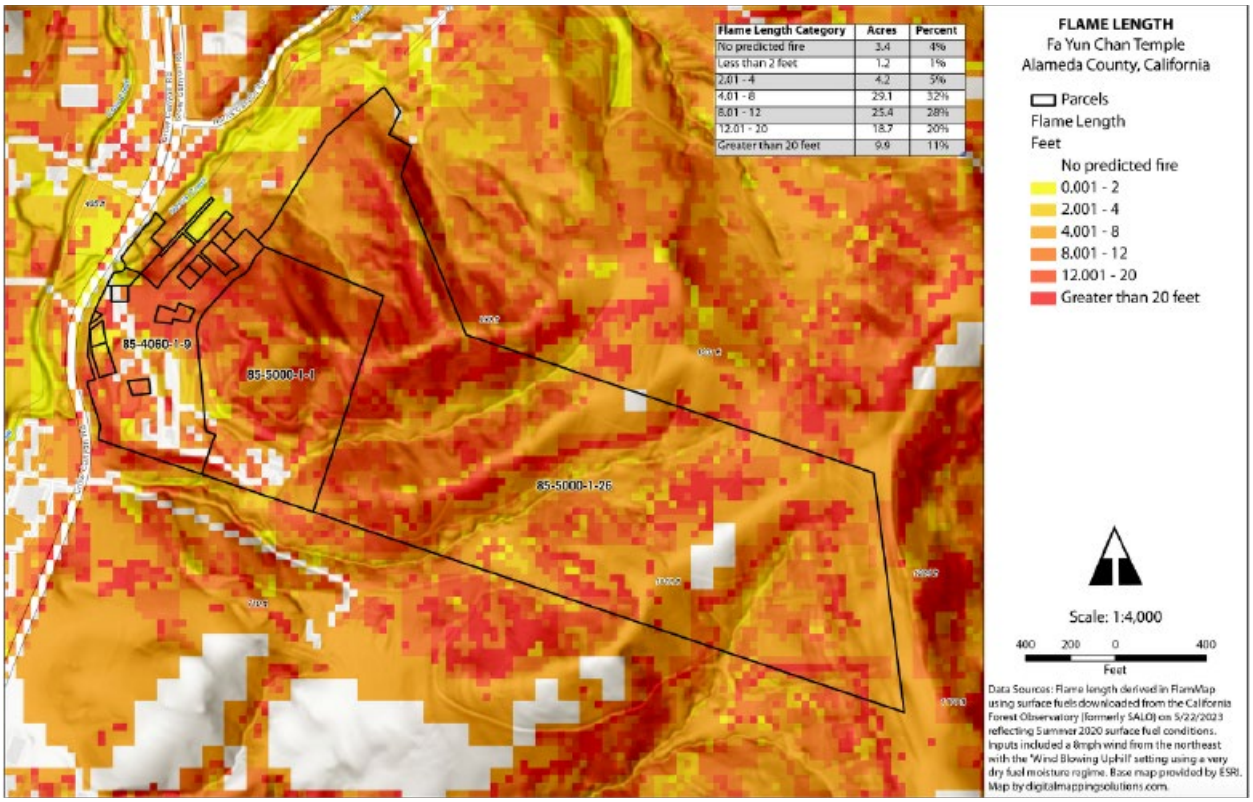

Figure 11. Map of predicted flame lengths on the project site.

Flame Length Category	Acres	Percent
No predicted fire	3.4	4%
Less than 2 feet	1.2	1%
2.01 - 4	4.2	5%
4.01 - 8	29.1	32%
8.01 - 12	25.4	28%
12.01 - 20	18.7	20%
Greater than 20 feet	9.9	11%

Table 3. Acreage predicted to burn with the various flame length categories, considering the total area of the project site.

2. RATE OF SPREAD

Rate of spread, or the rate at which a fire moves across a specific fuel bed, is a much more complicated parameter to determine. Factors used to determine rate of spread include energy released from the fuel wind and slope factor, density of the fuel bed, heat of pre-ignition (i.e., amount of heat required to ignite one pound of fuel), a heat source, and a heat sink along with other propagating ratios and coefficients.

Rate of spread is the measurement of how fast the head (or leading front) of a surface fire advances. The metric of rate of spread is of concern when considering fire containment, response times, and evacuation. A slow-moving fire (for example, slower than 1/8th mile per hour) might be easily contained whereas fast-moving fire (a fire moving faster than one mile per hour) challenges containment and has the potential to move into high value sensitive areas before containment can occur. While a fast rate of spread does not necessarily result in a problematic fire, a fast-moving fire coupled with high flame lengths cannot be suppressed with a hand-crew.

The project site is predicted to burn with a wide range of rates of spread, with the highest rates of spread on the oak-covered steepest slopes within and surrounding the site. These areas of extreme rates of spread constitute nearly a third of the project site, with another 16% of the site – the grass-dominated ridgelines – predicted to burn with high rates of spread (30-40 feet per minute). Another third of the project site is predicted to burn with moderate rates of spread (10-30 feet per minute), corresponding largely with the forested areas in the north of the project site and adjacent areas, along with some of the middle slopes. A fifth of the project site, concentrated primarily in the Bay-dominated valleys and along the roads in the western developed area, is either not predicted to burn or would burn with very low rates of spread. The developed western portion of the site is sharply divided between its southern half, which is either predicted not to burn or to burn with very slow rates of spread, and its northern half, most of which is expected to burn with high to extreme rates of spread (30-40 feet per minute or over 40 feet per minute).

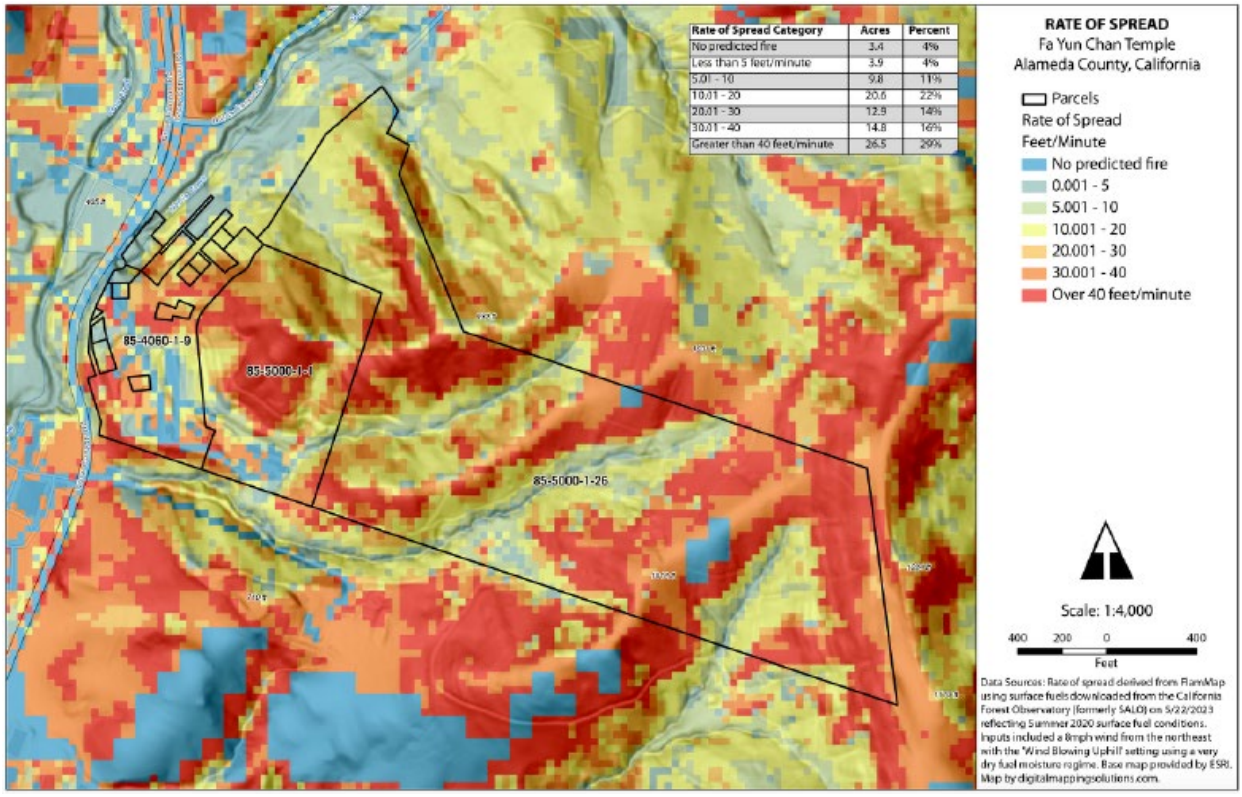

Figure 12. Map of predicted rates of spread on the project site.

Rate of Spread Category	Acres	Percent
No predicted fire	3.4	4%
Less than 5 feet/minute	3.9	4%
5.01 - 10	9.8	11%
10.01 - 20	20.6	22%
20.01 - 30	12.9	14%
30.01 - 40	14.8	16%
Greater than 40 feet/minute	26.5	29%

Table 4. Area predicted to burn with the various categories of rate of spread, considering the total area of the project site.

3. CROWN FIRE POTENTIAL

The description of crown fire activity includes four possible model outputs: surface fire, torching fire, crown fire, or no predicted fire. Surface fires are limited to fire burning in grass, short shrubs, and the understory of a treed environment, or locations with tall shrubs. The transition from a surface fire to the crowns of trees is known as torching, or 'passive crown fire.' Crown fire indicates locations where fire is expected to spread into and possibly consume the canopy of trees or shrubs. Fire spread from tree crown to tree crown is considered 'active crown fire,' and is based on rate of fire spread, the density of the tree crown, and wind speed.

Modeling how a surface fire makes the transition to some form of crown fire is based on the fireline intensity, canopy base height, and foliar moisture content.

It is important to keep in mind that crown fires and torching can occur only where there are trees and tall shrubs. Short shrub stands can burn intensely and still not torch.

When a fire burns through trees or tall shrub crowns, countless embers are produced and are distributed, sometimes at long distances. These embers can start new fires called "spot fires," which can each grow and confound the finest fire suppression forces. "Spotting potential" or "crowning potential" describes the propensity of vegetation to create and disperse embers that have the potential to start new fires well in advance of the main fire. In terms of ecological effects, prediction of torching or crown fire is highly correlated with fire severity and greater environmental impact.

With the exception of two small patches of bare ground on the eastern ridgelines and the roads and driveways connecting to Crow Canyon Road, the entirety of the project site is predicted to burn. The grassy ridgelines constituting a quarter of the site are predicted to burn with surface fires, while nearly three quarters of the site – all of the slopes and valleys – is predicted to torch, including most of the oak-heavy northern half of the western developed area.

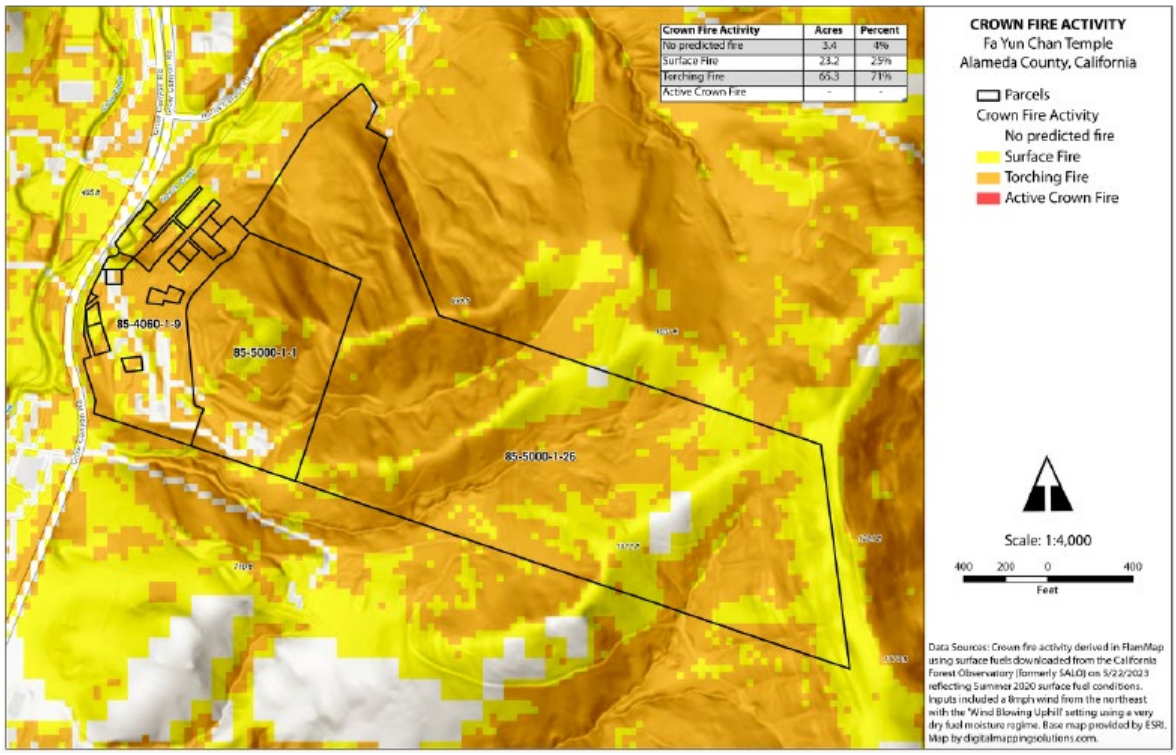

Figure 13. Map of predicted crown fire activity on the project site, considering the total area of the project site.

Crown Fire Activity	Acres	Percent
No predicted fire	3.4	4%
Surface Fire	23.2	25%
Torching Fire	65.3	71%
Active Crown Fire	-	-

Table 5. Area predicted to burn with the various categories of crown fire activity.

C. FIRE HAZARD AND RISK

1. IGNITION POTENTIAL

Currently, there is a low likelihood of ignition on the project site itself due to the low level of activity. Adjacent risk of ignition comes from activities associated with additional residential dwellings and occupants, including the use of vehicles, construction, use of mechanical mowers, barbecues, and generators. Because PG&E is increasingly shutting off power during high fire hazard conditions for public safety, the risk of wildfire ignition from generator use may become more common in the future. Roadside ignitions on Crow Canyon Rd is the most probable location of ignition.

CAL FIRE's annual Wildfire Activity Statistics, 2014-2017 reports indicate the most common causes of wildfires are mechanical use, debris burning, arson, electrical power lines, campfires, playing with fire, and lightning. CAL FIRE's annual Wildfire Activity Statistics, 2018-2021 reports indicate the most common causes of wildfires in Alameda County are vehicles, arson, electrical power lines, and equipment use. Should a fire start, detection and report of the event would be almost immediate.

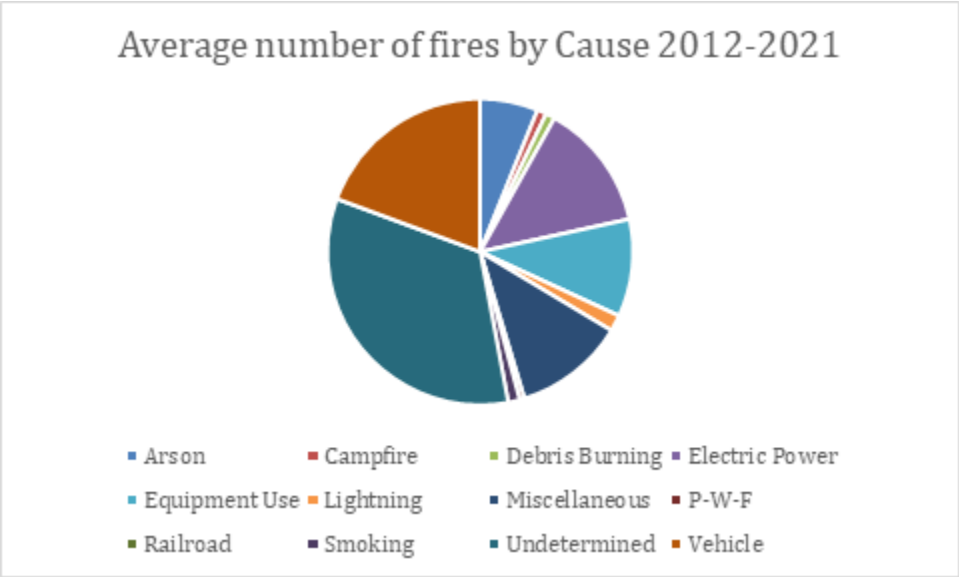

Figure 14. Average Number of Fires by Cause 2012-2021 (CAL FIRE).

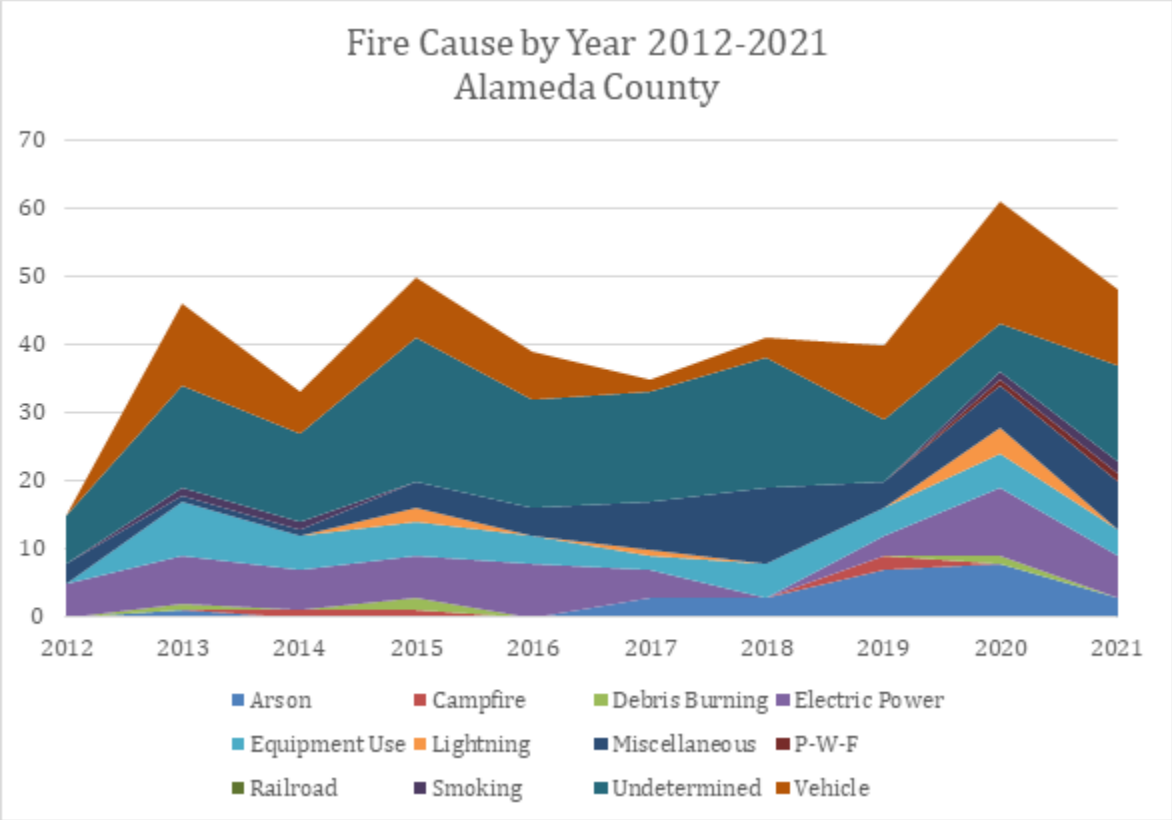

Figure 15. Fire Cause by Year 2012-2021 Alameda County (CAL FIRE).

The risk of a fire affecting the project site is influenced not only by the fuels it supports, but also by the fuels present within the surrounding landscape. Adjacent fuel types are a factor in determining the potential for spread to the project site, especially because the project site is 97.4 acres within a larger matrix of wildland fuels and wildland-urban interface. As depicted in Figure 7, the fuel types on adjacent properties vary between low-fuel volumes and discontinuous fuels (grassland and bare ground) to the south of the project site to highly flammable, high-volume fuel conditions (primarily Coast Live Oak woodland) northwest and north of the project site, which would either propel or allow continuous spread of fire to the property. The level of hazard will vary due to season or climate. While there is risk of fire year-round, this risk is lowest in the spring when foliar moisture is higher.

Perhaps the most direct influence in hazard to the developed portion of the site is the condition of vegetative fuels nearest structures. Vegetation has been managed around roads and buildings, resulting in a reduced level of hazards and risk than in the wildlands.

Figure 16. Managed vegetation near buildings, decreasing possible damage from structures from wildfire.

2. SUMMARY OF FIRE HAZARD AND RISK

Most fire hazard evaluation tools utilize the three main factors of fuels, weather, and topography, with possible inclusions of elevation, or fire history.

In 2007, CAL FIRE mapped Fire Hazard Severity Zones for the entire state of California (FHSZ). The map delineates areas of varying levels of fire hazard based on vegetation, topography, weather, and human-made structures. This hazard assessment is officially linked to land use decisions and building code applicability. Figure XX below illustrates the very high severity zones existing in the East Bay hills due to high population, topography, and heavy fuel loads. Mapping of the Very High Fire Hazard Severity Zones (VHFHSZ), is based on data and models of potential fuels over a 30-50 year time horizon and their associated expected fire behavior, and expected burn probabilities to quantify the likelihood and nature of vegetation fire exposure (including firebrands) to buildings. CAL FIRE created this state-wide data layer to show areas of significant fire hazard based on vegetative fuels, structure density, terrain, weather, and other

relevant factors. Details on the project and specific modeling methodology can be found at http://frap.cdf.ca.gov/projects/hazard/methods.html.

Through these maps, CAL FIRE also recognizes “State Responsibility Areas” (SRAs) and “Local Responsibility Areas” (LRAs). SRA or LRA status indicates which agencies will respond to fire occurring in specific areas. Map users may click on areas of the map to see both the hazard classification and SRA / LRA status. In LRA areas, CAL FIRE did not map any areas that were below the very high severity classification. No portion of the project area is classified as a Very High Fire Hazard Severity Zone.

IV. PROPOSED WILDLAND FIRE PROTECTION PROGRAM

A. PROPOSED FIRE HAZARD REDUCTION MEASURES

1. VEGETATION MANAGEMENT PROGRAM

Standards for Vegetation Treatments

Standards for Defensible Space

- A minimum of five-foot wide zone (the Non-Combustible Zone) nearest the structure should be kept free of all woody plants and combustible materials.
- Keep the ground free of dead leaves, mulch, needles or other plant debris. The ground surface should be composed of inorganic, non-combustible, material such as decomposed granite, pebbles, or rock/flagstone.
- Vegetation in the non-combustible zone could include irrigated lawns and succulents but would exclude woody plants.
- Dead material that drapes over ground cover will be removed. This includes leaves, bark, and branches.
- Cut and chip trees with a high fuel volume that are at risk of falling on buildings, structurally unsound, or are unhealthy. Large, "legacy trees" that are structurally sound, and with branches that are 30-40 feet above ground will be retained.
- Remove all dead plants and dry vegetation.
- Cut grass and weeds within 15-feet of the pavement edge and within 30-feet of a structure to less than four inches in height.
- Remove leaves, bark, and humus under trees and shrubs (including vines and semi-woody species) so that the buildup of leaves and humus will not exceed two inches in depth anywhere in a defensible space within a year. However, do not expose bare earth in over 50 percent of the site.
- Remove dead material that drapes over ground cover (including leaves, bark, and branches).
- From mature trees, remove all vines, loose papery bark, dead branches, and live branches smaller than three inches in diameter to a height of 8 feet above the ground.
- Remove all dead branches from within live ground covers, vines, shrubs (including semi-woody species), and immature trees.
- Prune trees and large tree-form shrubs (e.g., elderberry or toyon) that are being retained.
- All lower tree branches, under three inches in diameter, will be removed up to eight feet above the ground, or on the lower third of trees, whichever is less (see Figure 18, below). OR,
- All lower tree branches, under three inches in diameter, will be removed to provide vertical clearance of three times the height of the understory plants, or eight feet above understory plants, whichever is greater. Retention of short understory shrubs provides aesthetic benefits and wildlife habitat without sacrificing fire safety; alternatively, trees

will be pruned to a higher height in order to allow for screening from the understory shrubs.

- In young trees, remove the branches on the lower one-third of the height of the tree. Example: if a tree is 10 feet tall, prune the lower 3-4 feet and keep the understory plant material to less than one feet in height. As the tree grows to 24 feet in height, it can achieve the eight-foot distance from the ground, and the understory plant material can reach 2.5 feet in height.

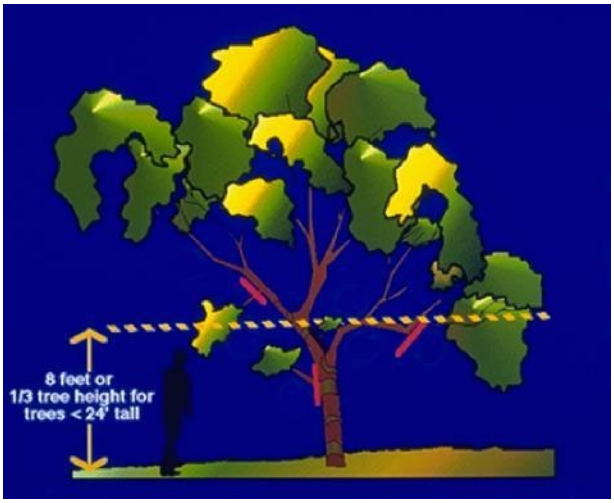

Figure 17. Prune branches to a height of 8 feet above the ground. In young trees, prune branches on the lower one-third of the height of the tree. Do not disturb or thin the tree canopy. This promotes growth in the understory, which is more easily ignited.

- All dead branches smaller than three inches in diameter will be removed. All dead limbs greater than three inches in diameter should be retained where they do not pose a public safety of fire risk.
- Do not thin or prune the upper tree canopy, as this will promote more growth in the lower parts of the tree and may result in increased risk that fire will spread to the tree canopy.
- Sometimes small trees may need to be cut to the ground in order to achieve the separation of the ground level from another, larger, tree canopy, or because mowing equipment cannot avoid the small trees.
- Maintain at least eight feet of vertical clearance between roof surfaces and overhanging portions of trees.
- Manage individual plants or shrub masses to maintain horizontal spacing, per Figure 19 below. Design distinct groupings of shrubs (including vines, semi-woody species, all types of brush, and all chaparral species). Make sure the plant groupings are small enough to provide adequate horizontal separation between groupings and to allow proper maintenance; groupings should measure no wider than two times the grouping height, or 120 square feet. The space between islands should be greater than three times the height of the shrubs (see Figure 19).

- Remove and safely dispose of all cut vegetation and hazardous refuse, using a gasifier or air-curtain type burner wherever possible.
- Chipped materials may remain on site, provided the mulch layer is no greater than three inches in depth.

Figure 18. Shrub island spacing. Design groups of plants small enough to provide horizontal separation between groups. This allows proper maintenance and helps slow the spread of fire. Each shrub or group of plants should measure no wider than two times its height, or less than 120 square feet (or 6 feet x 20 feet). The space between groups should be greater than three times the height of the shrubs.

Standards for Roadside Treatments

Within 10 feet of road pavement edge:

- Grassland vegetation and invasive weeds will be mowed to a 4-inch height or treated with herbicide annually before the grass grows to an average of four inches in height. In unusual circumstances when rains occur after grass is mowed, grass may be allowed to regrow or need to be re-mowed.
- Understory shrubs will be removed under trees or shortened to create a vertical distance between the top of the shrub and the bottom of the tree canopy of three times the shrub height.
- Trees will be pruned of lower branches (to 8 feet in height, or the lower third of branches).
- All tree branches extending over roadway surfaces should be pruned to ensure at least 15 feet of vertical clearance.

Evacuation Support Treatments

In all areas, vegetation treatment for evacuation support focuses on removing highly flammable trees, understory shrubs and small trees that could enable torching, and trees that may block access/egress should they fall. The goal for evacuation support treatments is to improve public safety and reduce loss from wildfires by supporting the conversion of the existing fire-prone forest to vegetation with more favorable burning characteristics.

In the project area located within 30 feet of all driveways and Crow Canyon Road, vegetation treatments focus on achieving a two to four-foot predicted flame length immediately after treatment. Vegetation treatments aim to remove high-volume vegetation and create

discontinuity in the fuel so that in the event of fire, the rate of spread is slowed, and flame lengths meet the treatment goal in treated areas. Fa Yun Chan Temple treats and maintains the first 30 feet from the pavement edge for evacuation support treatments.

In the treatment area, Fa Yun Chan Temple removes all dead, unhealthy or trees leaning toward the driveways and Crow Canyon Road.

In evacuation support treatment areas, Fa Yun Chan Temple removes lower branches of all trees to a minimum height of 8 feet, and understory vegetation. Shrubs are removed or thinned to a minimum spacing of 6 feet. Surface vegetative fuels may include short shrubs with little dead material, leaf litter, annual and perennial grass. Taller shrubs may be present well away from a tree canopy. Grass is cut every fire season within 10 feet of the pavement edge of driveways and Crow Canyon Road. Branches hanging over roadbeds or fire trails are trimmed to a height of 15 feet above ground. Dead surface fuels smaller than six inches in diameter are removed. Leaf litter of less than six inches in depth is typically left and dead trees are removed. Chips will cover most surfaces within the area upon completion of the treatment; in this treatment area chip depth can be as deep as six inches.

Figure 19. Location of vegetation treatments for evacuation routes.

Exhibit A. Location of defensible space Zones.

2. ACCESS FOR EMERGENCY RESPONDERS AND EVACUATION

This WPP recommends that the Fa Yun Chan Temple repair and retrofit the fire trail on the undeveloped portion of the property to facilitate emergency evacuation and allow emergency responder access from adjacent properties to the north and south. The fire road will need to be re-graded. The project should also improve existing fire roads in the western developed portion of the property.

Figure 20. Fire road to be rehabilitated to connect with adjacent landowners.

Additionally, whenever the Temple hosts large-scale events in which attendees will be shuttled into the project site, the Temple is responsible for monitoring Red Flag fire conditions to ensure efficient evacuation in case of a fire. If a large-scale event occurs on a Red Flag day, all shuttle buses must stay on site in order to facilitate evacuation in case of emergency.

3. WILDLAND FIRE RESPONSE

Any fire on the project site is a high concern, and under severe weather conditions a fire can ignite and spread too quickly to be suppressed by local firefighting staff and equipment, burning structures and causing unacceptable damage. Initial wildfire response is provided by the Alameda County Fire Department. This section of the fire prevention plan includes guidelines regarding signage, training, equipment, and communication in order to support a speedy and efficient wildfire response.

Fa Yun Chan Temple should develop plans to modify or cancel events based on increased risk due to weather conditions or coincidental events.

Wildfire response can be aided by correct, official address signage in reflective, large fonts, with high contrast. Water supply and fire department connections will need to be signed in a similar fashion.

Training for staff that will be present during events is essential. Training would encompass what to do if a wildfire starts, from detection to reporting, to operations (extinguisher training) and evacuation (i.e., what protocols are there for notifying guardians of minors, site residents, other employees and visitors). Participation of at least one staff member in a local Community Emergency Response Team is advisable.

Equipment, including a fire extinguisher, assists wildfire response. A water hose should be connected during events, and staff should be familiar with the location of the valve. Ensure all valves are ball valves, not gate valves to avoid water hammer damage to conveyance systems.

Communication, through radios or other means assists emergency response. Radios should be present and operated every time the ballfield is used. A contact sheet should be also present and updated yearly. The public address system and visual/audio system should be used in the event of an emergency to assist with evacuation.

Pre-Attack Planning

Pre-attack planning includes the preparation of site-specific maps with building locations, non-obvious blockages or narrow or steep paths, fire trails that lead off property, water sources and fire department connections, and locations of particular hazards, and familiarization of the area by the local fire department responding to emergencies. Tours by the Alameda County Fire Department should be done on an annual basis, if not more frequently. If events are to take place during dangerous conditions, it may be appropriate to pre-position an apparatus at the field.

Detection

The purpose of detection is to quickly mobilize emergency response and evacuation. All Temple staff should be trained on how to detect and emphasize the importance to notify the appropriate authority (to call first 911) when an emergency occurs. While detection is normally quite fast in the wildland urban interface, increased emergency responder patrol during hot, dry times, could speed up detection.

Notification

This plan will assist the notification of wildfires to the Alameda County Fire Department. There is interest by the occupants of the Temple project site to have radios for use during times of emergency. This effort would be coordinated by the Temple. All facilities should have a set of radios to coordinate both evacuation and to support emergency response.

Evacuation

The highest priority is to provide safe evacuation routes in case of fire. In addition, emergency vehicles (including firefighting equipment) need to have safe routes in order to access the scene of the fire. Temple staff should coordinate with adjacent landowners, share notification systems, and practice their plan together, annually. In all cases, evacuation should be done under guidance of the ACPD and its designee. Evacuation should be initiated earlier than required, and considered whenever a wildfire is reported in the broader area.

V. IMPLEMENTATION MECHANISMS

A. COMPLIANCE WITH THE CONDITIONS OF APPROVAL

1. DECLARATIONS OF COVENANTS, CODES AND RESTRICTIONS (CC&R's)

The following language is to be included in the covenants, codes and restrictions (CC&R's) of the Fa Yun Chan Temple project.

Responsibility for Maintenance of Vegetation and Improvements

"The landowner shall be responsible for inspecting and maintaining the entire property in compliance with the vegetation management program approved by the Alameda County Fire Department with enforcement authority provided to the Alameda County Fire Department."

"No owner or resident shall permit any condition to exist, which creates a fire hazard or is in violation of local fire regulations." This may include trash piles or weeds."

"There shall be no outdoor storage of firewood, kindling, or compost material within 30-feet of any structure during the declared fire season, unless the material is stored in a bin or enclosure with a solid non-combustible exterior."

"The Property Owner shall be responsible for the maintenance of all improvements and vegetation management zones (Non-combustible Zone, Defensible Space Zone, Roadside Management Zone, Oak Woodland Fuel Management Zone or Riparian Woodland Zone).

"The property owner shall maintain all landscaping in accordance with requirements of this Wildland Fire Protection Plan. The owner shall also maintain the landscaping improvements."

B. DELEGATION OF RESPONSIBILITIES

Responsibility for implementation of all recommendations included in this WFPP resides with the Fa Yun Chan Temple.

1. CONSTRUCTION RESPONSIBILITIES

The Fa Fun Chan Temple will be responsible for the initial design and construction of all improvements of the project, including roads, driveways, emergency vehicle access roads, homes, landscape improvements, utilities, and the initial vegetation management treatments on both parcels.

2. VEGETATION MANAGEMENT RESPONSIBILITIES

Management of Development Area

Fa Yun Chan Temple is responsible for maintenance of the Fuel Management Zones, landscaping, and other management, monitoring, and maintenance functions.

Fuel Management Zone and Requirements

The specific locations of the Fuel Management Zones as depicted in Exhibit A of this plan will be established by the Fa Fun Chan Temple in consultation with the Alameda County Fire Department and may differ slightly from those described herein. The specific locations and management techniques of the fuel management zones may be adjusted and/or modified over time, in consultation with Alameda County Fire Department, as necessary to protect public safety and the conservation values of the private property.

3. ACCESS

Fa Yun Chan Temple is responsible for improving existing access roads and constructing new fire trails to integrate emergency response access with existing access on adjacent properties.

4. EVACUATION

Fa Yun Chan Temple is responsible for monitoring fire conditions (Red Flag warnings, etc.) and ensuring efficient evacuation for site residents and guests, especially during large events. Necessary measures include keeping shuttle buses on site during large in-person events. In general, the Temple should develop contingency plans for when events are held during conditions of high fire danger.

5. SIGNAGE

Fa Yun Chan Temple is responsible for installing high-contrast address signage consistent with California Fire Code, which requires four-inch stoke, with reflective or lighted. Each building will also need signage of names or numbers of buildings; these names or numbers will be placed on a pre-attack plan.

6. EMERGENCY RESPONSE ASSISTANCE AND COORDINATION

Staff should be trained regarding wildfire detection, reporting, extinguishing, and evacuation. Participation of at least one staff member in a local Community Emergency Response Team is advisable.

Fa Yun Chan Temple is also responsible for ensuring that fire extinguishers are present on site, that water hose be connected during events, and that staff be familiar with the location of the

water hose valve. Radios should also be present during all large-scale events to assist emergency response and evacuation guidance, and annually updated contact sheets should be present on site. The PA system should also be used to assist evacuation guidance and emergency response.

C. PHASING OF MAINTENANCE RESPONSIBILITY AND VEGETATION MANAGEMENT

1. PRE-CONSTRUCTION PHASE

- Hydrants will be in place before framing begins.
- Initial vegetation management actions will be completed before demolition or construction begins (if framing takes place between June 15 and Nov. 1). These actions include tree removal, tree pruning, and grass cutting for all fuel management zones, including evacuation support treatments and roadway treatments to ensure emergency access.
- A construction fire-prevention plan must be submitted to the Alameda County Fire Department Fire Marshal before building permits are issued. This plan will include precautions to carry out during high fire danger, a list of tools to have on hand, a description of available communications, specifications for the supply of water to have on hand, and descriptions of other actions that will reduce the risk of ignition and immediate control of an incipient fire.

2. MAINTENANCE PHASE

- All required clearing and grass cutting will be completed before June 15th of each year. Mowing must begin as soon as 30% of the grass has cured.
- Grass cuttings and clippings will be removed the day they are cut. No clippings are permitted to remain in piles or scattered, unless so approved by the Alameda County Fire Department.
- All brush piles and tree clippings are to be removed within one week of cutting. No brush or clippings are permitted to remain in piles, unless so approved by the ACFD.
- Annual vegetation management measures include:
    - Removal of all combustible vegetation along roadways, driveways, access roads, and trails according to stated standards
    - Maintenance of the emergency-access easement
    - Maintenance of the defensible space around structures according to stated standards for the various fuel management zones.
    - Assessment of conditions in the oak woodlands, and riparian woodland habitat to determine whether any action is required. The lower branches of oak woodlands are expected to need pruning every 7 – 10 years; a rotation of pruning may be scheduled so that approximately 1/7th of the area is treated yearly.

D. MECHANISMS FOR COMPLIANCE

Starting with the first year in which a building permit is obtained, the Fa Fun Chan Temple will need to obtain a certification by June 15 that the minimum standards have been achieved and maintained. On an annual basis, the Fa Fun Chan Temple will request a qualified fire management professional inspect and certify on an annual basis that the area encompassed by this plan has been maintained as detailed in the Vegetation Management Plan. This professional will submit a certificate of compliance by June 15. Compliance with vegetation management requirements will need to be done yearly in advance of inspection.

E. FREQUENCY OF FUTURE MAINTENANCE

The frequency of vegetation management is linked to the vegetation type:

1. GRASS

Grass will need to be mowed annually when 30% of the grass cover has cured (any time from April 15 - June 15). Should rains occur late in the season and produce more grass growth, the grass may need to be treated again.

2. SHRUBS AND SEEDLINGS

The expected frequency of treatment of shrubs and removal of seedlings below the forest canopy is estimated as every three years to five years. Shrubs may need to be pruned of dead wood, shortened, shrub groupings minimized in size, or new shrubs/ tree seedlings removed under tree canopies. Shrub removal or pruning may be done any time of year. Application of an herbicide to prevent re-sprouting may be more effective in the spring, but will follow the PCA recommendation.

3. TREES

Initial pruning of lower small branches will be a substantial effort. Because trees typically grow from the top and ends of branches, subsequent pruning needs to occur only every five years to ten years, depending on the rate of growth, and significant events which may cause dead wood to develop or breakage to occur. Pruning of oaks, other trees and tree-like shrubs can be done at any time of the year, depending on recommendations from a professional arborist.

4. FOREST LITTER LAYER

Removal of a litter layer deeper than the standards is expected to be necessary only once every 10 years for the oak woodland.

F. PROCESS FOR PLAN REVISION

While this plan presents recommendations that cover future actions, the Alameda County Fire Department will have authority to review periodically the condition of vegetative fuel, in order to provide input and direction. Potential issues that should be addressed during this review include:

- Changed fuel hazard conditions including: height of tree branches, size, density or species of vegetation, or fuel load and erosion control or slope stability conditions.
- Changes in land use of adjacent properties.

An initial three-year interval of review is recommended, with a five-year interval review thereafter. For example, if the expansion of shrub cover warrants additional action, this process provides for revisions of required maintenance options. Input of the Fire Department would be based on site visits, results and observations from the annual inspections conducted by the Department and experiences from recent wildfires or changes in ordinances or regulations.

If any changes are proposed, the Fa Yun Chan will submit this plan, along with suggested revisions to the Alameda County Fire Department for their input. The fire department input will be incorporated, and the plan revised. The revised plan would be implemented the following year.

VI. CEQA CONSIDERATIONS

Proposed Practices to Avoid or Reduce Significant Impacts

This section contains the proposed practices and implementing programs that would avoid or reduce significant wildfire impacts.

Thresholds of Significance and Impacts of the Project

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to wildfire if it would:

(a) Substantially impair an adopted emergency response plan or emergency evacuation plan;

Alameda County does not have an adopted emergency response plan or emergency evacuation plan. This project would advance preparation of such, and support effective evacuation, thereby having a beneficial impact.

(b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;

Due to the increased number of persons using the site, and increased vehicular traffic, the risk of ignition would be higher when the project is complete. There is a greater chance that a vehicle may malfunction, an accidental fire would ignite from a bbq, or a chainsaw may start a fire while doing needed vegetation maintenance. However, upon completion and assuming continued maintenance, the vegetation is to be less flammable, ignitable, nor conducive to fire spread. Thus, the overall possibility of damage and harm to the project occupants is less than it is currently.

(***c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment;***

Construction, along with initial vegetation treatments and maintenance, along with an improved access (including a fire trail), all have an increased risk of ignition. Construction is correlated with a high risk of ignition. Motorized equipment to both construct access and maintain vegetation in a fire-safe condition also can start fires, even when spark arrestors are in place. As above, condition with the project in place is less hazardous, due to improved access for emergency response and less flammable and voluminous vegetation. Thus, the fire risk is not exacerbated as a result of the project.

(d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes; or

Assuming vegetation treatments follow the fuel management standards and best practices, the impacts of the fuel treatments themselves would be less than significant because surface soils are not to be exposed, no living trees need to be removed, and no vegetation types conversions are required. No drainages are altered.

(e) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Through implementation of the Wildfire Protection Plan, the exposure of people and structures from wildfire's impacts is estimated to be less than at present. The many layers of protection that compile the wildfire protection plan (comprehensive fuel management, improved access and situational awareness and communications, along with improved on-site training of staff all reduce the exposure compared with existing conditions.

VII. APPENDICES

APPENDIX A

Alameda County Vegetation Removal Requirements

Alameda County Fire Department
Fire Prevention Division

REMOVAL REQUIREMENTS
Weeds, Rubbish, and Litter Abatement

The following are the minimum requirements for removal of weeds, rubbish and litter. All areas must be maintained throughout the year as follows:

RUBBISH, LITTER AND DEBRIS

Remove any rubbish, garbage, litter, junk, old building materials, or other items completely from the property and appropriately dispose of them.

WEEDS AND OVERGROWN VEGETATION

Prune any overgrown plants, shrubs or trees; remove cuttings and dead tree limbs. Keep all trees, shrubs, and other vegetation, or portions thereof adjacent to any building or structure, free from dead limbs, branches, and other combustible materials. Maintain roof of building or structure free of leaves, needles, twigs or other combustible litter.

Remove any portion of a tree that extends within ten feet (10') of the outlet of any chimney or stovepipe. Maintain around and adjacent to any such building or structure, a fire break made by removing all brush, flammable vegetation, or combustible growth to ground level which is located within 100 feet of a building, structure or to the property line, which ever is nearer. Grass and other vegetation located more than 30 feet and less than 18 inches in height above the ground may be maintained where slopes are greater than 15% in order to stabilize soil and prevent erosion.

Removal may be achieved by a variety of means, including but not limited to animal grazing, chemical application, discing, cutting, etc.

Any questions should be directed to the Alameda County Fire Department Fire Prevention office in your area.

City of Dublin	City of Newark	City of San Leandro	Unincorporated Alameda County	Union City
(925) 833-6606	(510) 578-4218	(510) 577-3317	(510) 670-5853	(510) 675-5470

Appendix B

Section 4903: Plans

4903.1 General

The fire code official is authorized to require the owner or owner's authorized agent to provide a fire protection plan. The fire protection plan shall be prepared to determine the acceptability of fire protection and life safety measures designed to mitigate wildfire hazards presented for the property under consideration.

The fire protection plan shall be prepared by a registered design professional, qualified landscape architect, qualified fire safety specialist or similar specialist acceptable to the fire code official and shall analyze the wildfire risk of the building, project, premises or region to recommend necessary changes.

The fire code official is authorized to require a preliminary fire protection plan prior to the submission of a final fire protection plan.

4903.2 Contents

The fire protection plan shall be based on a project-specific wildfire hazard assessment that includes considerations of location, topography, aspect, and climatic and fire history.

The plan shall identify conformance with all applicable state wildfire protection regulations, statutes and applicable local ordinances, whichever are more restrictive.

The plan shall address fire department access, egress, road and address signage, water supply in addition to fuel reduction in accordance with Public Resources Code (PRC) 4290; the defensible space requirements in accordance with PRC 4291 or Government Code 51182; and the applicable building codes and standards for wildfire safety. The plan shall identify mitigation measures to address the project's specific wildfire risk and shall include the information required in Section 4903.2.1.

4903.2.1 Project Information

The final fire protection plan shall be reviewed and approved prior to start of construction.

4903.2.1.1 Preliminary Fire Protection Plan

When a preliminary fire protection plan is submitted, it shall include, at a minimum, the following:

Total size of the project.

Information on the adjoining properties on all sides, including current land uses, and if known, existing structures and densities, planned construction, natural vegetation, environmental restoration plans, roads and parks.

A map with all project boundary lines, property lines, slope contour lines, proposed structure foundation footprints, and proposed roads and driveways. The map shall identify project fuel modification zones and method of identifying the fuel modification zone boundaries.

4903.2.1.2 Final Fire Protection Plan

The final fire protection plan shall include items listed in Section 4903.2.1.1 and the following:

- A map identifying all proposed plants in the fuel modification zones with a legend that includes a symbol for each proposed plant species. The plan shall include specific information on each species proposed, including but not limited to:
  1. The plant life-form;
  2. The scientific and common name; and
  3. The expected height and width for mature growth.
- Identification of irrigated and non-irrigated zones.
- Requirements for vegetation reduction around emergency access and evacuation routes.
- Identification of points of access for equipment and personnel to maintain vegetation in common areas.
- Legally binding statements regarding community responsibility for maintenance of fuel modification zones.
- Legally binding statements to be included in covenants, conditions and restrictions regarding property owner responsibilities for vegetation maintenance.

From: https://up.codes/viewer/california/ca-fire-code-2022/chapter/49/requirements-for-wildland-urban-interface-fire-areas#4906.2