

Appendix L

Fuel Management Plan

FUELS MANAGEMENT PLAN for THE FARM PROJECT

Former Stoneridge Country Club Site

APN 273-110-07, 08 & 18

City of Poway, CA, Fire Marshal, Scott Post



**Prepared For: SMA VENTURES, LLC
12919 CORTE JUANNA
POWAY, CA 92064**

**Prepared By: /s/ Michael J. Rogers
Michael J. Rogers
California Registered Professional Forester #787**

**Certified By: /s/ Michael J. Rogers
FIREWISE 2000, LLC
1320 Scenic Drive
Escondido, CA 92029
Tel: (760) 745-3947**

THE FARM

FUELS MANAGEMENT PLAN

TABLE OF CONTENTS

Executive Summary	2
1.0 Introduction	3
2.0 Project Location, Description and Environmental Setting	4
2.1 Project Location	4
2.2 Project Environmental Setting	4
2.2.1 Vicinity Map (Exhibit 1)	5
2.2.2 High Fire Hazard Open Space Map (Exhibit 2)	7
2.2.3 Project Site (Exhibit 3)	8
2.3 Project Description	9
3.0 Fire Fuel Assessment Summary	16
3.1 Fuel Management Zones (FMZ's)	16
3.1.1 High Hazard Open Space (Exhibit 4)	18
3.1.2 Destructive Winds (Exhibit 5)	19
3.1.3a Fire Ignition Resistant Zone (Graphic 1)	20
3.1.3b Canopy Free Zone Graphic (Graphic 2)	21
3.2 Privacy Fencing	22
3.3 Roads/Streets	23
3.4 Water Supply	23
3.5 Fire Station Location	23
3.5.1 Emergency Response Times (Exhibit 6)	24
4.0 Table of Required Actions	25
5.0 Conclusion	27
APPENDICES	
Appendix A Permissible Plant List	9 pages
Appendix B Prohibited Plant List	3 pages
Appendix C Invasive Plant List	3 pages
Appendix D BrandGuard Vents	3 pages
Appendix E BEHAVE PLUS Runs	13 pages

THE FARM

FUELS MANAGEMENT PLAN

EXECUTIVE SUMMARY

SMA VENTURES, LLC, proposes to build 160 Single Family One and Two Story Homes in three types of groupings interspersed with agricultural lands, parks and Community Areas on the 117.2 acre site of the former Stoneridge Country Club, which is entirely surrounded by existing homes. This is an infill project surrounded by older single family homes built in the 1970's and 1980's prior to the revision of the Fire Codes following the devastating wildfires experienced by San Diego County in 2003 and 2007. There is one location adjacent to Indian Canyon Lane on the Northeast end of this project where wildland fuels intersect existing homes that surround The Farm Development. Undeveloped Open Space Wildlands lie to the immediate North and East of these existing homes. The biggest threat to this project are the older homes (and the inappropriate landscaping in the yards of these homes; juniper and other highly flammable species) that were built prior to the Fire Code Revisions generated by the devastating 2003 Cedar and Paradise Fires and the 2007 Witch Creek Fires that burned through San Diego County destroying thousands of homes and resulted in a significant number of civilian deaths. These existing homes and the inappropriate highly flammable landscaping in the yards of these older homes surrounding this proposed project are highly vulnerable to windblown ember storms generated by wildfires burning to the east of this planned development under Northeast Santa Ana wind conditions.

The 160 proposed homes and the surrounding existing single family homes will continually be subjected to both Northeast Santa Ana winds and prevailing afternoon winds out of the Southwest. This threat can be mitigated by building fire resistant structures, equipped with ember trapping roof, gable end and under eave vents and firewise landscaping that is continually maintained by individual homeowners and maintenance of the planned open space areas by the required THE FARM Community Association (TFCA).

This Fuel Management Plan will significantly reduce the probability of flame impingement from wildfires burning on the adjacent developed and undeveloped properties via required Fuel Management Zones (FMZ's) within the Project. Proper venting and construction utilizing fire resistant materials will significantly reduce the probability of structure loss due to the onslaught of airborne embers from both wildland and ornamental fuels and adjacent existing homes when they are ignited. This Fuels Management Plan (FMP) has been prepared in full conformance with Chapter 7A of the California Building Code for California's Wildland-Urban Interface, Chapter 49 of California's Fire Code and The City of Poway requirements.

1.0-INTRODUCTION

This project incorporates the following Assessor Parcel Numbers: APN's 273-110-07-00, 08-00 and 18-00. THE FARM Project, a planned community with two ways out, will be built within a Very High Fire Hazard Severity Zone and, therefore requires a Fuel Management Plan (FMP) that will prescribe conditions that must be implemented and maintained in perpetuity between the 160 homes and the existing immediately adjacent perimeter homes. Although most of the ornamental and wildland fuels present on the site will be eliminated by THE FARM development footprint, there will still be significant exposure because of the large amount of wildland native vegetation growing in the large expanse of open space that lies to the immediate North and East of THE FARM Project (note that not all of the existing golf course trees and shrubs will be eliminated by the development footprint and required Fuel Management Zones; much of this remaining vegetation is seriously stressed and it will be the Developers call as to whether this remaining vegetation will be retained or eliminated).

Because this is an infill project, the most immediate threat to the proposed FARM Project will be from the older homes built in the 1970's and 80's prior to major revisions in the Fire Code that surround and border THE FARM Project. The current non compliance of existing homes with current Fire Codes will be the responsibility of the home owners. The enforcement of required Fuel Management Zones will be the responsibility of the City of Poway Director of Development Services. In the event of a wildfire in the open space to the east of THE FARM Project the owners of these older homes have compromised their homes survivability due to the planting over time of highly flammable vegetation around and next to their homes, which will be receptive hosts for Santa Ana windblown embers and a threat to new homes to be built in the Farm Project when these older homes burn under extreme wind driven fire conditions.

There are two wind patterns that are responsible for loss of life and for large numbers of homes being significantly damaged or completely destroyed during wind driven wildfires (see Exhibit No. 5 on page 19). These are 1.) the very dry northeast/east Santa Ana winds that frequently impact San Diego County in the fall of each year prior to the winter rainy season when fuels are dormant and dried out after the long, hot, drought prone summers [although these winds can occur during any month of the year resulting in the loss of lives and homes] and 2.) The above average southwest winds that frequently occur with the breakdown of a significant Santa Ana Wind event. When the northeast Santa Ana winds subside this event is quickly followed by an onshore rush of hot, dry air that has been piling up over the ocean and will rush back in to fill the vacuum left by the deteriorating Santa Ana Winds (Cedar Fire, 2003). Lives and homes are lost under both scenarios. Experience and Research has repeatedly shown that this tragedy can be significantly reduced by maintaining 100' FMZ's, as measured horizontally from each structure and by the construction of homes using fire resistant building materials, tempered glass dual pane windows and ember trapping roof, eave and gable end vents (Chapter 7A of the State Building Code).

The City of Poway Fire Marshal has requested a Fire Behavior Assessment and the submission of a Fuel Management Plan (FMP) based on that assessment to address the potential threat to the older surrounding homes and the 160 homes that will be built as part of this proposed project.

2.0 PROJECT LOCATION, ENVIRONMENTAL SETTING AND DESCRIPTION

2.1 Project Location

THE FARM Project is located in an area of gently rolling hills on a south facing slope within the jurisdiction of the City of Poway, CA (see Vicinity Map). With the exception of the Stoneridge Country Club footprint this area is mostly built out, however, there is an abundance of immediately adjacent very high fire hazard wildland open space area to the north and east of this Project Site and the older existing homes that surround the Project Site. The Project Area covered by this Plan is bounded by Val Verde Road on the west, Saint Andrews Drive on the west and north, Boca Raton Lane, Tam O' Shanter Drive and Cloudcroft Drive on the east and Espola Road on the south. For a visual depiction of this Project Area please refer to Exhibits 1, 2 and 3 on pages 5, 7 and 8.

2.2 Project Environmental Setting

THE FARM Project is located in a moderately hilly coastal zone approximately thirteen and a half (13.6) miles inland from the ocean and approximately 550 feet above sea level at the highest point. Specifically the property is located south of Highland Valley Road, west of Old Coach Road, north of Espola Road and east of Pomerado Road, which is just east of Interstate 15 and which runs parallel to I-15. Primary access from the west is off the I-15 Interstate and east on Rancho Bernardo Road, which becomes Espola Road to Val Verde Road, north on Val Verde to Saint Andrews Drive. Primary access from the southeast is from the City of Poway heading east and north on Poway Road to Espola Road, north and west on Espola Road to Cloudcroft Drive and north on Cloudcroft Drive.

THE FARM Vicinity Map Exhibit is on the following page.

2.2.1 Vicinity Map Exhibit 1

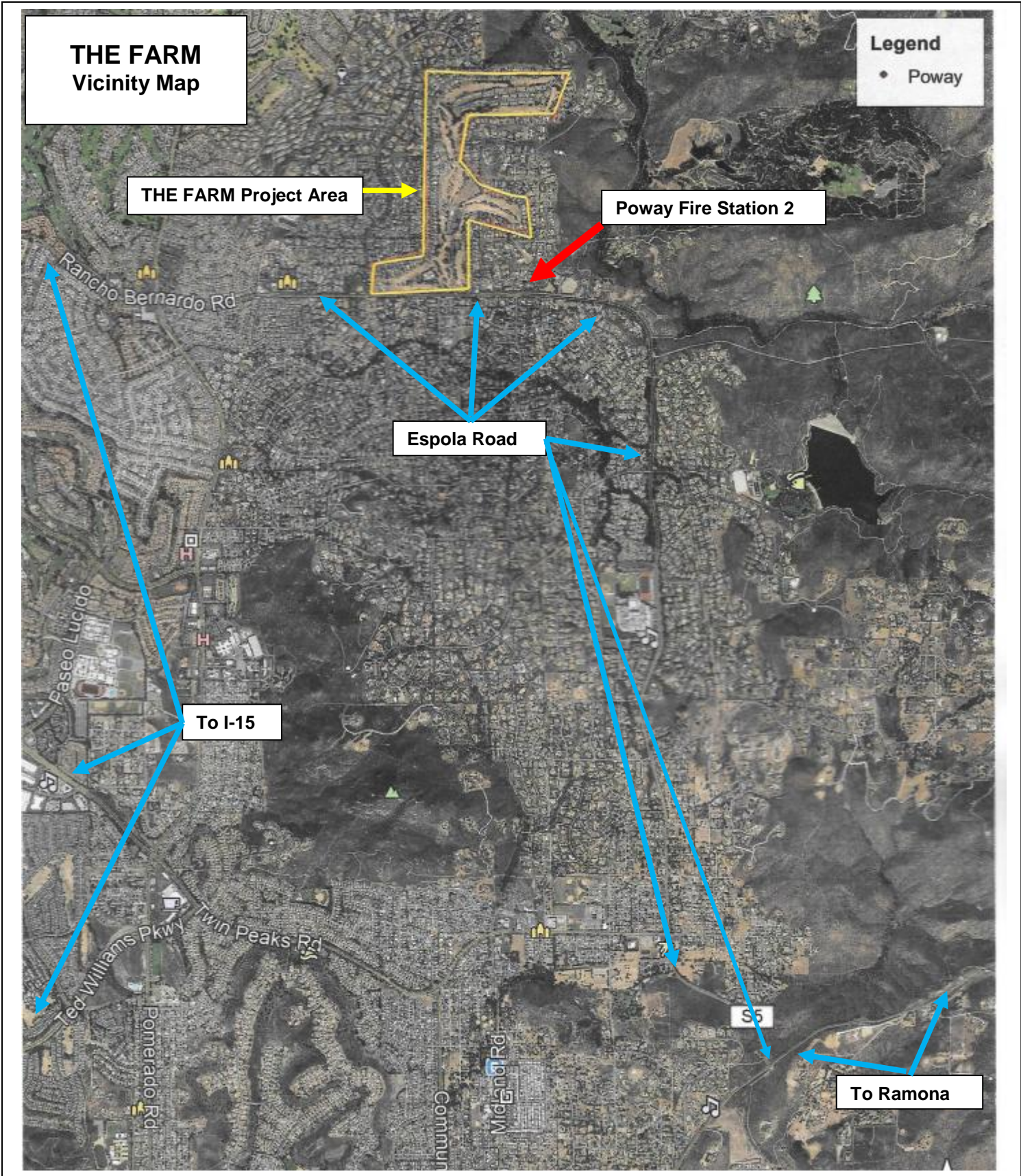


Exhibit 1: THE FARM Vicinity Map

During a site visit on December 03, 2018 an inventory was made of the existing vegetation. No endangered plants, nesting birds or endangered animals were observed.

The current condition of the property can best be described as an unmaintained former golf course consisting of highly stressed scattered pines (*Pinus halipensis*) and eucalyptus sps. intermingled with a remnant population of a coastal sage scrub plant community that has invaded the former Golf Course dominated by the presence of pockets of highly flammable, highly invasive stands of black mustard (*Brassica nigra*) interspersed with non-continuous random clumps of Laurel Sumac (*Malosma laurina*), California Buckwheat (*Eriogonum fasciculatum*), Black Sage (*Salvia mellifera*), Coastal Sagebrush (*Artemisia californica*), Broom Baccharis (*Baccharis sarothroides*), highly invasive pepper trees (*Schinus molle*), and some Chamise (*Adenostoma fasciculatum*).

Ironically the Buckwheat, Black Sage, Coastal Sagebrush and Chamise are all desirable California Gnat Catcher habitat species, but are also the most flammable species of all of the species that make up the native coastal sage scrub plant community; they burn explosively and pose the greatest danger to adjacent homes. These four plant species must not be permitted within 100 feet of homes (see list of prohibited plants within 100 feet of homes in Appendix B).

2.2.2 High Fire Hazard Open Space Map; Exhibit 2

The High Fire Hazard Open Space Map (Courtesy of Goggle Earth) is on the following page. This Wildland/Urban Interface directly abuts the older homes that surround and border THE FARM Project. Past and current homeowners have compromised their safety by landscaping their properties with inappropriate highly flammable planting choices.

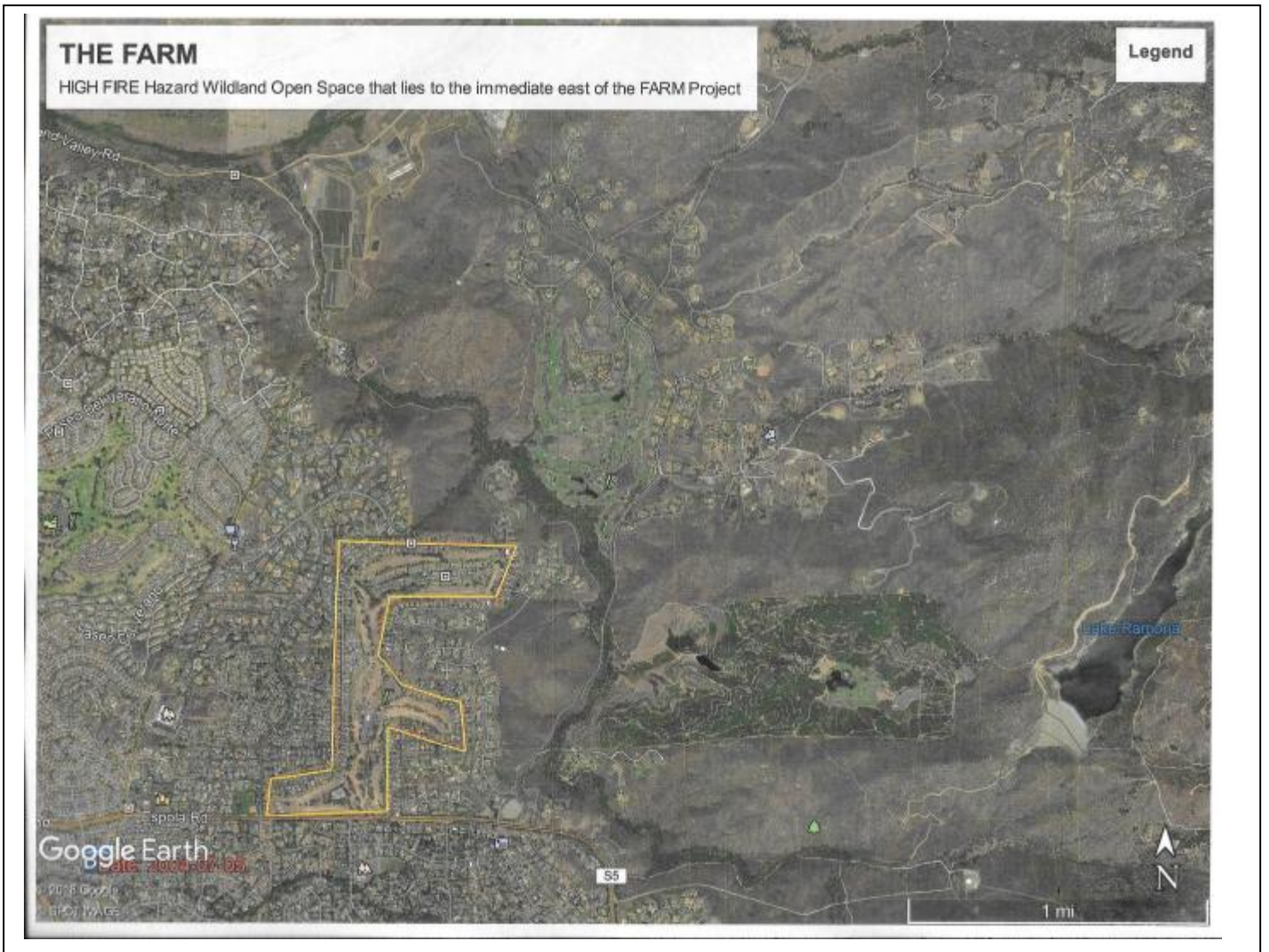


Exhibit 2: Note the large expanse of wildland open space to the immediate North and East of THE FARM Project.

2.2.3 Project Site

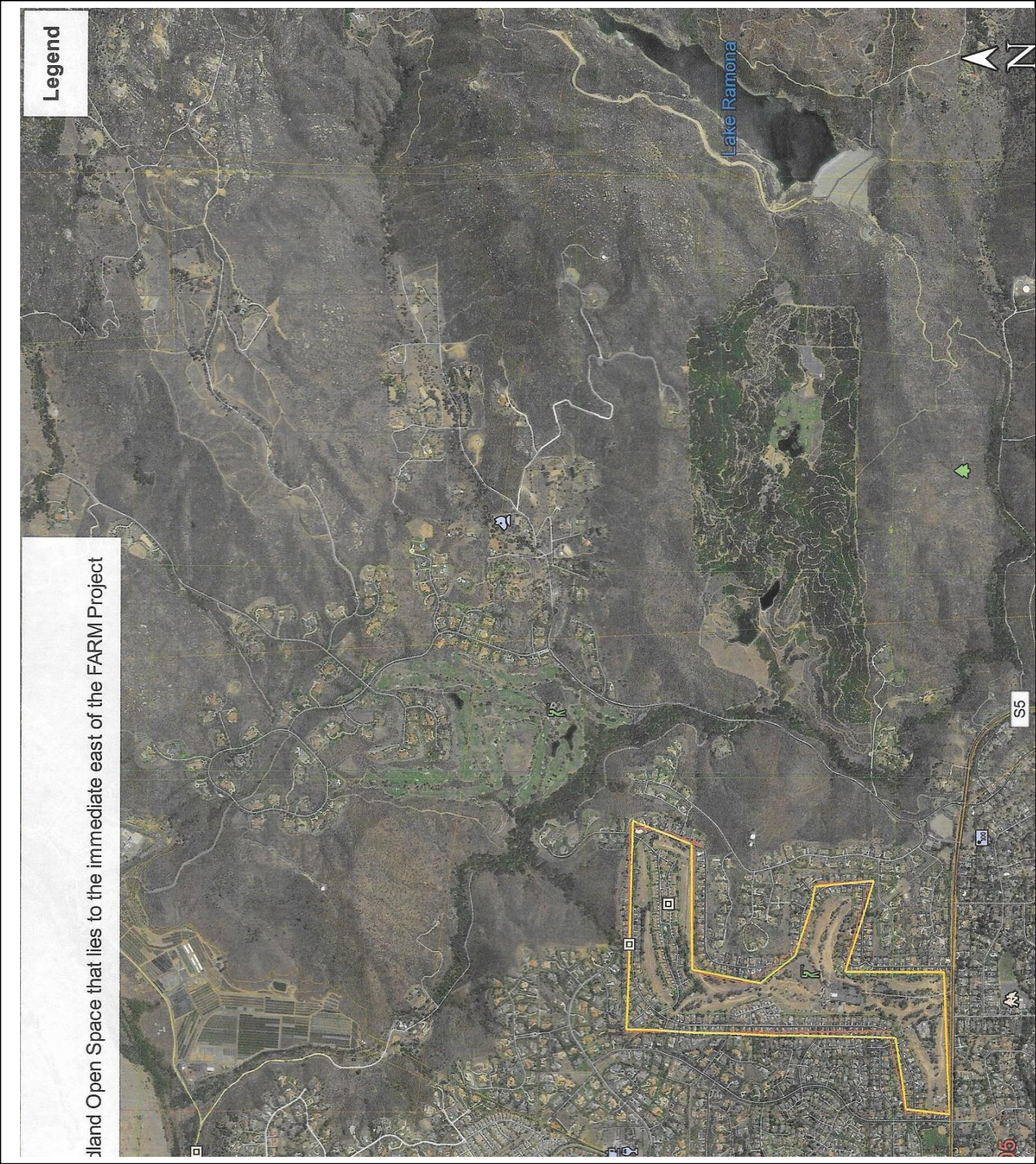


Exhibit 3: THE FARM Projects relationship to the existing built out residential community and the Wildland/Urban Interface.

2.3 Project Description

For the most part the required FMZ's are currently vegetated with a very fragmented cover of coastal sage scrub species, all of which are prohibited within 100' of structures (see the Prohibited Plant List in Appendix B) and non –native grasses and several highly invasive and highly flammable non-native ornamental shrubs and trees. The following highly invasive, non-native species were observed at various locations within the required FMZ including non-native, highly flammable intrusions of pepper trees (*Schinus molle*), Aleppo pine (*Pinus halepensis*), eucalyptus (*Eucalyptus globulus*) palms (*Washingtonia robusta*) and large areas occupied by highly flammable mustard (*Brassica nigra*). The following less flammable native species were also observed and can be retained in clumps if topped and shaped and properly spaced (20' between shrubs); San Diego sunflower (*Viguiera laciniata*), Broom Baccharis (*Baccharis sarothroides*), bush sunflower (*Encelia californica*) and laurel sumac (*Malosma laurina*). Several species of cactus were also observed within the project site including prickly pear (*Opuntia littoralis*). All of the above low flammability native plant species are permissible within the FMZ, provided they are well spaced, and with the exception of the cactus and laurel sumac, weed whipped down to a 4 inch stubble height by June 1 of each year. The laurel sumac can be shaped into a tree form or retained as a pruned shrub.



Photo 1: From the present end of Cloudcroft Court looking east across the project site. THE FARM Project site is currently vegetated with a highly flammable cover of black mustard (*Brassica nigra*), non-native grasses, ornamentals and California buckwheat (*Eriogonum fasciculatum*), a preferred species from a wildlife standpoint, but prohibited within 100' of structures due to its explosive flammability. Some of the existing perimeter homes along the north and east of THE FARM Project Boundaries can be seen in the background (Photo by Mike Rogers).



Photo 2: This photo is also taken from the end of Cloudcroft Court looking east, across the lower half of THE FARM Project at several of the older existing homes that border THE FARM Project and the existing inappropriate vegetation that will be removed. The vegetation seen in this photo is typical of most of the site. This vegetation will be eliminated by the construction footprint. If any of the highly flammable native plants end up outside of the building footprint and in a FMZ they will need to be weed whacked down to a 4" stubble height and the roots retained to hold the soil in place. The non-native highly invasive mustard must be eliminated from the FMZ's (Photo by Mike Rogers).

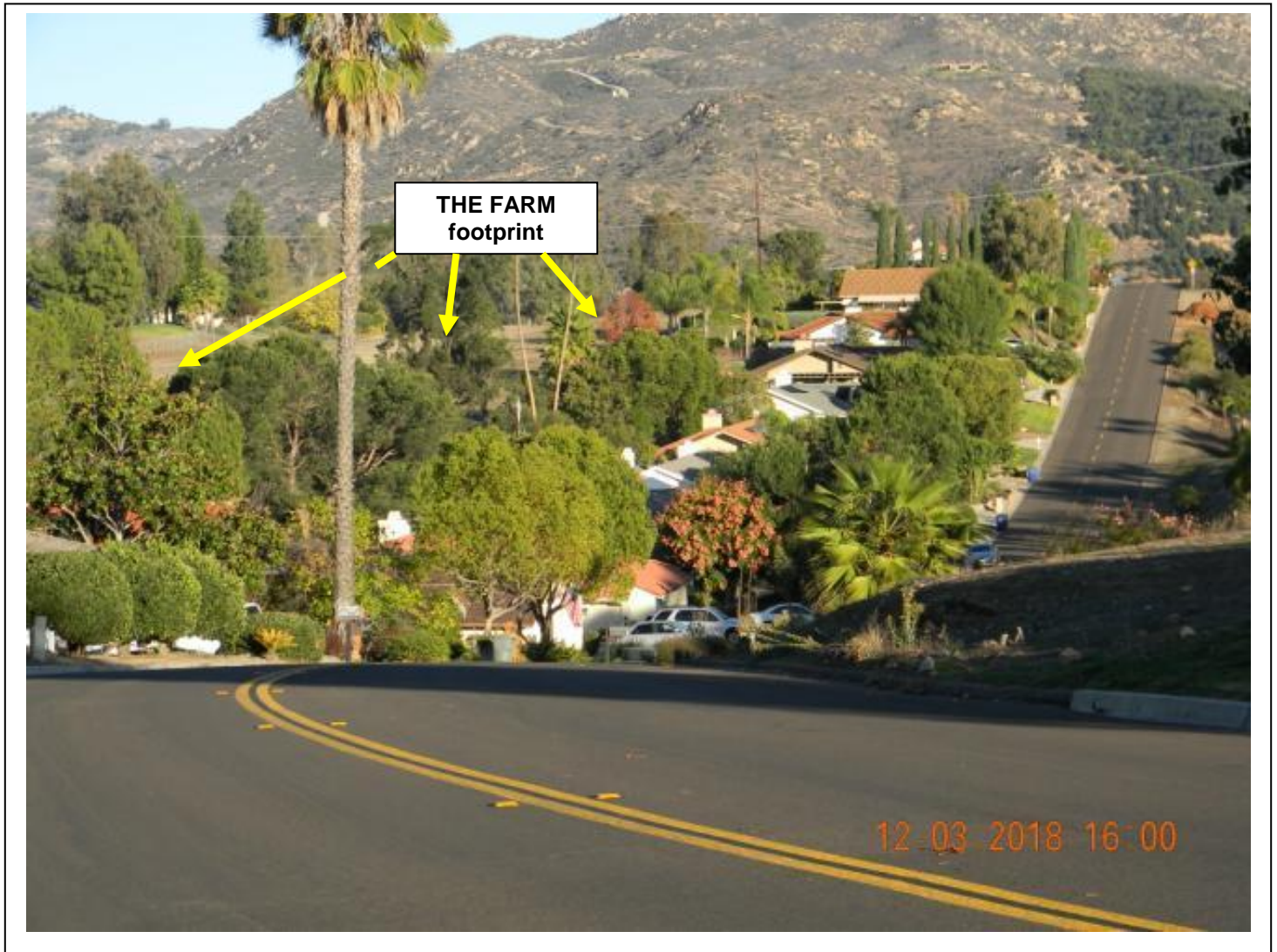


Photo 3: A view looking east from Tam O Shanter Drive heading towards Boca Raton Lane. At this photo point location Tam O Shanter Drive is south of the actual Project Footprint. This photo point provides an excellent view of the wildland vegetation that borders the eastern and northern perimeters of the older homes immediately adjacent to and that surround THE FARM Project. THE FARM footprint can be seen behind the homes that border the north side of Tam O Shanter Drive. Note the inappropriate vegetation in the yards of the existing older homes that border THE FARM Project consisting of palm trees, pines, Arizona cypress, etc. within 100 feet of the existing homes. When the wildland expanse to the east burns under a Santa Ana wind this wildland area will be a source of ground hugging smoke and windblown embers that will ignite some of the existing vegetation in the yards of the existing homes, which will lead to the loss of the homes and will be a viable threat to the homes built in THE FARM (Photo by Mike Rogers).

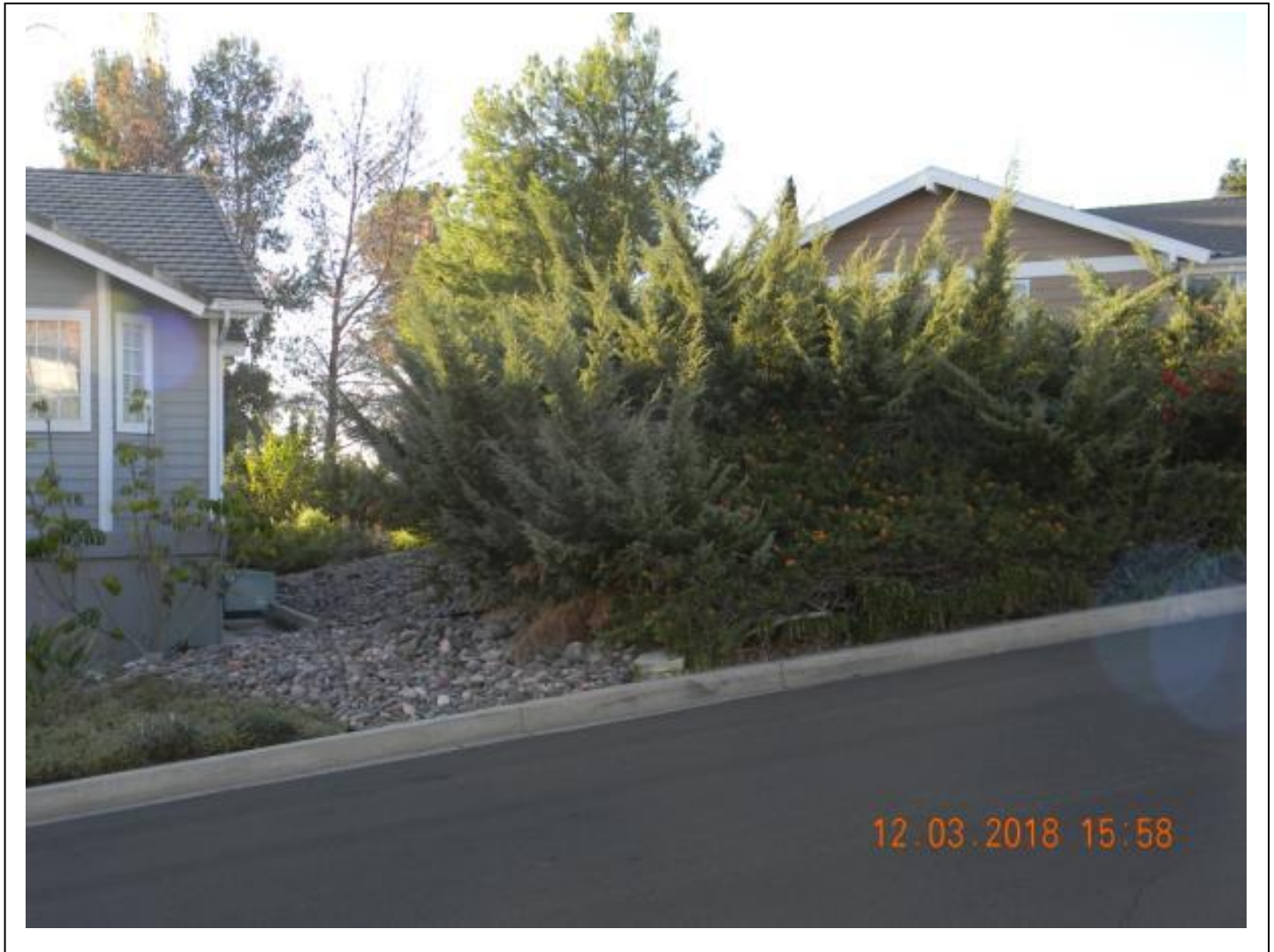


Photo 4: This photo is taken of highly hazardous landscaping within a few feet of the structure. This photo taken on Tam O Shanter Drive is one of many examples of inappropriate landscaping that puts all existing and planned homes at risk. The City of Poway Director of Development Services is responsible for Code Compliance. Also there are FEMA Grant funds available to bring older homes into compliance with the updated Fire Protection Codes. The juniper shown in the foreground burns explosively and will create enough radiant heat to blow in the windows and ignite the structure. Note also the highly flammable pine trees within 100 feet of the structures (Photo by Mike Rogers).



Photo 5: This photo was taken on the east end of THE FARM Project, heading north on Boca Raton Lane towards the intersection with Del Paso Drive and Saint Andrews Drive. The one deep line of existing homes along the east side of Boca Raton Lane have been seriously compromised by the resident homeowners making the survival of their homes very doubtful in a wildfire with yards full of inappropriate vegetation; pines, Arizona cypress next to their homes and eucalyptus for starters. This east end of THE FARM Project is the most vulnerable portion of THE FARM Project. The homes planned along the west side of Boca Raton Lane will face the greatest vulnerability from burning landscape and structures on the east side of Boca Raton Lane. Indian Canyon Lane was constructed in a drainage depression and will serve as a funnel for ground hugging winds with accelerated wind speeds due to the Venturi Effect (winds forced through a restriction accelerate). A fire occurring during a ground hugging wind event will blow radiant heat and embers into the yards of the homes along the east side of Boca Raton Lane resulting in the loss of existing structures. The ignition of the vegetation and structures on the east side of Boca Raton Lane will pose a huge threat to all older and new homes to be built west of Boca Raton Lane. Correction of this situation is outside the scope of THE FARM Project. However, it is strongly recommended that this become a priority for the City of Poway to bring these homes and landscaping into compliance (Photo by Mike Rogers).



Photo 6: Note the recently planted, highly flammable Arizona cypress right next to the older existing structure (Photo by Mike Rogers).



Photo 7: Another view of a home on the east side of Saint Andrews Drive with a highly flammable juniper hedge. This juniper, when it burns will produce enough prolonged radiant heat to ignite the structure and compromises the safety of escaping evacuees and arriving first responders using Saint Andrews Drive (Photo by Mike Rogers).

One of the problems of removing the existing inappropriate fuels from within the designated FMZ is the opening of the site through the disturbance that occurs, which provides an opportunity for highly invasive species such as tumbleweed, also called Russian thistle (*Salsola tragus*), artichoke thistle (*Cynara cardunculus*) pampas grass (*Cortaderia selloana*) and black mustard (*Brassica nigra*) and many weedy grasses with little to no wildlife value to take over the site. Unfortunately, Mother Nature abhors a vacuum and will readily fill it with whatever airborne seeds and seeds capsulated within bird droppings are available. Highly invasive and highly flammable black mustard and various varieties of thistles are already present on site or nearby. Mustard, in particular, is very aggressive, an extreme fire hazard after curing, and is stubbornly difficult to eradicate. It is a prolific seed disperser with lots of the current year's seed already in the ground, where it is established, for germination the next growing season following winter rains. The most effective way to eliminate this plant is to cut the flowers when they start appearing, bag them and remove the flowers and cuttings off site for proper disposal. As new plants begin growing, spot spray the green leafy portion of the plants with round up.

The goal of this FMP is to establish low maintenance FMZ's within 100 feet, and in several cases less than 100 feet, of planned homes with low flammability, low maintenance native shrubs and grasses, with high values for wildlife, for the protection of life and property under the worst case wildland fire conditions. In most cases the new homes in THE FARM Project will not have enough room to achieve 100' of Zone A and Zone B Fuel Management Zones as the back yards of THE FARM Project will abut the backyards of the existing homes around the perimeter of THE FARM Project, which is an infill. Generally there will be 30' of distance from the back of the planned homes and the Lot line. This is also the case with the existing homes, which initially adjoined the Stoneridge Golf Course property. The good news is that there will be at least 60' of irrigated Zone A landscaping between the new and older homes. Because Chapter 7A of the State Building Code requires dual pane, tempered glass windows, ember trapping State Fire Marshal Approved vent systems manufactured by O Hagan, Brandguard or Vulcan and Class A roof assemblies that are mandated for all structures built in Wildland-Urban Interface Areas there will be no additional requirements in addition to the continuous 60' or more of irrigated and continuously maintained Zone A landscaping. These Chapter 7A Standards apply to all homes within THE FARM Project. In addition, Chapter 49 of the California Fire Code applies to all vegetated areas, including front, side and back yards within THE FARM Project, including common areas that will be maintained by the required Community Association (CA).

There are a number of planned storm water retention basins located throughout the Project. Each retention basin will be equipped with an underground drainage outlet. Plans call for the sloped embankments to be vegetated with shrubs (willow or other fire resistant riparian species) and the bottoms seeded with annual and perennial grasses to filter the storm water flows and control erosion. As vegetation becomes established, all invasive plants must be eradicated and the annual and perennial grasses on the basin floor weed whipped down to a 4 inch stubble height by June 1 of each year and as needed to fully comply with Zone B standards.

All yards of every one of the 160 homes planned in this project fall into Zone A and shall meet Zone A standards. Zone A extends out 30 feet from each side of each of the 160 planned homes. Portions of some back yards will comprise Zone B from 30 feet out to 100 feet or to the property line. Zone A will consist of irrigated, low growing well maintained fire resistant vegetation and well spaced shrubs (see

Acceptable Plant List in Appendix A). Zone B will consist of un-irrigated, well spaced fire resistant trees and shrubs and low growing ground covers that are weed whipped down to a 4 inch stubble height or mowed by June 1 of each year. Zones A and B will be maintained by each property owner. All vegetated areas within THE FARM Project that are outside of individual lot lines will be maintained by the required CA.

The water retention basins will be the responsibility of the developer pending the establishment of a THE FARM Community Association (TFCA). All Home Owners will be required to financially support the TFCA who will have the responsibility for maintaining the water retention basins and common areas beyond lot lines. The requirement for each lot owner to financially support the TFCA shall convey to all original and subsequent owners in perpetuity. The TFCA is directly accountable to the City of Poway Director of Development Services. Each future home owner is bound by the requirements set out in this Fuel Management Plan; no homeowner has the freedom to plant whatever tree and shrub species they desire as has occurred in the area of older homes that surround and border THE FARM Project.

3.0 Fire Fuel Assessment Summary

Behave Plus, Version 5.0.2, runs show that a 100 foot wide Fuel Modification Zone (FMZ) between structures and undisturbed native fuels, under the worst case San Diego County fire weather conditions will adequately mitigate the impact of flame impingement and radiant heat on planned and adjacent structures (see Appendix E). Should an ignition occur in the wildland open space under the most extreme conditions the greatest flame length (53.6 feet) is produced under Northeast Santa Ana winds. The greatest threat to THE FARM Project will be from airborne embers from wildland fires northeast and east of this project that travel from 1 to 2 miles and will ignite new spot fires if they find dry vegetation or other suitable hosts. For the most part a Santa Ana wind will be pushing wildfire into the planned homes on the east side of this project. One hundred foot wide FMZ's will prevent both flame impingement and loss of structures from radiant heat. The ignition of a structure by radiant heat produced by highly flammable native fuels requires sustained temperatures in excess of 600 degree Fahrenheit for more than 28 minutes. The residence time for a fire in the fuels in the immediate vicinity of the planned homes will be less than 15 minutes. However, airborne embers pose a threat to all homes, both the existing homes and planned homes.

3.1 Fuel Management Zones (FMZ's)

The FMZ starts at the exterior wall of each structure and is measured out horizontally to the lot boundary. The FMZ is divided into two Zones; Zone A runs from each edge of the structure out to a minimum of 30' and is best modeled as a gr1 (short grass) or a gs1 (grass and well spaced shrubs, the 9.8' flame length can be reduced by cutting the grass in this model to a 4" stubble height); Zone B runs the additional 70' for a total of 100', or to the property line. Zone B can best be modeled by a sh1 (a low load well spaced dry climate shrub over ground fuels that are weed whipped down to a 4" stubble height by June 1 of each year [See Appendix E for the BEHAVE runs]). Where the required FMZ cannot be accommodated within the project boundaries mitigation measures must be employed; however, in the case of THE FARM, this is an infill project and there is no point on the perimeter of THE FARM Project where the Project boundary directly intersects with native, highly flammable wildland fuels. Because of this situation there is no point where any of THE FARM single-family homes will be subjected to the 53.6'foot flame lengths from a wildfire burning in the surrounding Open Space native coastal sage and chaparral shrubs on the North, Northeast and East sides of this

Project. However, there are two additional scenarios to defend against; first, the wind driven ember storms that will extend a mile or more from the active fire front, and second, the radiant heat given off when one of the older surrounding structures catches fire. In the first scenario, the 60' of irrigated Zone A Fuel Management will provide the necessary fuel treatments to keep any ember ignited spot fires from becoming high intensity wildfires with flame lengths greater than 2 to 6 feet in length (see page 3 of the Santa Ana wind BehavePlus run in Appendix E that shows flame lengths). In addition the newly constructed homes must be fitted with ember trapping roof, gable end and under eave vents (see Appendix F) and dual pane tempered glass windows.

In the second scenario, should one of the older, immediately adjacent structures ignite this will provide a new source of large embers and radiant heat over an extended period of time (longer than 28 minutes). It has been found when examining homes that survived house to house ignitions that once a structure ignites, where there is 16' or more of separation between structures the likelihood of additional ignitions of adjacent homes drops significantly. In the case of THE FARM there will be at least 60'feet of separation between the surrounding older homes and the new homes and at least 16' between the planned homes that will be built as part of THE FARM project. Zone A is usually planted with irrigated ornamental landscaping consisting of irrigated lawn and well maintained low growing, fire resistant, flowering plants and shrubs (gr1 and gs1). An alternative landscaping (also identified as hardscape) can also be implemented consisting of low water requirement xerophic plants and shrubs, interspersed with large rocks, sand and gravel.

Zone B is usually non-irrigated and consists of fire resistant, low growing native and non-native plants. With a cover of native grasses interspersed with shrubs spaced 20' apart (an sh1 shrub fuel model), such as Broom Baccharis, San Diego Sunflower, bush sunflower, brittlebush, white sage, lemonade berry, laurel sumac, etc. that are shaped and topped each spring and the grasses and other less desirable shrubs reduced to a 4" stubble height, it is possible to reduce 53.6' flame lengths down to 6.2' flame lengths. The managed FMZ's will burn but when they do, the managed fuels in Zones A and B will not produce the large flame lengths that unmanaged wildland areas will.

The plants listed as undesirable (**prohibited**) in Appendix B should never be permitted within the 100 foot FMZ. Many of the native coastal sage shrubs are prolific seeders and will attempt to reestablish themselves within the FMZ. This can be a real problem if this occurs as these newly established native plants grow rapidly and burn explosively and will readily transmit fire to adjacent structures. Invasive plants must be continually eliminated from throughout the interior of the FMZ's (please refer to the list of invasive plants shown in Appendix C).

Trees can be planted within Zones A and B provided they are not on the prohibited plant list and the tree locations correspond to the graphic illustrations on pages 20 and 21.

THE FARM

HIGH FIRE Hazard Wildland Open Space that lies to the immediate east of the FARM Project

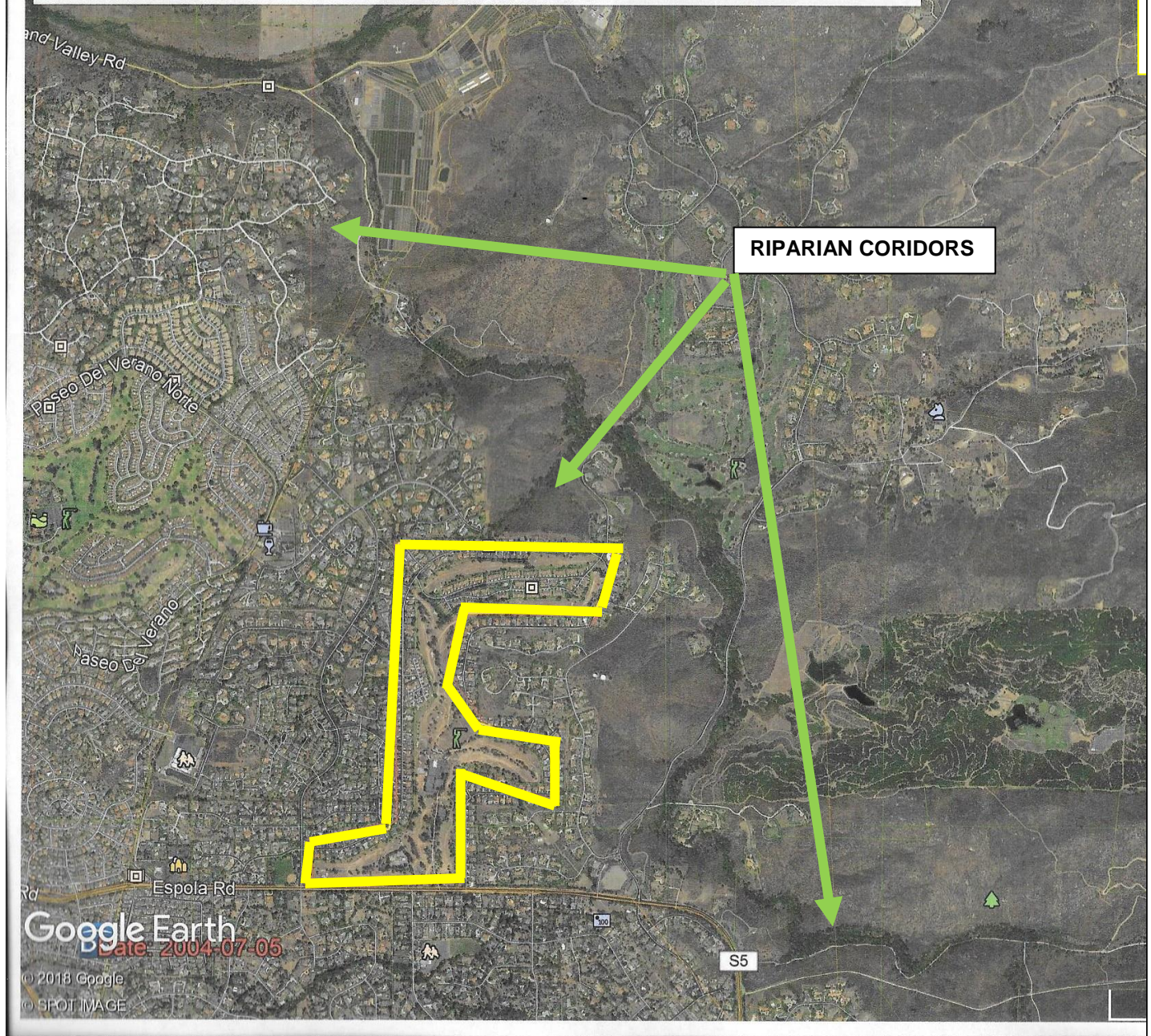


Exhibit 4: This Goggle Earth View shows the large expanse of wildland open space to the immediate North, Northeast and East of the FARM Project. Riparian areas played a significant role in the spread of the 2003 and 2007 San Diego County wildfires. The wind dried vegetation growing in these riparian corridors acted like wicks which aided the rapid spread of these Santa Ana wind driven wildfires into populated areas.

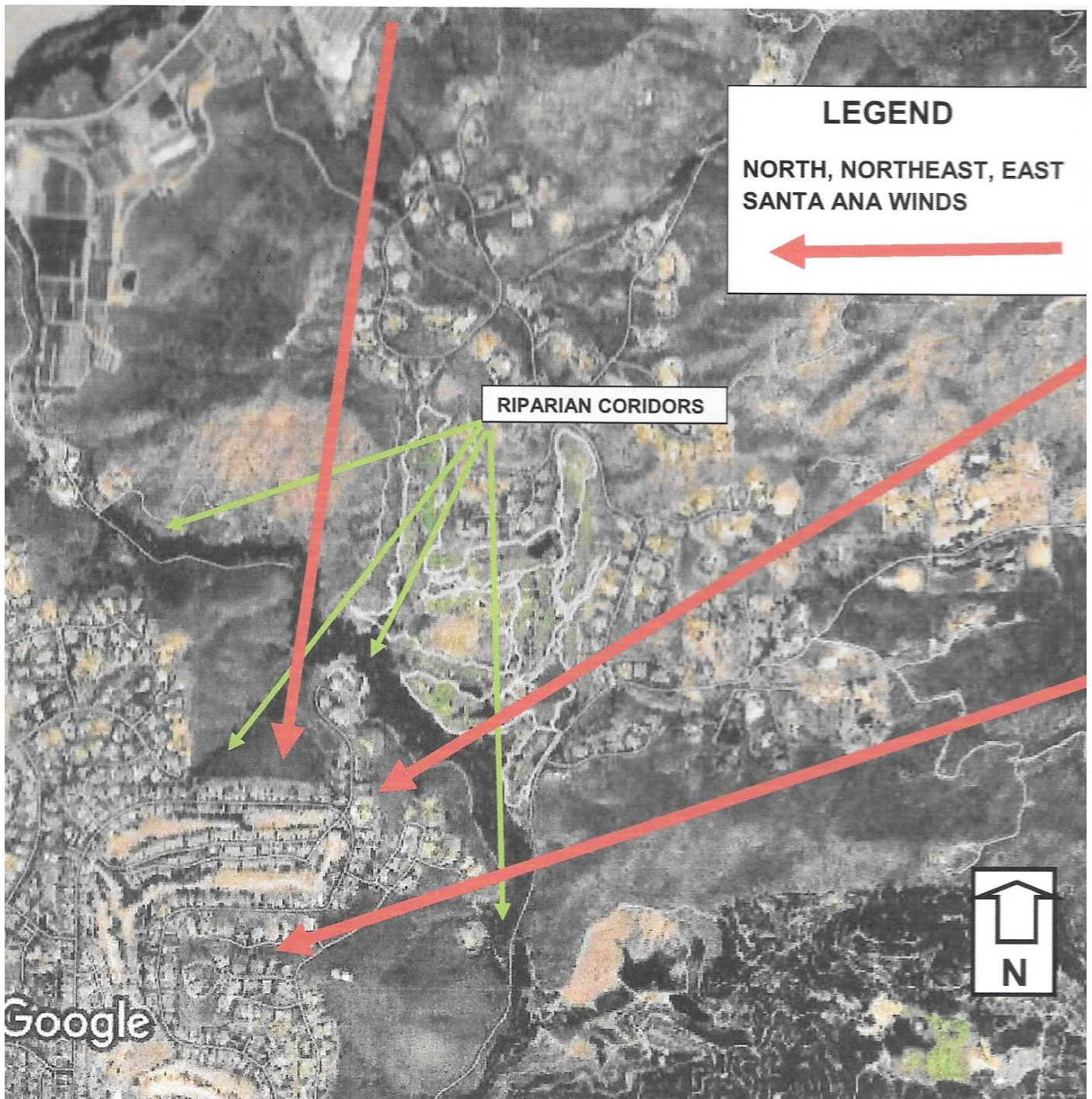


Exhibit 5: Direction of Santa Ana winds. Because of the built community to the west the prevailing Southwest wind pattern will not pose a significant threat to THE FARM Project.

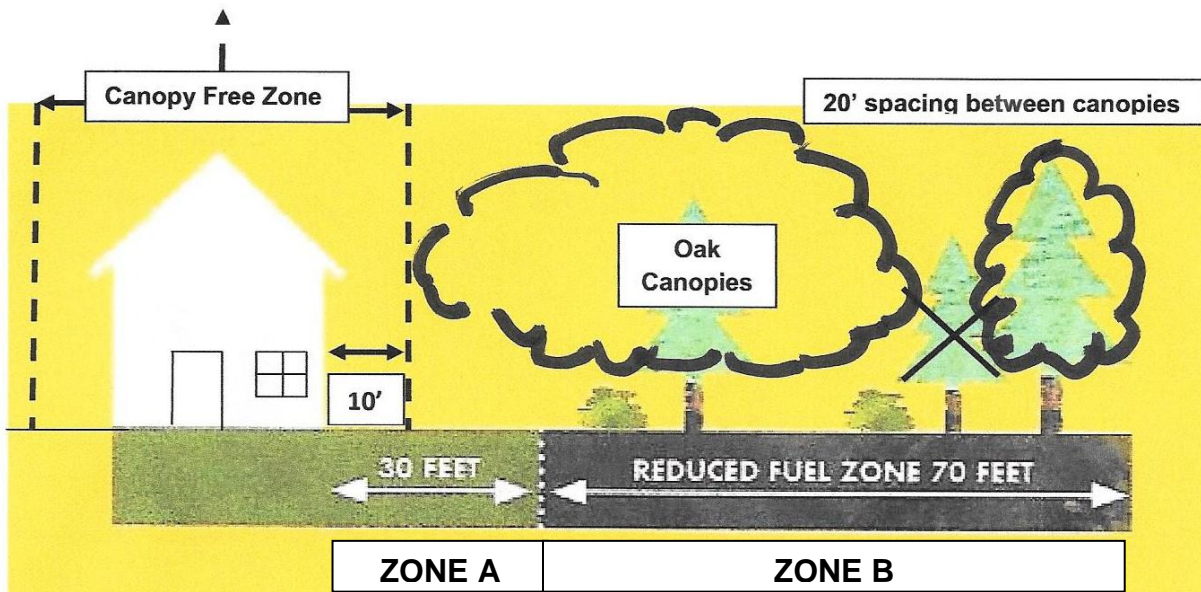
Santa Ana winds can occur in each month of the Calendar Year, however, they typically occur in late September through December and are responsible for spreading multiple fires, which severely taxes fire fighting resources resulting in many lives lost and thousands of homes destroyed. Because all firefighting resources could be committed to other wildfires, the homeowner is the key to his or her homes survival by always being prepared. The following graphics show what is needed for survival.

FIRE IGNITION RESISTANT ZONE GRAPHIC



Graphics No 1 and 2: The tree depictions in these two CAL FIRE graphics give the false impression that the trees shown could be pines, firs, cedars, junipers, etc. within Zone A and B, which is definitely not the case (see 100' zone prohibited plant list).

CANOPY FREE ZONE GRAPHIC



HORIZONTAL SPACING

Create horizontal and vertical spacing between plants, the amount of spacing will depend on how steep the slope is and the size of the plants.

The above graphic is good, however, in southern California there should be no flammable vegetation within 100' of structures. This includes pines, firs, cedars, junipers, (both tree and shrub forms) eucalyptus, pepper trees etc. (see list of prohibited plants within 100' of structures). The graphic interpretation of trees gives the false impression that these could be pines or firs, however, this is not the case. In addition, the canopies of trees growing within the 100' zone shall not encroach within the zone 10' out from the structure's exterior wall. This means that no limbs should ever encroach within this zone and protrude over the roof. Suitable trees within this 100' zone would include native oak species (*Quercus agrifolia*, *Quercus engelmannii*, *Quercus kelloggii*), native alder (*Alnus rhombifolia*), native sycamore (*Platanus racemosa*), and native cottonwood (*Populus fremontii*).

California sagebrush, black sage and buckwheat, all highly desirable species from a gnatcatcher habitat perspective, must be prohibited within the 100' FMZ. These plants within the FMZ must be weed whipped down to a 4" stubble height each spring. Other native plants, such as bush sunflower (*Encelia californica*) are permitted in clumps within the FMZ because as spring ends and the long hot summer begins these fragile plants become dormant and as they dry up and are broken off by seasonal winds they are blown away. If not weed whipped to a 4 inch stubble height, native plants such as buckwheat, California sage brush and black sage harden off during the drought phase of the summer season and even though still alive these plants now behave like aerially arranged highly flammable dead fuels that burn very intensely and, therefore, must be removed from the FMZ while leaving their root systems intact to prevent soil erosion (see Appendix A for a list of acceptable plants, Appendix B for a list of prohibited high fire hazard plants and Appendix C for a list of prohibited highly invasive plants).

3.2 Privacy Fencing

A variety of fencing materials are permitted by the City of Poway, however, wooden privacy fencing may not attach directly to the home, garage, etc. and can be no closer than five feet to a structure. Attached wooden privacy fencing was solely responsible for the loss of many homes in the City of San Diego Communities of Scripps Ranch and Tierrasanta during the 2003 Cedar Fire. A non-combustible material, such as masonry or see through steel bar fencing can be used between the wooden privacy fencing and the structure (see following example)



Photo 8: An example of a non-combustible transition between wooden fencing and the structure.

3.3 Roads/Streets

There are five planned private streets within THE FARM footprint and are shown on the Site Plan as well as described in the Specific Plan. Prior to delivery of combustible building materials on site, all planned vehicle access, including driveways and fire hydrants shall be in place and approved by the City of Poway. All dead-end access roads in excess of 150 feet in length shall have an unobstructed turn around cul-de-sac installed that will accommodate emergency apparatus. The minimum, unobstructed all weather paved radius width for each cul-de-sac shall be 38 feet in all residential areas. The planned streets are temporarily known as Private Drives A, B, C, D and E. Street parking will be provided on Private Drives A, B and C on one side of the street and on portions of D and E only where fronting residential lots. Those portions of each Private Drive where there is No Parking must be inter-visibly posted **“No Parking At Any Time”**. Each sign must be inter-visible from each location. All streets and private drives shall be designed and maintained with an all weather surface of asphalt or concrete to support a minimum load bearing weight of 75,000 pounds to safely support Emergency Fire Apparatus. There must be a continuously unobstructed 20' wide travel lane for Emergency Vehicle Access in each direction of travel on each street at all times. All streets and access roads shall have a vertical clearance of 13.6' above the road surface and shrubbery and trees must be cleared back a minimum of 15' from the edge of each street or access road for unencumbered access and to maintain line of sight. All driveways serving no more than two improved parcels shall have a minimum 16 feet of unobstructed width. The addresses for all structures within the Farm Project must be visible from the street.

Fire hydrant locations must be marked in the centerline of each street with “Blue Dot” permanent markers. Hydrant spacing shall not exceed 600 feet between hydrants in residential areas and 400 feet in all non residential areas with structures. If any of these streets are gated, the gates will be equipped with Knox Boxes or other City of Poway Fire Department approved system for Emergency access.

3.4 Water Supply

The City of Poway provides potable water and sewer services. The water supply is metered via City owned and supplied water meters.

3.5 Fire Station Location

The closest Fire Station to THE FARM Project is City of Poway Fire Station 2 located at 16912 Westling Court, which is to the immediate east of THE FARM project and just off of Espola Road.

3.5.1 Response Times

Emergency Response Travel Times are set forth in the San Diego County General Plan and apply to all City Fire Departments and Fire Protection Districts as follows: (see next page).

Table 1.
Emergency Response Times

LAND USE CATEGORY	MAXIMUM TRAVEL TIME	LAND USE CATEGORY DEFINED
Town	5 minutes	Single-family residential lots of less than two acres (<u>lot size is determined by the smallest lot size within the project</u>), or more intensive uses such as multi-family residential. Includes all industrial development and all commercial development except neighborhood commercial.
Estate	10 minutes	Single-family residential lots from two to four acres in size. Includes neighborhood commercial development.
Rural	20 minutes	Large lot single-family residential and agricultural development. Lot sizes of greater than four acres.

Response times are calculated using the National Fire Protection Association (NFPA) National Standard Emergency Travel Time of 35 mph. The longest distance from Station 2 to the most distant single-family home in THE FARM project was determined by map measurement and checked by Google Maps. The greatest distance from Station 2 is 2.5 miles. Using the formula distance $d = \text{rate } r \times \text{time } t$ ($d=r \times t$) where d is 2.5 miles, r is 35 mph, solving for t we have $t = (2.5 \text{ miles}/35 \text{ mph}) \times (60 \text{ minutes/hr})$ or 4.285714 minutes to the farthest out single-family home, which is within the 5 minute standard. The Google Map calculation indicates that access to the farthest point in the project using either Val Verde and Saint Andrews Drive or Cloudcroft to Tam O Shanter Drive can be reached within 5 minutes.

A Google Map Travel Analysis is displayed on the following page.

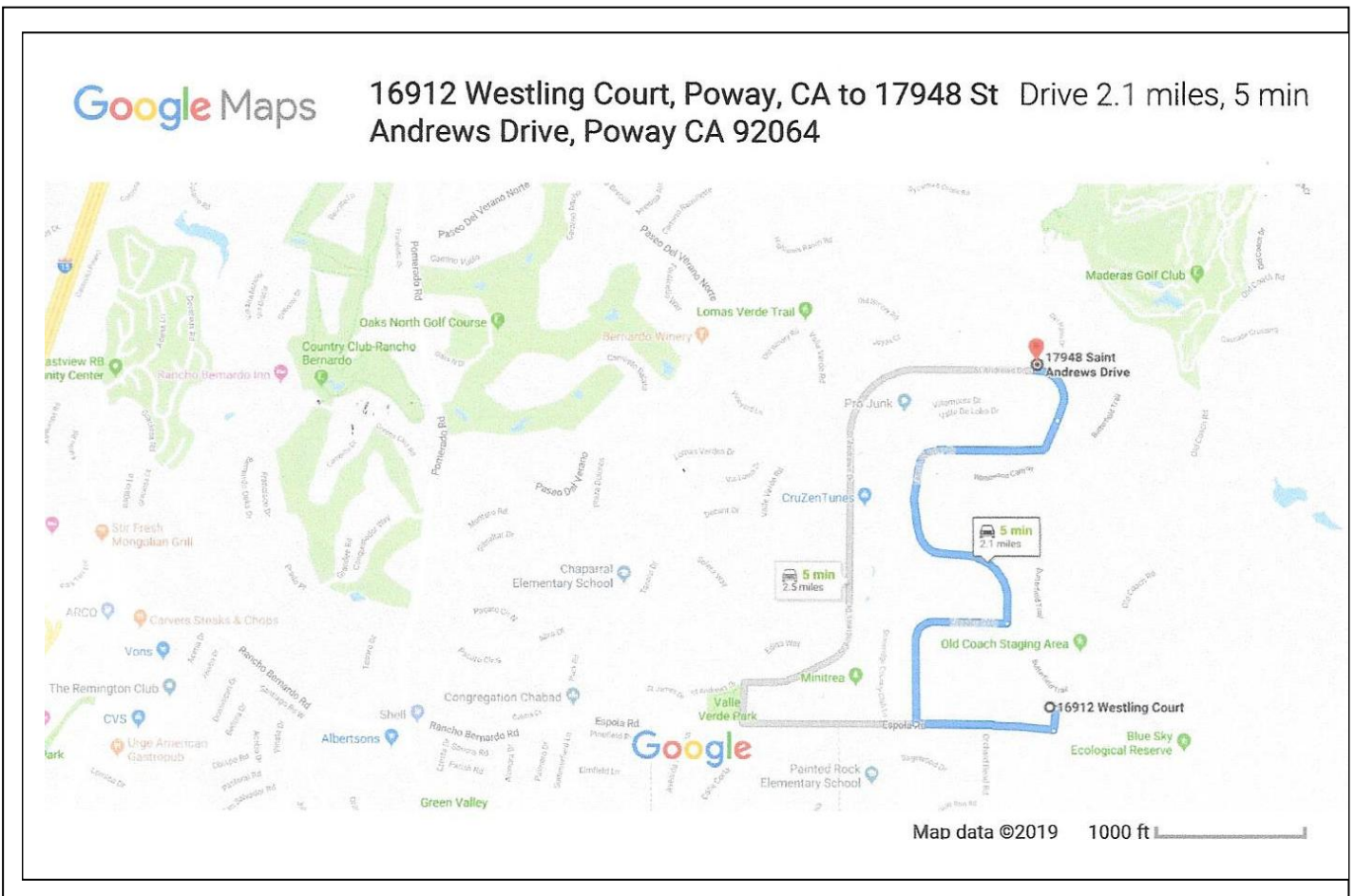


Exhibit 6: Emergency Response Travel Route and Travel Times to THE FARM's farthest structure. Any portion of THE FARM Project can be reached by Emergency Responders within 5 minutes (visual by Goggle Maps).

4.0 Table of Required Actions

The following is a table that summarizes the ongoing required actions within THE FARM Project as these required actions are scattered through the text and in the photo captions of this Fuel Management Plan.

NO.	REQUIRED ACTION	FREQUENCY
1.	All structures built within the Very High Fire Hazard Severity Area of this PROJECT shall fully comply with the requirements for homes built in Wildland/Urban Interface Areas as described in Chapter 7A of the State Building Code.	On going for all structures.
2.	Continually maintain all Zone A landscaping, keeping lawns mowed and irrigated and all shrubbery trimmed and well maintained, all leaf litter removed.	Weekly and as needed.
3.	Annually remove all highly flammable non-native grasses. Seed all barren and/or newly disturbed areas with a mix of native, drought resistant annual and perennial grasses: [California brome (<i>Bromus carinatus</i> var. <i>carinatus</i>), Blue wild rye (<i>Elymus</i>	Fall, winter and as needed.

	<i>glaucus ssp. glaucus</i>), slender wheatgrass (<i>Elymus trachycaulis spp. trachycaulis</i>), coast melic/onion grass (<i>Melica imperfecta</i>), purple needle grass (<i>Nassella pulchra</i>), small fescue (<i>Vulpia microstachys var. pauciflora</i>)].	
4.	Weed whip or mow all highly flammable vegetation in Zone B of the FMZ (including the above newly established native grasses in No. 3) down to a 4" stubble height after grasses have headed out and cured (annual and perennial grasses, California sagebrush, black sage and buckwheat).	Each spring or by June 1 of each year.
5.	On a 20' spacing annually cut and shape retained shrubs down to 12" in height; maintain separated clumps of white sage, San Diego sunflower and bush sunflower.	Each spring or by June 1 of each year.
6.	Excepting agriculture plant materials eradicate highly invasive non-native plants with herbicide treatments (Garlon or Round Up) as these plants emerge (pepper trees, eucalyptus trees, tamarisk, mustard, pampas grass, etc. within the FMZ (see Invasive Plant List in Appendix C).	Spring and as needed.
7.	All Home Owners will be required to and shall financially support the TFCA who has responsibility for the maintenance of vegetation growing in the water retention basins and common areas by June 1 and as needed during the year. This requirement will transfer to all future Home Owners.	Continuously.
8.	Adjacent Open Space Areas: Home Owners are prohibited from disposing of yard clippings and trimmings in adjacent common areas/open space areas.	Continuously.
9,	Keep the Community garden/farm areas free of accumulations of drying/dead vegetation.	Continuously
10.	THE FARM Project CC&R's shall include a copy of the Fuel Management Plan prepared for The FARM Project by Firewise 2000, LLC...	In perpetuity.

5.0 Conclusion:

This Fuels Management Plan (FMP) has been prepared in full conformance with State of California, County of San Diego and the City of Poway Fire Protection Requirements.

It is important to understand that THE FARM Project Developer is required to comply with the recommendations of this FMP, as directed by the City of Poway Director of Development Services to the maximum extent practicable. Since the FMP required by the Fire Marshal includes specific native seed selections and specific vegetative management practices to reduce flammability while providing for the stability of the existing slopes and the reduction of erosion, THE FARM Project Developer, by complying with the recommendations in this FMP, is additionally fulfilling the requirements for slope stability and erosion control as described above. Additionally, each prospective home buyer will be given a personal copy of this Fuels Management Plan. Once the homes are sold, the new homeowner is responsible for the maintenance of Fuel Management Zones A and B on their lot.

Additionally all FARM Home Owners will be required to financially support THE FARM Community Association (TFCA). The TFCA will have direct responsibility for the vegetative management in and around the water retention basins and common areas. The Chief Officer of the TFCA (elected by TFCA members) will report directly to the City of Poway Director of Development Services. Further, the responsibility for maintenance of Fuel Management Zones A and B and the requirement to financially support the TFCA conveys to successive owners of each lot within THE FARM Project in perpetuity.

###

APPENDIX "A"
CITY OF POWAY ACCEPTABLE PLANT LIST

APPENDIX "A"

**"*FIREWISE*" Landscape Planting
Considerations For Zones A and B,
Acceptable Plant List**

**Brahea armata, Melaleuca spp. and sage spp. are unacceptable
and should not be on this list.**

APPENDIX "A"

CITY OF POWAY ACCEPTABLE PLANT LIST

**CITY OF POWAY LANDSCAPE AND IRRIGATION DESIGN
MANUAL**

**ACCEPTABLE PLANTS FOR SURVIVABLE SPACE ZONES IN
FIRE PRONE AREAS**

(Wildland/Urban Interface/Intermix Areas)

ALL PLANTS ON THE FOLLOWING LIST are considered to be drought-tolerant in the particular climate zone noted. Those that grow best in riparian areas, as indicated by the (R), are the least drought-tolerant plants on the list.

SPECIAL NOTE: When planting, it is necessary to water deeply to encourage the plant roots to seek natural moisture in the soil. This watering should continue for at least three years to allow the plants to naturalize. More water should be provided in summer and less (if any) in the winter. These plants should be weaned off the supplemental irrigation and become less dependent on it over the establishment period.

No plant is totally fire resistant. The plants listed were chosen to due to their high water content, minimum amount of flammable resins and/or low fuel volume.

Definitions:

Survivable Space: The area around a structure, where material capable of causing fire has been cleared, reduced or changed, to act as a barrier between an advancing fire and the structure.

Drought-Tolerant Plant Materials: Trees, shrubs, groundcovers, and other vegetation capable of sustained growth and reproduction with only natural moisture. Occasional supplemental irrigation is necessary only in extreme drought situations.

Establishment Period: The time it takes for a plant to become drought-resistant. This is usually a period of three years and is the time when supplemental irrigation is necessary.

Native or Naturalizing Plant Species: Plant species native to the region or introduced, which, once established, are capable of sustaining growth and reproduction under local climatic conditions without supplemental irrigation.

San Diego County Climate Zone Key:

C - Coast

D – Desert

I-.Inland

M - Mountain

(R) – Riparian

APPENDIX "A"
CITY OF POWAY ACCEPTABLE PLANT LIST

SUGGESTED PLANT LIST FOR A DEFENSIBLE SPACE

<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>Climate Zone</u>
TREES		
Acer		
platanoides	Norway Maple	M
rubrum	Red Maple	M
saccharinum	Silver Maple	M
saccarum	Sugar Maple	M
macrophyllum	Big Leaf Maple	C/ (R)
Alnus rhombifolia	White Alder	C/I/M (R)
Arbutus		
unedo	Strawberry Tree	All zones
Archontophoenix		
cunninghamiana	King Palm	C
Arctostaphylos spp.**	Manzanita	C/I/D
Brahea		
armata	Blue Hesper Palm	C/D
edulis	Guadalupe Palm	C/D
Ceratonia siliqua	Carob	C/I/D
Cerdidium floridum	Blue Palo Verde	D
Cercis occidentalis**	Western Redbud	C/I/M
Cornus		
nuttallii	Mountain Dogwood	I/M
stolonifera	Redtwig Dogwood	I/M
Eriobotrya		
japonica	Loquat	C
Erythrina caffra	Kaffirboom Coral Tree	I/M
Ginkgo biloba "Fairmount"	Fairmount Maidenhair Tree	I/D/M
Gleditsia triacanthos	Honey Locust	
Juglans		I
californica	California Walnut	C/I
hindsii	California Black Walnut	I/D/M
Lagerstroemia indica	Crape Myrtle	I
Ligustrum lucidum	Glossy Privet	C/I/M
Liquidambar styraciflua	Sweet Gum	I
Liriodendron tulipifera	Tulip Tree	
Lyonothamnus floribundus		C
ssp. Asplenifolius	Fernleaf Catalina Ironwood	C/I/D
Melaleuca spp.	Melaleuca	C/I
Parkinsonia aculeate	Mexican Palo Verde	
Pistacia		
chinensis	Chinese Pistache Pistachio Nut	C/I/D

APPENDIX "A"
CITY OF POWAY ACCEPTABLE PLANT LIST

vera	Pistachio Nut	I
Pittosporum		
phillyraeoides	Willow Pittosporum	C/I/D
viridiflorum	Cape Pittosporum	C/I
Platanus		
acerifolia	London Plane Tree	All zones
racemosa**	California Sycamore	C/I/M
Populus		
alba	White Poplar	D/M
fremontii**	Western Cottonwood	I
trichocarpa	Black Cottonwood	I/M
Prunus		
xblireiana	Flowering Plum	M
caroliniana	Carolina Laurel Cherry	C
ilicifolia**	Hollyleaf Cherry	C
lyonii**	Catalina Cherry	C
serrulata 'Kwanzan'	Flowering Cherry	M
yedoensis 'Akebono'	Akebono Flowering Cherry	M
Quercus		
agrifolia**	Coast Live Oak	C/I
engelmannii	Engelmann Oak	I
** suber	Cork Oak	C/I/D
Rhus		
lancea**	African Sumac	C/I/D
Salix spp.**	Willow	All zones (R)
Tristania conferta	Brisbane Box	C/I
Ulmus		
parvifolia	Chinese Elm	I/D
pumila	Siberian Elm	C/M
Umbellularia californica**	California Bay Laurel	C/I

APPENDIX "A"
CITY OF POWAY ACCEPTABLE PLANT LIST

SHRUBS		
Agave	Century Plant	D
americana	Century Plant	D
deserti	Shawis Century Plant	D
shawii**		
Amorpha fruticosa**	False Indigobush	I
Arbutus		
menziesii**	Madrone	C/I
Arctostaphylos spp.**	Manzanita	C/I/D
Atriplex**		
canescens	Hoary Saltbush	I
lentiformis	Quail Saltbush	D
Baccharis**		
glutinosa	Mule Fat	C/I
pilularis	Coyote Bush	C/I/D
Carissa grandiflora	Natal Plum	C/I
Ceanothus spp.**	California Lilac	C/I/M
Cistus spp.	Rockrose	C/I/D
Cneoridium dumosum**	Bushrue	C
Comarostaphylis**		
diversifolia	Summer Holly	C
Convolvulus cneorum	Bush Morning Glory	C/I/M
Dalea		
orcuttii	Orcutt's Delea	D
spinosa**	Smoke Tree	I/D
Elaeagnus		
pungens	Silverberry	C/I/M
Encelia**		
californica	Coast Sunflower	C/I
farinosa	White Brittlebush	D/I
Eriobotrya		
deflexa	Bronze Loquat	C/I
Eriophyllum		
confertiflorum**	Golden Yarrow	C/I
staechadifolium	Lizard Tail	C
Escallonia spp.	Escallonia	C/I
Feijoa sellowiana	Pineapple Guava	C/I/D
Fouquieria splendens	Ocotillo	D
Fremontodendron**		
californicum	Flannelbush	I/M
mexicanum	Southern Flannelbush	I
Galvezia		
juncea	Baja Bush-Snapdragon	C
speciosa	Island Bush-Snapdragon	C
Garrya		
elliptica	Coast Silktassel	C/I
flavescens**	Ashy Silktassel	I/M

APPENDIX "A"
CITY OF POWAY ACCEPTABLE PLANT LIST

Heteromeles arbutifolia**	Ashy Silktassel	I/M
Lantana spp.	Toyon	C/I/M
Lotus scoparius	Lantana	C/I/D
Mahonia spp.	Deerweed	C/I
	Barberry	C/I/M
Malacothamnus clementinus		
	San Clemente Island Bush Mallow	C
fasciculatus**	Mesa Bushmallow	C/I
Melaleuca spp.	Melaleuca	C/I/D
Mimulus spp.**	Monkeyflower	C/I (R)
Nolina parryi		
parryi ssp. wolfii	Parry's Nolina	I
Photinia spp.	Wolf's Bear Grass	D
Pittosporum	Photinia	All Zones
crassifolium		C/I
rhombifolium		C/I
tobira 'Wheeleri'	Queensland Pittosporum	C/I/D
undulatum	Wheeler's Dwarf	C/I
viridiflorum	Victorian Box	C/I
Plumbago auriculata	Cape Pittosporum	C/I/D
Prunus caroliniana	Cape Plumbago	
ilicifolia**	Carolina Laurel Cherry	C
lyonii**	Hollyleaf Cherry	C
Punica granatum	Catalina Cherry	C
Pyracantha spp.	Pomegranate	C/I/D
Quercus dumosa**	Firethorn	All Zones
Rhamus alaternus	Scrub Oak	C/I
californica**		
Rhaphiolepis spp.	Italian Blackthorn	C/I
Rhus integrifolia**	Coffeeberry	C/I/M
laurina	Rhaphiolepis	C/I/D
lentii		
ovata**	Lemonade Berry	C/I
trilobata**	Laurel Sumac	C/I
Ribes viburnifolium	Pink-Flowering Sumac	C/D
speciosum**	Sugarbush	I/M
Romneya coulteri	squawbush	I
Rosa californica**	Evergreen Currant	C/I
minutifolia	Fuschia-Flowering Gooseberry	C/I/D
	Matilija Poppy	I

APPENDIX "A"
CITY OF POWAY ACCEPTABLE PLANT LIST

Salvia spp.**	California Wild Rose	C/I
Sambucus spp.**	Baja California Wild Rose	C/I
Symphoricarpos mollis**	Sage	All Zones
Syringa vulgaris	Elderberry	C/I/M
Tecomaria capensis	Creeping Snowberry	C/I
Teucrium fruticans	Lilac	M
Toxicodendron**	Cape Honeysuckle	C/I/D
diversilobum	Bush Germander	C/I
Verbena		
lilacina	Poison Oak	I/M
Xylosma congestum		
Yucca**	Lilac Verbena	C
schidigera	Shiny Xylosma	C/I
whipplei		
	Mojave Yucca	D
	Foothill Yucca	I

APPENDIX "A"
CITY OF POWAY ACCEPTABLE PLANT LIST

GROUNDCOVERS		
Achillea**	Yarrow	All Zones
Aptenia cordifolia	Apteria	C
Arctostaphylos spp.**	Manzanita	C/I/D
Baccharis**		
pilularis	Coyote Bush	C/I/D
Ceanothus spp.**	California Lilac	C/I/M
Cerastium tomentosum	Snow-in-Summer	All Zones
Coprosma kirkii	Creeping Coprosma	C/I/D
Cotoneaster spp.	Redberry	All Zones
Drosanthemum hispidum	Rosea Ice Plant	C/I
Dudleya		
brittonii	Brittonis Chalk Dudleya	C
pulverulenta**	Chalk Dudleya	C/I
virens	Island Live Fore-ever	C
Eschscholzia californica**	California Poppy	All Zones
Euonymus fortunei		
'Carrierei'	Glossy Winter Creeper	M
'Coloratus'	Purple-Leaf Winter Creeper	M
Ferocactus viridescens**	Coast Barrel Cactus	C
Gaillardia grandiflora	Blanket Flower	All Zones
Gazania spp.	Gazania	C/I
Helianthemum spp.**	Sunrose	All Zones
Lantana spp.	Lantana	C/I/D
Lasthenia		
californica**	Common Goldfields	I
glabrata	Coastal Goldfields	C
Lupinus spp.**	Lupine	C/I/M
Myoporum spp.	Myoporum	C/I
Pyracantha spp.	Firethorn	All zones
Rosmarinus officinalis	Rosemary	C/I/D
Santolina		
chamaecyparissus	Lavender Cotton	All Zones
virens	Santolina	All Zones
Trifolium frageriferum	O'Connor's Legume	C/I
Verbena		
rigida	Verbena	All Zones
Viguiera laciniata**	San Diego Sunflower	C/I
Vinca		
minor	Dwarf Periwinkle	M

APPENDIX "A"
CITY OF POWAY ACCEPTABLE PLANT LIST

VINES		
Antigonon leptopus	San Miguel Coral Vine	C/I
Distictis buccinatoria	Blood-Red Trumpet Vine	C/I/D
Keckiella cordifolia**	Heart-Leaved Penstemon	C/I
Lonicera		
japonica 'Halliana'	Hall's Honeysuckle	All Zones
subspicata**	Chaparral Honeysuckle	C/I
Solanum		
jasminoides	Potato Vine	C/I/D
PERENNIALS		
Coreopsis		
gigantea	Giant Coreopsis	C
grandiflora	Coreopsis	All Zones
maritime	Sea Dahlia	C
verticillata	Coreopsis	C/I
Heuchera maxima	Island Coral Bells	C/I
Iris douglasiana**	Douglas Iris	C/M
Iva hayesiana**	Poverty Weed	C/I
Kniphofia uvaria	Red-Hot Poker	C/M
Lavandula spp.	Lavender	All Zones
Limonium californicum		
var. mexicanum	Coastal Statice	C
perezii	Sea Lavender	C/I
Oenothera spp.	Primrose	C/I/M
Penstemon spp.**	Penstemon	C/I/D
Satureja douglasii	Yerba Buena	C/I
Sisyrinchium		
bellum	Blue-Eyed Grass	C/I
californicum	Golden-Eyed Grass	C
Solanum		
xantii	Purple Nightshade	C/I
Zauschneria**		
californica	California Fuschia	C/I
cana	Hoary California Fuschia	C/I
'Catalina'	Catalina Fuschia	C/I
ANNUALS		
Lupinus spp.**	Lupine	C/I/M

**APPENDIX “B”
CITY OF POWAY PROHIBITED PLANT LIST**

**APPENDIX “B”
CITY OF POWAY PROHIBITED PLANT LIST**

**"*FIREWISE*"
Prohibited Plant Lists**

**Plants That Are Prohibited Because Of Their Very High
Flammability
(plants prohibited within 100 Feet of structures)**

Brahea armata, Melaleuca spp. and sage spp. should be added to the Prohibited Plant List

APPENDIX "B"
CITY OF POWAY PROHIBITED PLANT LIST

PROHIBITED PLANT LIST

The following species are highly flammable and shall be prohibited when planting within the first 100 feet adjacent to a structure. The plants listed below are more susceptible to burning, due to rough or peeling bark, production of large amounts of litter, vegetation that contains oils, resin, wax, or pitch, large amounts of dead material in the plant, or plantings with a high dead to live fuel ratio. Many of these species, if existing on the property and adequately maintained (pruning, thinning, irrigation, litter removal, and weeding), may remain as long as the potential for spreading a fire has been reduced or eliminated.

<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>
<u>Abies species</u>	Fir Trees
<u>Acacia species</u>	Acacia (trees, shrubs, groundcovers)
<u>Adenostoma sparsifolium</u> **	Red Shanks
<u>Adenostoma fasciculatum</u> **	Chamise
<u>Agonis juniperina</u>	Juniper Myrtle
<u>Araucaria species</u>	Monkey Puzzle, Norfolk Island Pine
<u>Artemesia californica</u> **	California Sagebrush
<u>Bambusa species</u>	Bamboo
<u>Cedrus species</u>	Cedar
<u>Chamaecyparis species</u>	False Cypress
<u>Coprosma pumila</u>	Prostrate Coprosma
<u>Cryptomeria japonica</u>	Japanese Cryptomeria
<u>Cupressocyparis leylandii</u>	Leylandii Cypress
<u>Cupressus forbesii</u> **	Tecate Cypress
<u>Cupressus glabra</u>	Arizona Cypress
<u>Cupressus sempervirens</u>	Italian Cypress
<u>Dodonea viscosa</u>	Hopseed Bush
<u>Eriogonum fasciculatum</u> **	Common Buckwheat
<u>Eucalyptus species</u>	Eucalyptus
<u>Heterotheca grandiflora</u> **	Telegraph Plant
<u>Juniperus species</u>	Junipers
<u>Larix species</u>	Larch
<u>Lonicera japonica</u>	Japanese Honeysuckle
<u>Miscanthus species</u>	Eulalia Grass
<u>Muehlenbergia species</u> **	Deer Grass
<u>Palmae species</u>	Palms Spruce
<u>Picea species</u>	Trees
<u>Pickeringia Montana</u> **	Chaparral Pea
<u>Pinus species</u>	Pines
<u>Podocarpus species</u>	Fern Pine
<u>Pseudotsuga menziesii</u>	Douglas Fir
<u>Rosmarinus species</u>	Rosemary
<u>Salvia mellifera</u> **	Black Sage
<u>Taxodium species</u>	Cypress
<u>Taxus species</u>	Yew
<u>Thuja species</u>	Arborvitae
<u>Tsuga species</u>	Hemlock
<u>Urtica urens</u> **	Burning Nettle

** San Diego County native species

APPENDIX "B"
CITY OF POWAY PROHIBITED PLANT LIST

References: Gordon, H. White, T.C. 1994. Ecological Guide to Southern California Chaparral Plant Series. Cleveland National Forest.

Willis, E. 1997. San Diego County Fire Chief's Association. Wildland/Urban Interface Development Standards

City of Oceanside, California. 1995. Vegetation Management. Landscape Development Manual. Community Services Department, Engineering Division.

City of Vista, California 1997. Undesirable Plants. Section 18.56.999. Landscaping Design, Development and Maintenance Standards.

www.bewaterwise.com. 2004. Fire-resistant California Friendly Plants.

www.ucfpl.ucop.edu. 2004. University of California, Berkeley, Forest Products Laboratory, College of Natural Resources. Defensible Space Landscaping in the Urban/Wildland Interface. A Compilation of Fire Performance Ratings of Residential Landscape Plants.

County of Los Angeles Fire Department. 1998. Fuel Modification Plan Guidelines. Appendix I, Undesirable Plant List, and Appendix II, Undesirable Plant List.

APPENDIX "C"
CITY OF POWAY INVASIVE PLANT LIST

APPENDIX "C"
CITY OF POWAY INVASIVE PLANT LIST

"*FIREWISE*"
Invasive Plant List

**Plants That Are Prohibited Because Of Their Highly
Invasive Nature**

**Lantana spp., Foeniculum vulgare and Ricinus communis should be added to the
Invasive Plant List.**

APPENDIX "C"
CITY OF POWAY INVASIVE PLANT LIST

INVASIVE PLANT LIST

The following species are considered invasive (i.e., those capable of reproducing and spreading into native, non-irrigated areas and displacing those communities). Non-native plant species are prohibited in all areas adjacent to open space lands. Noxious weeds that have been introduced to San Diego County over the years tend to be more widespread and therefore more difficult to contain. The plants listed below have been identified as invasive and/or as noxious weeds and should not be planted or allowed to sprout in any transitional landscapes (landscapes planted with non-native species next to undeveloped areas).

<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>
<u><i>Ailanthus altissima</i></u>	Tree of Heaven
<u><i>Anthemis cotula</i>***</u>	Mayweed, Stinking Chamolile
<u><i>Arctotheca calendola</i></u>	Cape Weed
<u><i>Arundo donax</i></u>	Giant Cane
<u><i>Atriplex semibaccata</i></u>	Australian Saltbush
<u><i>Brassica species</i>***</u>	Mustard
<u><i>Cardaria draba</i>***</u>	Hoary Cress, Perennial Peppergrass
<u><i>Carpobrotus edulis</i></u>	Ice Plant
<u><i>Centaurea solstitialis</i></u>	Yellow Starthistle
<u><i>Cirsium vulgare</i>***</u>	Wild Artichoke
<u><i>Conium maculatum</i></u>	Poison Hemlock
<u><i>Conyza Canadensis</i>***</u>	Horseweed
<u><i>Cortaderia selloana</i></u>	Pampas Grass
<u><i>Cotoneaster lacteus</i></u>	Cotoneaster
<u><i>Cupressus macrocarpa</i></u>	Monterey Cypress
<u><i>Cynara cardunculus</i>***</u>	Artichoke Thistle
<u><i>Cytisus species</i></u>	Scotch Broom, French Broom, etc
<u><i>Elaeagnus angustifolia</i></u>	Russian Olive
<u><i>Eucalyptus globulus</i></u>	Eucalyptus Blue Gum
<u><i>Gensita species</i>***</u>	Broom
<u><i>Hedera helix</i></u>	English Ivy
<u><i>Hypericum perforatum</i></u>	St. John's Wort
<u><i>Ilex aquifolium</i></u>	English Holly
<u><i>Lactuca serriola</i>***</u>	Prickly Lettuce
<u><i>Lepidium latifolium</i></u>	Perennial Pepperweed
<u><i>Myoporum parvifolium</i></u>	Trailing Myoporum
<u><i>Nerium oleander</i></u>	Oleander
<u><i>Nicotiana species</i></u>	Tree Tobacco
<u><i>Olea europaea</i></u>	Olive
<u><i>Pennisetum setaceum</i></u>	Fountain Grass
<u><i>Ricinus communis</i></u>	Castor Bean
<u><i>Robinia pseudoacacia</i></u>	Black Locust
<u><i>Salsola australis</i>***</u>	Russian Thistle, Tumbleweed
<u><i>Schinus molle</i></u>	California Pepper
<u><i>Schinus terebinthifolius</i></u>	Brazilian Pepper
<u><i>Silybum marianum</i>***</u>	Milk Thistle
<u><i>Spartium junceum</i></u>	Spanish Broom

APPENDIX "C"
CITY OF POWAY INVASIVE PLANT LIST

<u>Tamarix species</u>	Tamarisk
<u>Ulex europea</u> ***	Gorse
<u>Vinca major</u>	Periwinkle

*** Introduced Weeds to San Diego County

References: Bell, Carl, Regional Advisor – Invasive Plants. 2004. University of California Cooperative Extension.

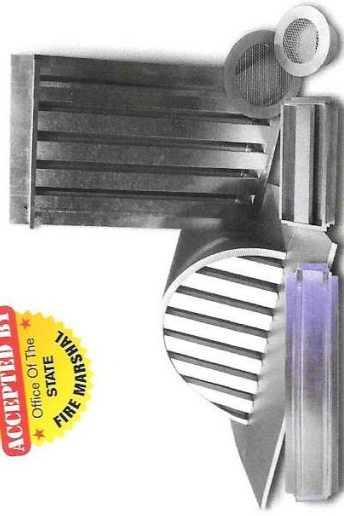
California Exotic Pest Plant Council. October, 1999. Exotic Pest Plants of Greatest Ecological Concern in California. Most Invasive Wildland Pest Plants. www.caleppc.org/info/99lista.html.

Meets Fire Code Requirements

FIRE PREVENTION VENTS

Resist Flames and Embers

The ONLY one with Overlapping Baffle Protection!



Invented by a California Fireman!

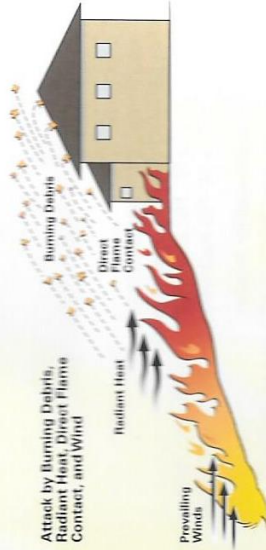
Also tested and proven to resist Wind Driven Rain, Snow and Pests!



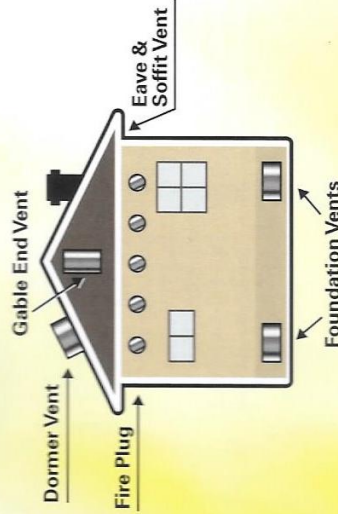
BRANDGUARD Vents
YOUR BEST DEFENSE

www.BrandguardVents.com

Fire Marshals Know that Structures are Very Susceptible to Windblown Flames and Embers



Use Fire Prevention Vents to Help Save Homes!



Contact information:
Brandguard Vents, Inc.
1001 Avenida Pico, Ste 221
San Clemente, CA 92673
Tel: (949) 481-5300
Fax: (949) 606-8329
info@BrandguardVents.com
www.BrandguardVents.com

Proven Design

- Only One with "Overlapping Baffles"
- Air Flows Through but Flames And Embers Can't Penetrate
- Reliable Protection — No Depending on Chemical Reactions or Moving Parts
- Patented Design
- Proven By Contractors In The Field

Easy Install

- Little Difference from Conventional Vents
- Instruction Sheets Available with Large Pictures

High Quality Materials

- Made with 26 Gauge Galvanized Steel, G90 for Long Life
- Easy to Paint, or Custom-Order Colors Needed
- Custom Materials and Sizes Available
- 20 Year Warranty

Invented by a California Fireman !



"I've seen first-hand how windblown flames and embers can burn a house down in minutes. So I invented these products to save homes. Please try my products and let me know what you think."

Brent Berkompas
Founder

New Building Code Requirement

- State Fire Marshal has changed the building code
- In response to extensive loss of properties and lives from wildfires
- Structures in affected areas must now have Flame and Ember Resistant Vents
- Impacts new construction and remodels
- [See Chapter 7a provisions; Section 704.2 Attic Ventilation Codes]
- Passed all parts of ASTM E2886/2912

Code Compliant Vents

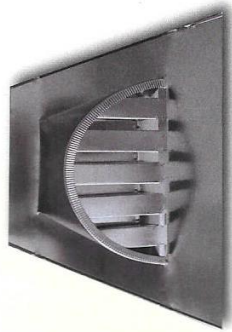
- Vents must "resist the intrusion of flames and embers"
- Brandguard Vents are "clearly superior" to ¼" mesh
- Accepted & recommended by Building Officials and Fire Marshals throughout the state

Meet Airflow Requirements

- Brandguard Vents deliver Code Required NFVA air flow values
- Note that the new code allows Fire Prevention Vents to be used Under Eaves in Fire Hazard areas
- Venting in the Under Eaves is the best way to ventilate



Models for New Construction and Retrofits



Dormers

DV2011 – 9" x 18" Flat Back Dormer
 DV2021 – 12" x 24" Flat Back Dormer
 DV2031 – 9" x 18" Flat Back Dormer w/Soft Alum Flashing
 DV2041 – 12" x 24" Flat Back Dormer w/Soft Alum Flashing

Retrofit models – call for details

Class A fire rated RIDGE VENTS also available!



Eave and Soffit Vents

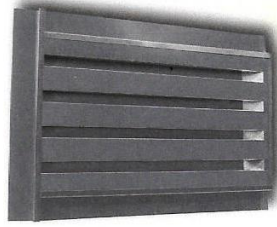
UE2011 – 3.5" x 22" Under Eave Vent
 UE2021 – 3.5" x 14" Under Eave Vent
 UE2031 – 14" x 5" Under Eave Vent
 UE2041 – 22" x 3" Under Eave Vent
 UE2051 – 5.5" x 22" Under Eave Vent
 CS2031 – 120" x 2" Continuous Soffit Vent
 CS2011 – 120" x 3.5" Continuous Soffit Vent
 CS2021 – 120" x 5.5" Continuous Soffit Vent
 FP2011 – 2" Fireplug Under Eave Block Hole Vent
 FP2021 – 3" Fireplug Under Eave Block Hole Vent

Retrofit models – call for details



Foundation Vents

FV2011 – 6" x 14" Foundation Vent
 FV2021 – 8" x 16" Foundation Vent
 Retrofit models – call for details



Gable End Vents

GV2011 – 12" x 12" Gable Vent
 GV2021 – 12" x 18" Gable Vent
 GV2021 – 14" x 12" Gable Vent
 GV2041 – 14" x 18" Gable Vent
 GV2051 – 14" x 24" Gable Vent
 GV2061 – 18" x 20" Gable Vent
 GV2071 – 18" x 24" Gable Vent
 GV2081 – 22" x 30" Gable Vent
 RV2011 – 18" Round Gable Vent

Retrofit models – call for details

Retrofit Fireplugs™

Fireplugs™ are the line of RETROFIT vents from Brandguard. Each is easily inserted over most existing louvered and mesh vents. Easy to install with adhesive (caulking) and affix with metal screws.

RETROFIT versions are available for every model listed.

Subflashing RETROFIT Kits are also available. Contact us for details.



DISCLAIMER

FIREWISE 2000, INC.

receives no commission for this referral. It is just a great product that works and it is economical!

APPENDIX E

BEHAVE RUNS

TWO SCENARIOS CONSISTING OF A “WORST CASE” SANTA ANA WIND (7 PAGES) AND AN ABOVE AVERAGE “WORST CASE” SOUTHWEST PREVAILING WIND, (6 PAGES) FOR A TOTAL OF 13 PAGES.

**Inputs: SURFACE, IGNITE**

Description THE FARM under a Santa Ana wind

Fuel/Vegetation, Surface/Understory

Fuel Model 3, gr1, gr2, gr4, gr7, gs1,

Fuel Moisture

1-h Moisture	%	4
10-h Moisture	%	6
100-h Moisture	%	8
Live Herbaceous Moisture	%	30
Live Woody Moisture	%	60

Weather

Midflame Wind Speed (upslope)	mi/h	40
Air Temperature	oF	90
Fuel Shading from the Sun	%	0

Terrain

Slope Steepness	%	50
-----------------	---	----

Acceptable Fire Conditions

Surface Rate of Spread (maximum)	(ft/min)	<input checked="" type="checkbox"/> 1.0	- 60.0
Flame Length	(ft)	<input type="checkbox"/> 2.0	- 12.0
Probability of Ignition from a Firebrand	(%)	<input checked="" type="checkbox"/> 0	- 80

Run Option Notes

Maximum reliable effective wind speed limit IS imposed [SURFACE].
 Calculations are only for the direction of maximum spread [SURFACE].
 Fireline intensity, flame length, and spread distance are always
 for the direction of the spread calculations [SURFACE].
 Wind is blowing upslope [SURFACE].
 Output distances are also displayed in map units [MAP].

Output Variables

Surface Rate of Spread (maximum) (ft/min) [SURFACE]
 Flame Length (ft) [SURFACE]
 Probability of Ignition from a Firebrand (%) [IGNITE]

(continued on next page)



Input Worksheet (continued)

Notes

This calculation is for a 60 mph Santa Ana wind in the coastal sage scrub/chaparral (sh5, sh7) vegetation on the 50%down slope that lies to the immediate east of THE FARM Project. The fuel moistures reflect the conditions encountered in mid September through December after a long hot and dry summer season and prior to the winter rainy winter season, with extremely low humidity and rock bottom fuel moistures in all size classes, which is very typical in southern California in late summer and fall. The worst case winds often reach wind speeds in excess of 80 mph along the crests of the mountain peaks to the east. Fire spread and intensity maxes out at 40 mph in the BEHAVE PLUS FUEL Models. The situation modeled is a wildfire to the north, northeast, east showering areas 1 to 2 miles ahead of the actual fire front with embers. This run illustrates the effects on an array of fuel models representing the current unmanaged condition to a managed condition that will be created in FMZ's 1 and 2 and the

direct impact on the flame lengths and intensities produced.

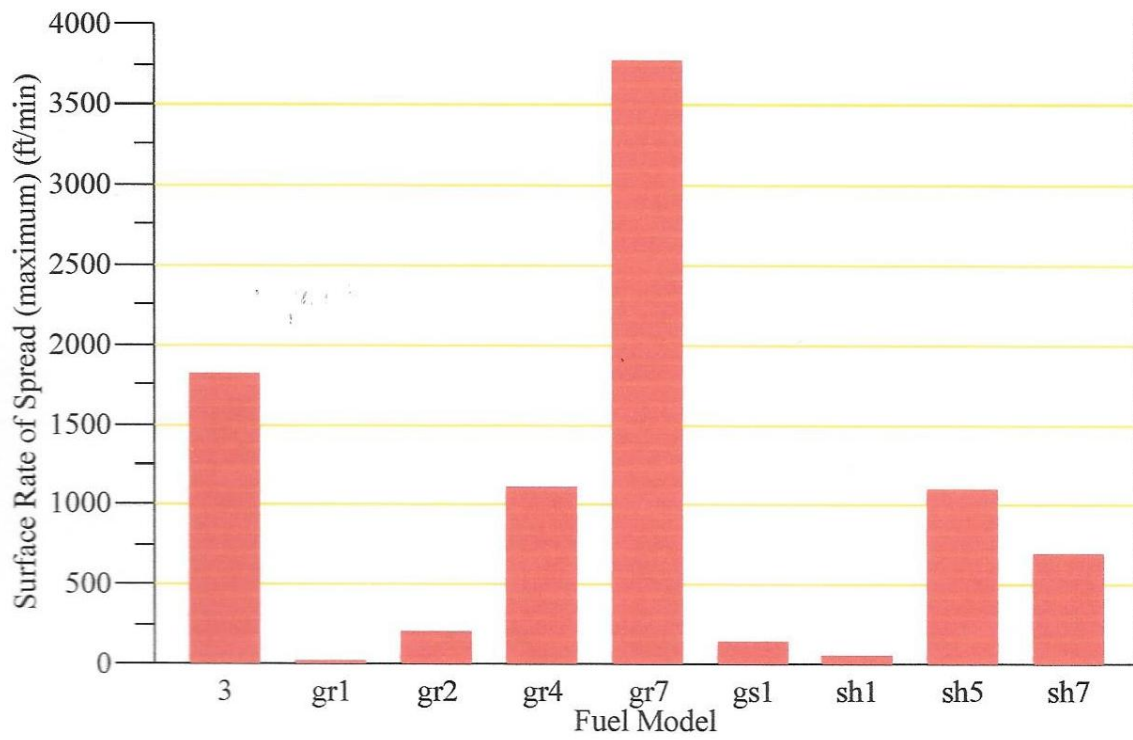


THE FARM under a Santa Ana wind

Fuel Model	ROS (max) ft/min	Flame Length ft	Firebrand Ignition %
3	1820.7	47.8	78
gr1	23.5	2.2	78
gr2	211.3	10.0	78
gr4	1112.7	29.1	78
gr7	3779.4	90.8	78
gs1	149.8	9.8	78
sh1	57.6	6.2	78
sh5	1101.2	53.6	78
sh7	699.8	49.9	78

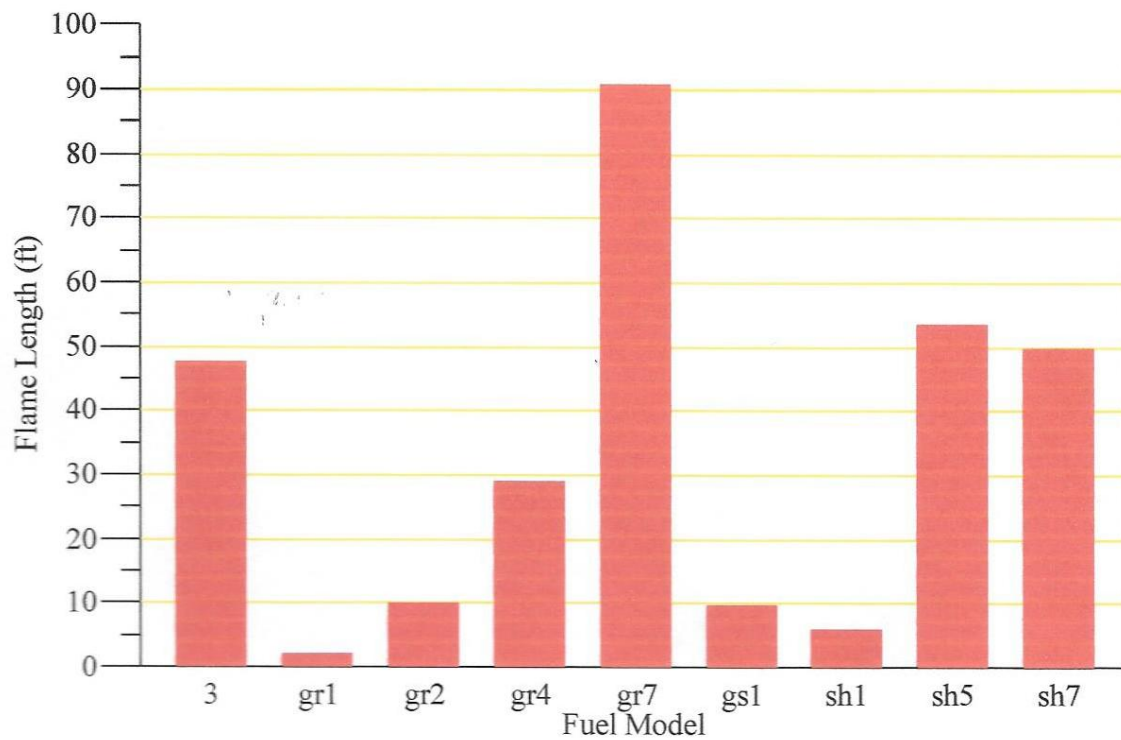


THE FARM under a Santa Ana wind

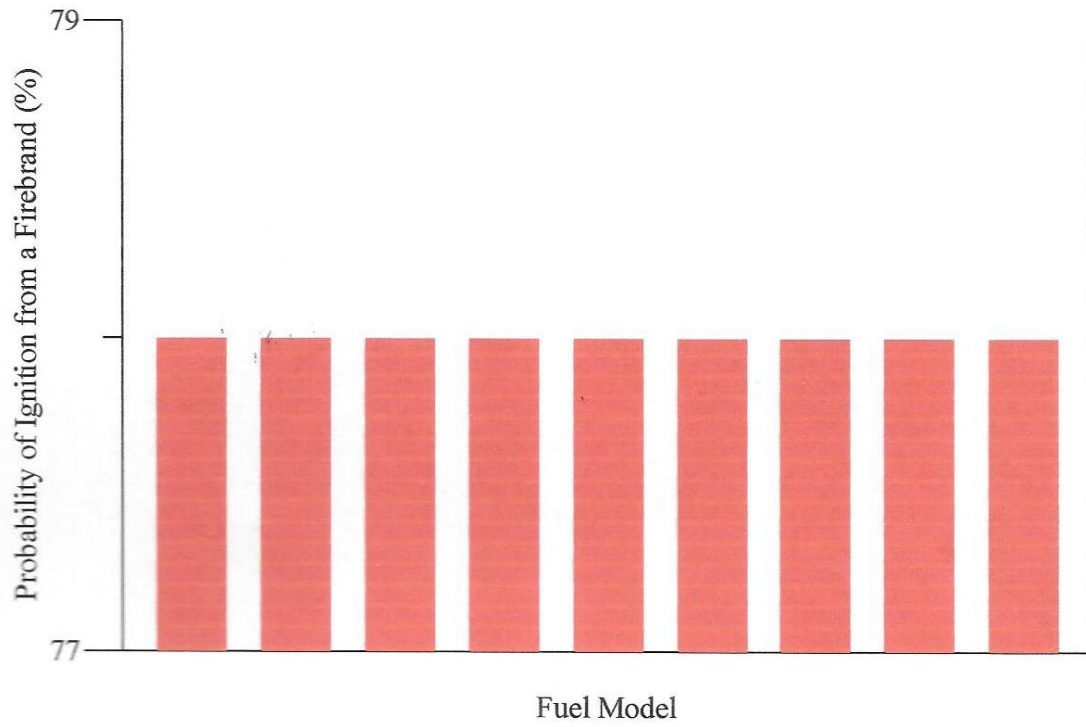




THE FARM under a Santa Ana wind



THE FARM under a Santa Ana wind





Discrete Variable Codes Used THE FARM under a Santa Ana wind

Fuel Model

3	Tall grass (S)
gr1	Short, sparse, dry climate grass (D) (101)
gr2	Low load, dry climate grass (D) (102)
gr4	Moderate load, dry climate grass (D) (104)
gr7	High load, dry climate grass (D) (107)
gs1	Low load, dry climate grass-shrub (D) (121)
sh1	Low load, dry climate shrub (D) (141)
sh5	High load, dry climate shrub (S) (145)
sh7	Very high load, dry climate shrub (S) (147)

**Inputs: SURFACE, IGNITE**

Description THE FARM under an above average prevailing SW win
Fuel/Vegetation, Surface/Understory

Fuel Model 3, gr1, gr2, gr4, gr7, gs1,

Fuel Moisture

1-h Moisture	%	<u>4</u>
10-h Moisture	%	<u>6</u>
100-h Moisture	%	<u>8</u>
Live Herbaceous Moisture	%	<u>30</u>
Live Woody Moisture	%	<u>60</u>

Weather

Midflame Wind Speed (upslope)	mi/h	<u>30</u>
Air Temperature	oF	<u>75</u>
Fuel Shading from the Sun	%	<u>0</u>

Terrain

Slope Steepness	%	<u>50</u>
-----------------	---	-----------

Run Option Notes

Maximum reliable effective wind speed limit IS imposed [SURFACE].
 Calculations are only for the direction of maximum spread [SURFACE].
 Fireline intensity, flame length, and spread distance are always
 for the direction of the spread calculations [SURFACE].
 Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ft/min) [SURFACE]
 Flame Length (ft) [SURFACE]
 Probability of Ignition from a Firebrand (%) [IGNITE]

Notes

This calculation is for an above average prevailing SW wind coming on the heels of the breakdown of a period of sustained Santa Ana winds. In the case of THE FARM the area to the west, southwest of THE FARM is all high density residential with literally no wildland open space. The probability of a wind driven wildfire from the SW burning through all of the residential areas to the west of THE FARM is very low.

residential areas to the west of THE FARM is very low.

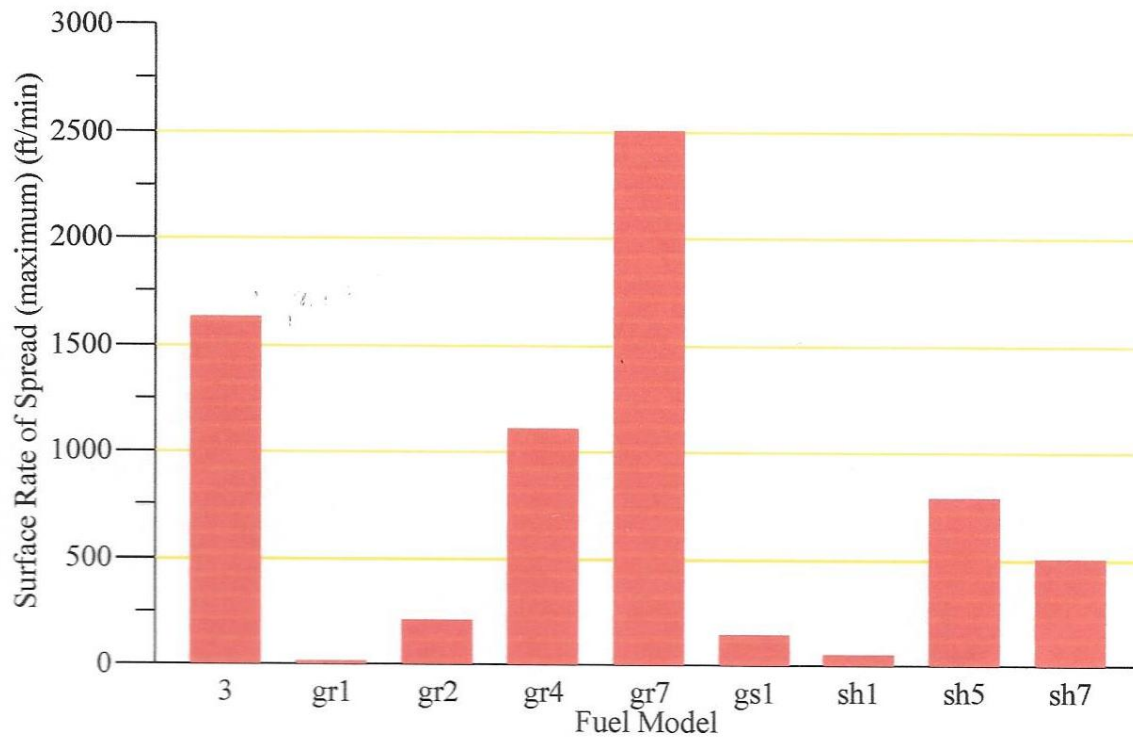


THE FARM under an above average prevailing SW wind

Fuel Model	ROS (max) ft/min	Flame Length ft	Firebrand Ignition %
3	1638.2	45.5	74
gr1	23.5	2.2	74
gr2	211.3	10.0	74
gr4	1112.7	29.1	74
gr7	2510.2	75.2	74
gs1	149.8	9.8	74
sh1	57.6	6.2	74
sh5	792.0	46.1	74
sh7	505.3	42.9	74

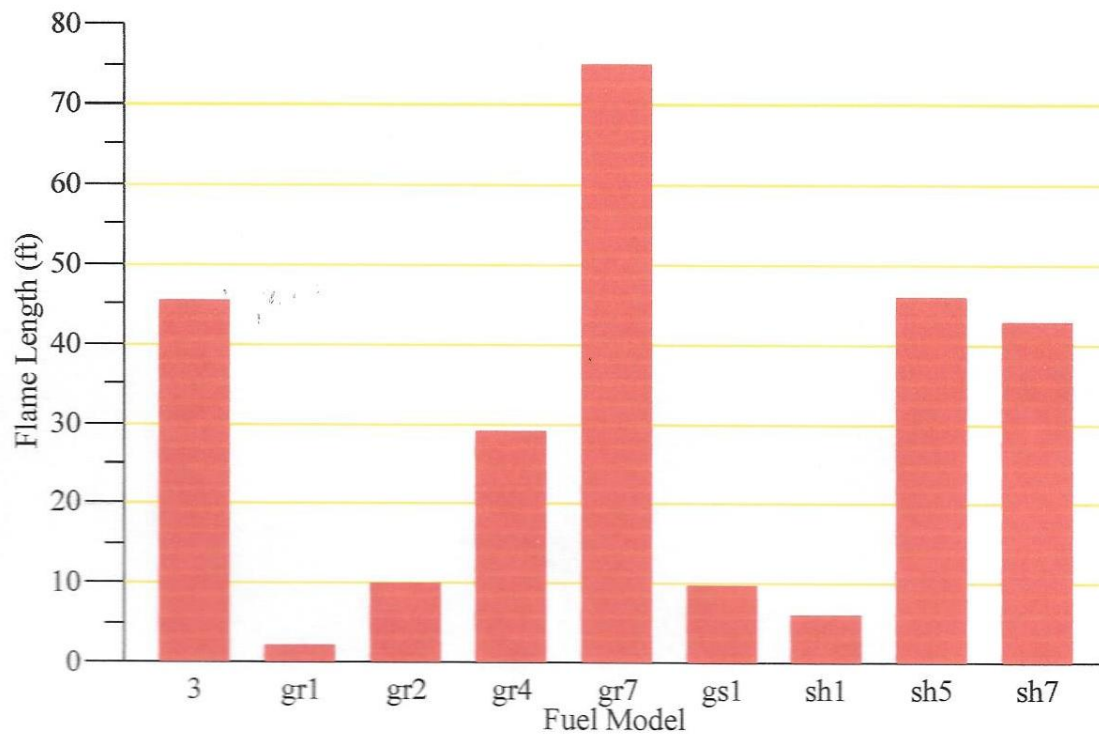


THE FARM under an above average prevailing SW wind



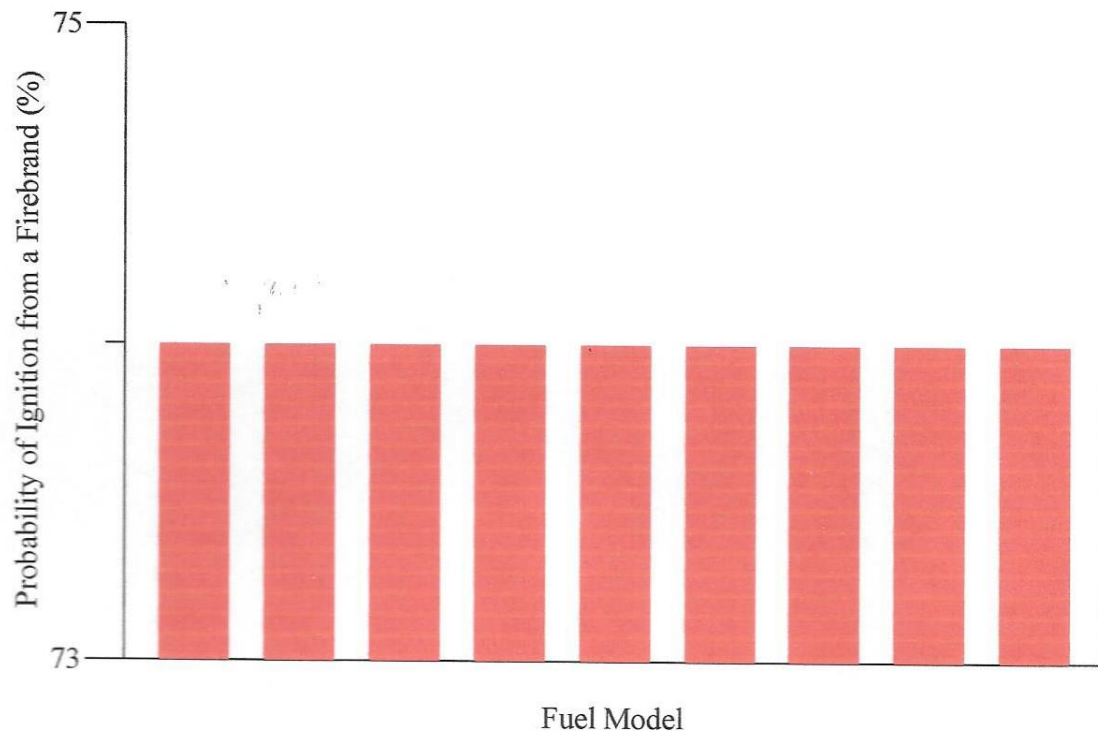


THE FARM under an above average prevailing SW wind





THE FARM under an above average prevailing SW wind





Discrete Variable Codes Used

THE FARM under an above average prevailing SW wind

Fuel Model

3	Tall grass (S)
gr1	Short, sparse, dry climate grass (D) (101)
gr2	Low load, dry climate grass (D) (102)
gr4	Moderate load, dry climate grass (D) (104)
gr7	High load, dry climate grass (D) (107)
gs1	Low load, dry climate grass-shrub (D) (121)
sh1	Low load, dry climate shrub (D) (141)
sh5	High load, dry climate shrub (S) (145)
sh7	Very high load, dry climate shrub (S) (147)

