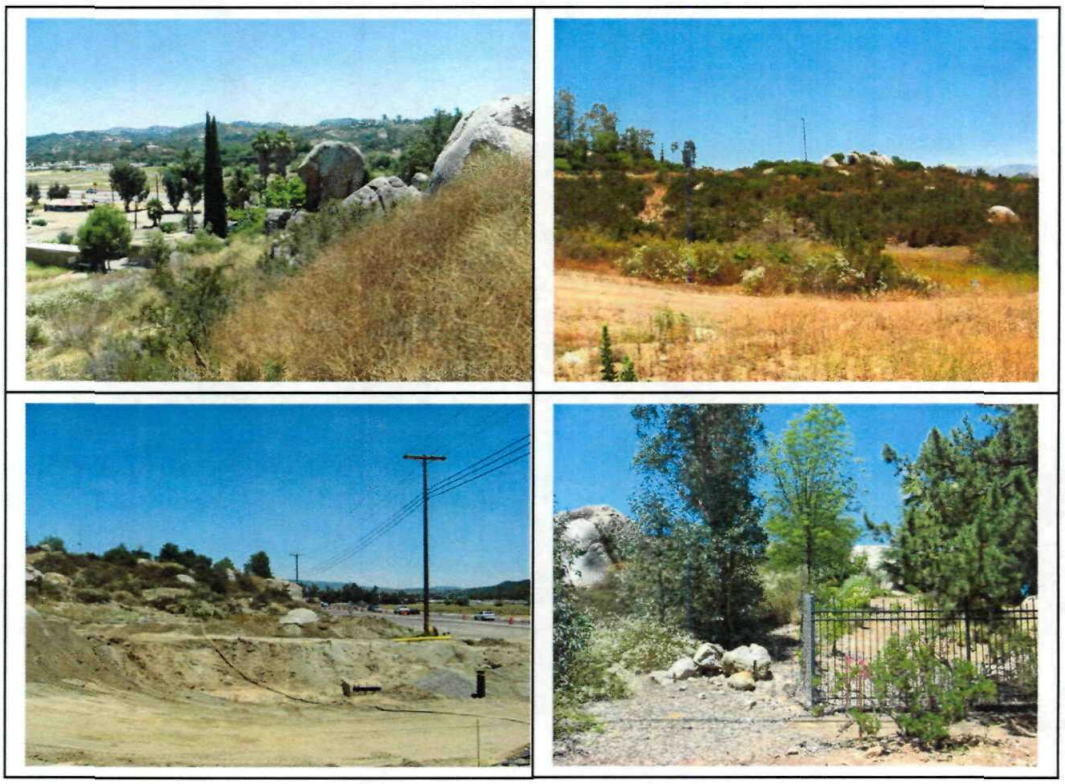
STP 08-013

MILLER ROAD PLAZA PROJECT

Fire Protection Plan
Valley Center Fire Protection District
County of San Diego
APN 188-231-29
PM 8636

November 20, 2010 Revision



Applicant: Valley Center View Properties
3936 Hortensia Street
San Diego, CA 92110

Prepared By:

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Date 11/20/10

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An International Consulting Firm
David Bacon, President

"Wildland Fire/Urban Intermix Planning"

San Diego County
Department of Planning and Land Uses
5201Ruffin Road, Suite B
San Diego, CA 92123
Attn: Kristina Jeffers, Project Manager

November 22, 2010

Dear Ms. Jeffers:

RE: Responses to Fire Protection Plan (FPP) review for the Miller Road Plaza Project by DPLU dated October 29, 2010.

Following are responses made to the correction items documented in the October 29, 2010 Fire Protection Plan Review by San Diego County.

Item 6-1 – Please revise the Fire Protection Plan to address the setback issues identified in Attachment C.

Reply: This Comment Has Been Addressed

Item 6-2 - Section 2.2.12 - Road Surface - does not reflect Valley Center and County Consolidated Fire Code requirement for 75,000 pound

Reply: FPP corrected. FPP section 4.2.10 now 4.2.4

Item 6-3 - Section 2.3 - Emergency Services - refers to an on-going Fire District study, but does not refer to a VCFPD requirement for participation in a Community Facility District which is required by Fire District ordinance. "The vicinity map supplied with the Project Location paragraph is not legible."

Reply: Inserted the need to participate in a Community Facility District

Item 6-4 - Section 4.4 includes a number of ignition-resistant construction requirements most of which are consistent with current County and State Building Code requirements 9 primarily Chapter 7A) for construction in wildland areas. Please note early in the discussion that construction must meet the then-current County Building Code requirements in effect at the time of Building Permit application. These requirements are periodically updated, and it is preferable to not offer potential confusion to the reader through conflicting requirements, and suggested to remove the comments which simply copy existing minimum requirements. The consultant, however, is encouraged to recommend fire safety

features that exceed current County Building Code requirements (which are more restrictive than current State Building Code requirements). NOTE: Features offered at sections 4.4.1 and 4.4.2 mitigate the 30 foot wildland setback requirement that is not met for building A on the east side (no correction required here).

Reply: Revised the FPP section 4.4 to include only those ignition-resistant construction requirements which exceed the currently required ignition-resistant construction requirements. Revised this section by eliminating the normal and current Consolidated Fire Code ignition-resistant construction features, which were relocated as APPENDIX 'G'.

Item 6-5 - Section 4.8 Cumulative lmpact Analysis - should include the VCFPD requirement for participation in a Community Facility District created to fund the impact of development such as this project.

Reply: Revised Section 4.8 to require participation in a Community Facility District.

Item 6.6 - APPENDIX 'F' is titled "Project Availability Facility Forms" (sic) (correctly titled Project Facility Availability Forms) but it had no content. Please provide current PFAF-Fire and PFAF-Water for the……

Reply: Corrected APPENDIX 'F' title to "Project Facility Availability Forms"

Item 6-7 - Comments on this revised FPP from Valley Center Fire Protection District have not been received. Their comments and corrections, if any, should be incorporated into a revised FPP. The VCFPD letter accepting or correcting the FPP version should be included with the re-submittal.

Reply: Contacted Valley Center Fire Protection District Fire Marshal George Lucia and have included comments provided.

Item 6-8 -
Please supply copies of the revised FPP in two formats strike out/Underline and "clean" version.

Reply: We have provided a clean and strike out/Underline version of the FPP dated November20, 2010.

Thank you, Ms. Jeffers. Please contact either me or Doug Pumphrey if you have any questions on this response letter.

David C. Bacon
DAVID C. BACON, President
***FIREWISE* 2000, Inc.**
26337 Sky Drive
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MILLER ROAD PLAZA PROJECT
Fire Protection Plan
November 20, 2010 Revision

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MILLER ROAD PLAZA PROJECT
Fire Protection Plan

Valley Center Fire Protection District
County of San Diego
APN 188-231-34
PM 8636
KIVA PROJECT: 08-009565-53

November 20, 2010 Revision

CHAPTER 1. INTRODUCTION

This Fire Protection Plan (FPP) has been prepared for the Miller Road Plaza Project. The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and to identify the measures necessary to adequately mitigate those impacts. As part of the assessment, the plan has considered the property location, topography, geology, combustible vegetation (fuel types), climatic conditions, and fire history. The plan addresses water supply, access (including secondary/emergency access where applicable), structural ignitability and fire resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. The plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect one or more-at-risk communities and essential infrastructure. The plan recommends measures that the property owner will take to reduce the probability of ignition of structures throughout the Project site.

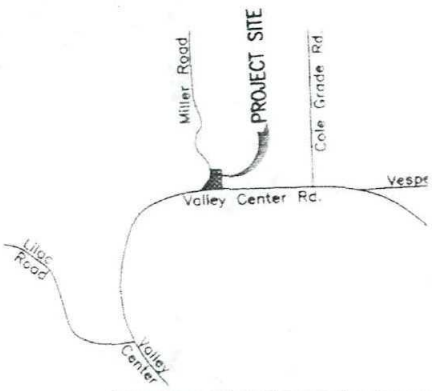


Figure 1 – Vicinity Map

1.1 Project Location, Description and Environmental Setting

1.1.1 Project Location

The Miller Road Plaza Project, Parcel Map No. 8636, is located at the corner of Miller Road and Valley Center Road (Figure 1 - Vicinity Map) within a very high fire hazard severity zone in the community of Valley Center, San Diego County, California. It is located at the intersection of two major roadways and contiguous to a real estate business on a segment of the east boundary. The lead fire protection agency is the Valley Center Fire Protection District. Prior to any land development activity for this business/commercial site, a Fuel Protection Plan must be submitted to and approved by the Fire Protection District.

Owner/Developer: Valley Center View Properties LP
3940 Hortensia Street
San Diego, CA 92110
619-523-0133

Approving Department: Valley Center Fire Protection District
Administrative Office & Fire Prevention Bureau
28234 Lilac Road
Valley Center, CA 92082

1.1.2 Project Description

This proposed project is located on a prominent sloping point of land at the corner of Miller Road and Valley Center Road (See Photo 1). Miller Road at this point has an uphill grade which

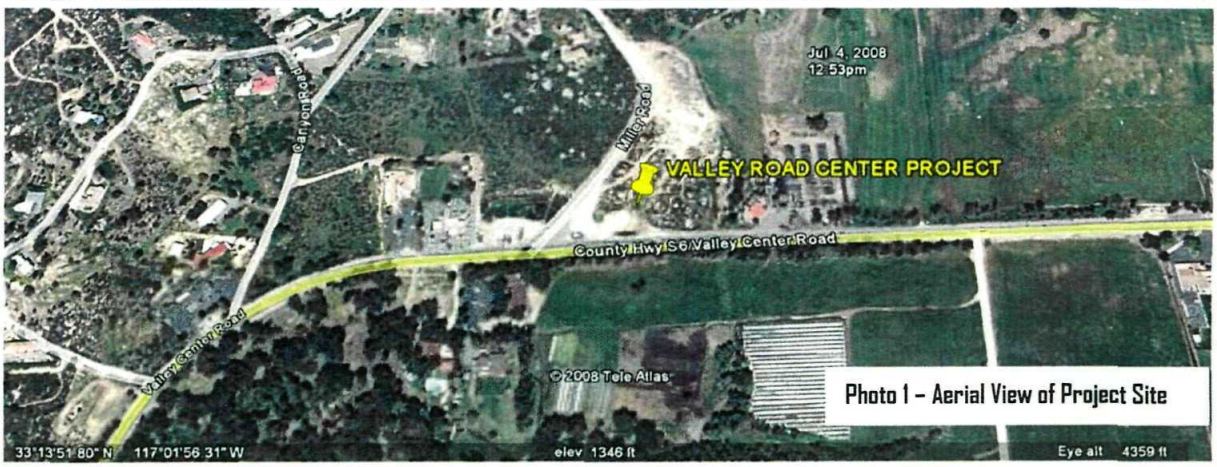
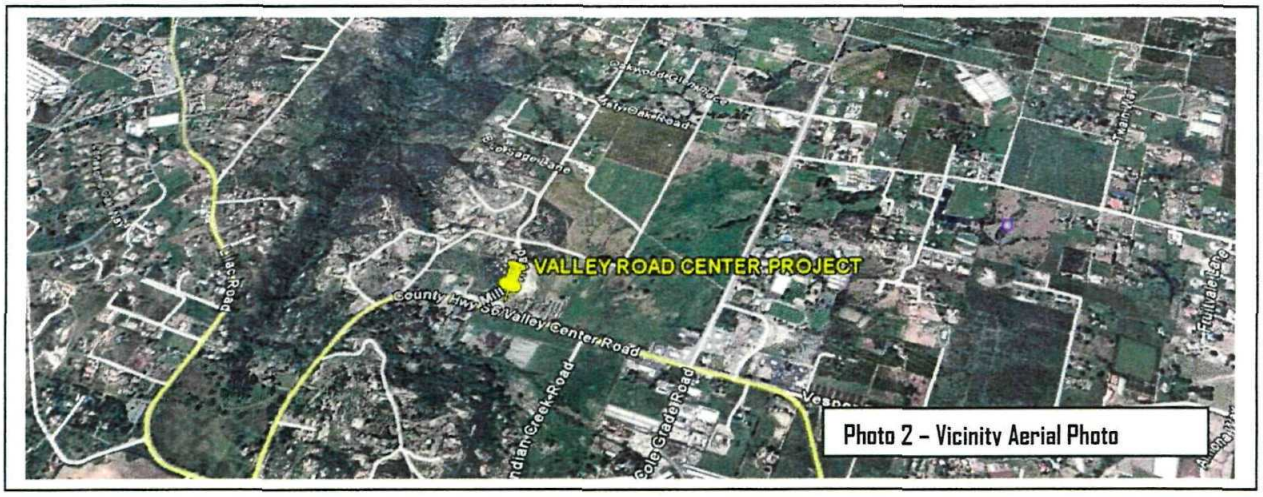


Photo 1 – Aerial View of Project Site

dissects rugged steep hillside and deep canyon areas surrounding the project site to the northwest, north and northeast. To the south and southeast of the project, the land is relatively level un-dissected agricultural land. The project consists of a convenience store, an associated gas station, two office/retail buildings (one one-story structure and one two-story structure) and associated parking areas and appurtenant uses. All landscaped areas will be privately maintained by the owner. The development site is currently undeveloped.

1.1.3 *Environmental Setting*

The Miller Road Plaza Project is surrounded by rugged terrain. Most of the terrain in the Valley Center Fire Protection District is rugged, with steep hillsides and deep canyons. This is particularly the situation with regard to the rugged terrain that runs from the northwest to the southeast in the vicinity of the project. Coastal Sage Scrub (SCAL 18) fuel model dominates the foothill landscape with inclusions of High Load, Dry Climate shrubs or Fuel Model Sh5. (See Photo 2 – Vicinity Aerial Photo).



This FPP assesses the overall (on-site and off-site) wildland fire hazards and risks that may threaten life and property associated with the proposed development. In addition, the FPP establishes both the short and long-term fuel modification actions to minimize any projected fire hazard and risk and assigns annual maintenance responsibilities for each of the recommended fuel modification actions interior to the project.

CHAPTER 2. GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

This FPP evaluates the adverse environmental effects that a proposed project may have from wildland fire and properly mitigate those impacts to ensure that development projects do not unnecessarily expose people or structures to a significant risk of loss, injury or death involving wildland fires. This section of the FPP includes the following Guidelines for the Determination of Significance:

2.1 Risk or Loss

Would the project expose people or structures to a significant risk or loss?

The Miller Road Plaza Project is located within an area classified by the Valley Center Fire Protection District as an extreme Fire Hazard Area. The major threat of a wildland fire is from the north and northwest of the project. This threat comes from adjacent open space brush land fuels and a history of severe fire weather. To the project's benefit, the western and southern boundaries abut two major roadways, and a portion of the eastern boundary abuts an existing landscaped and maintained business parcel.

2.2 Emergency Access

Would the project result in inadequate emergency access?

The primary access to the Miller Road Center Development will be via Miller Road and Valley Center road (public roadways). Access within the commercial development will be via three entrances (two from Miller Road and one from Valley Center Road).

2.2.1 Access Road Widths. All interior roadways shall comply with the Valley Center Protection District standards. A standard specific to this development includes:

- Minimum unobstructed paved width of interior "fire lanes" shall be 24 feet.

2.2.2 Specific interior roadways shall be designated "fire access roadways" or "fire lanes".

2.2.3 Emergency vehicle turnarounds shall be provided on "fire lanes" exceeding 150 feet in length.

2.2.4 All roads shall be provided with an approved paved driving surface prior to construction and/or bringing combustible building products onto each parcel.

2.2.5 Fire access roadways shall be within a 150 feet hose line pull from all portions of exterior walls of every building on the development.

2.2.6 All roads shall be provided with an approved paved driving surface prior to construction and/or bringing combustible building products onto each parcel.

2.2.7 Any gate or barrier across a fire access roadway shall have specific plans reviewed and approved prior to installation.

2.2.8 Loading zones shall not interfere with "fire lanes".

2.2.10 Road and Street Grades. The road and street grade standard for the Fire Protection District states that roadways will not exceed 20 percent and that any roadway over 15 percent shall be a concrete surface and have a deep broom finish perpendicular to the direction of travel to enhance traction.

2.2.11 Secondary Access. The entrance driveways in combination with designated and marked "fire lanes" will provide adequate secondary access.

2.2.12 Road Surface. All roadways within the development shall be all-weather paved streets capable of supporting fire apparatus weighing up to 75,000 pounds.

2.2 Emergency Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection?

The Miller Road Plaza Project is the first of its kind in this general area and will require specific mitigations to provide protection to people and structures. It is not expected, however, to cause *adverse physical impacts or the need for new or physically altered government facilities.* However, there is a requirement by VCFPD Ordinance for participation in a Community Facility District.

2.4 Water Supply

Would the project have sufficient water supplies available to serve the project form existing entitlements and resources, or are new or expanded entitlements needed? The Valley Center Water District has agreed to serve the water needs for this commercial project (See APPENDIX 'F'-Form 399A-water)

CHAPTER 3. ANTICIPATED FIRE BEHAVIOR IN THE VICINITY

The project site is located in Climate Zone 21. Climate is characterized by generally mild, (8-10 inches precipitation per year) winters, with the bulk of the annual precipitation falling between January and March, frequent periods of extended drought, and long dry and hot spring, summer and fall seasons, which dry out the native vegetation making the project's native vegetation species very flammable.

The following chart represents the typical summer, Santa Ana and Peak fire weather (climate conditions) elements for this Fire Protection Plan:

Transitional Zone	Period	**Temperature**	**Relative Humidity**	**Sustained Wind Speed**	**Burning Index (99%)**
	Summer	90-109 F	10-14%	18 mph	119
	Santa Ana	90-109 F	5-9%	24 mph	730
	Peak	90-109 F	5-9%	56 mph	730

It is reasonable to expect downslope Santa Ana winds in the range of 40-60 MPH within this portion of San Diego County. A fire burning under this wind condition and in the presently existing fuels along the north and northwest boundary of the project would burn downhill and create extreme wildland fire conditions.

The available data suggests that in the second half of the 20th century the frequency of small fires increased in southern California while their average size decreased. In San Diego County, this has resulted in an increased rate of burning in low elevation coastal scrubland, especially the coastal sage scrub formation near the urban development areas. History also indicates over 600 fires in the foothills and mountains from 1910-1999 with the recent Witch Creek and Poomacha Fires as a reminder of the destructive nature of wildfires in San Diego County's history.

Structure ignitions from wildland fire fuels basically come from two sources of heat: convective firebrands (flying embers) and radiant heat. Convective firebrands, transferred during periods of high fire intensity and strong dry winds, have the capability of being transported over long (several hundred feet and up to several miles) distances.

Convective heat will be mitigated to acceptable levels for the Miller Road Plaza Project as landscaping will be irrigated fire-resistant landscaping and all buildings will be constructed with non-combustible roofing and non-combustible or standard fire-resistive building materials, per the Valley Center Fire Protection District requirements. Due to this fact, the convective embers issue needs will be identified as the key issue in this FPP.

Fire-resistant landscape management is the act of converting native vegetative fuels from a highly flammable and high fire intensity state to a more fire resistant and low fire intensity condition. Fire-resistant landscaping has been proven to be the most effective treatment for minimizing structure losses due to wildland fire radiant heat.

A USDA-Forest Service research study called "Structure Ignition Assessment Model (SIAM)" by Jack D. Cohen, Intermountain Fire Science Laboratory, Missoula, Montana, has helped to validate how much distance is required to keep structures from igniting due to wildfire radiant heat.

The SIAM Ignition Study indications and the personal experience of ***FIREWISE 2000,*** **Inc.** helped established the fuel modification recommendations found in Section 4.0 – Analysis of Project Effects.

Comparing the expected wildland fire behavior projections of untreated vegetation (as depicted in Tables 4.5- and 4.5-3) against the proposed fire resistant irrigated landscape vegetation within the development required 100-foot wide fuel thinning zone (as depicted in Tables 4.6-2 and 4.6-4) demonstrates substantial reductions in the expected flame length and fireline intensity.

By requiring all structures to be constructed of non-combustible roofing and building materials, the implementation of a defensible space around all structures adjacent to the Fuel Model SCAL 18 fuels provides the most effective treatment for minimizing structure losses due to the projected flame lengths and associated radiant heat intensities.

Fire intensity in fuel model SCAL 18 has expected flame lengths of **44.1 feet** for a 60-MPH downslope northeast wind (Refer to Table 4.6-1). In contrast, flame lengths in treated fuels will approach **13.6 feet** during an 60-MPH northeast wind (Table 4.6-3). Therefore, fuel modifications and the planting of "*firewise*" landscaping around all structures adjacent to a Fuel Model SCAL 18 will be more than adequate, particularly along the northeastern, north, and northwestern boundaries of the development.

Fire intensity in SCAL 18 has expected flame lengths of **32.1 feet** for a 30-MPH "*rare event*" southwest wind in FM SCAL 18 (Refer to Table 3.8.4-2). In contrast, flame lengths in treated fuels will approach **12.7 feet** in length during a 30-MPH southwest wind (Table 4.6-4). Again, fuel modifications and "*firewise*" landscaping around all structures would provide adequate protection for structures during extreme wildfire conditions in the area.

CHAPTER 4. PROJECT ANALYSIS OF PROJECT EFFECTS AND MITIGATION MEASURES

4.1 Adequate Emergency Services

This commercial/business development is located within the Valley Center Fire Protection District jurisdiction. The FPD provides fire protection and emergency medical services for 84.5 square miles and serves a population of over 23,000 residents.

The VCFPD has indicated in the Project Facility Availability Form that the project is in the FPD and eligible for service. However, there is a requirement by VCFPD Ordinance for participation in a Community Facility District. The primary fire station that will serve the proposed project is Fire Station 72 located at 28234 Lilac Road, Valley Center, California.

The project site is approximately 0.9 mile from Station 72. The emergency response time (a 2-minute departure time from Station 72 plus travel time) to the proposed project is approximately four (4) minutes. VCFPD personnel confirmed that the response time meets the required standard. The development is in an extreme fire severity zone and time required will be mitigated with extensive fuel modification standards, infrastructure construction standards (roads, water supply, etc), and enhanced building standards.

4.2 Fire Access

The primary access to the Miller Road Center Development will be via Miller Road and Valley Center road (public roadways). Access within the commercial development will be via three entrances/driveways (two from Miller Road and one from Valley Center Road).

4.2.1 Access Road. All interior access roadways will comply with the Valley Center Protection District standards. Specific standards for this development includes:

4.2.1.1 Specific interior roadways will be designated "fire access roadways" or "fire lanes".

4.2.1.2 Interior roadways will be marked "fire lane".

4.2.1.3 Minimum unobstructed paved width of interior "fire lanes" will be 24 feet.

4.2.1.4 Emergency vehicle turnarounds will be provided on "fire lanes" exceeding 150 feet in length.

4.2.1.5 Fire access roadways will be within a 150 feet hose line pull from all portions of exterior walls of every building on the development.

4.2.1.6 All roads will be provided with an approved paved driving surface prior to construction and/or bringing combustible building products onto each parcel.

4.2.1.7 Any gate or barrier across a fire access roadway will have specific plans reviewed and approved prior to installation.

4.2.1.8 Loading zones will not interfere with "fire lanes".

4.2.2 Road and Street Grades. The road and street grade standard for the Fire Protection District states that roadways will not exceed 20 percent and that any roadway over 15 percent shall be a concrete surface and have a deep broom finish perpendicular to the direction of travel to enhance traction.

4.2.3 Secondary Access. The entrance driveways in combination with designated and marked "fire lanes" will provide adequate secondary access.

4.2.4 Road Surface. All roadways within the development will be all-weather paved streets capable of supporting fire apparatus weighing up to 75,000 pounds.

4.3 Water Supply

As previously stated on page 4, the Valley Center Water District has agreed to serve the water needs for this commercial project. Water supply will meet the water supply requirements of the FPD and the County of San Diego Building Code for a commercial/business development. Specific requirements will include:

4.3.1 Hydrants, mains and water pressures will be designed to comply with Valley Center Fire Protection District Code requirements, including construction of bronze.

4.3.2 An approved fire hydrant/water supply system will be capable of supplying 2500 gallons per minute fire flow for 2 hours (California Fire Code). Waterlines for fire control must be

capable of supplying this required demand through the hydrants, plus the largest fire sprinkler demand, plus any domestic use supplied from that line.

4.3.3 When an on-site waterline serves more than two hydrants, the line must be looped, providing two hydraulically remote points of connection with the water district lines. The interior loop must have isolation valving, such that not more than two hydrants and/or sprinkler systems are between isolation points.

4.3.4 Hydrants will be located along "fire lanes" and will not be further than 150 feet from each structure or as approved by the Fire Chief.

4.3.5 Each hydrant will have the number and size of outlets as follows:

4.3.5.1 One 4-inch and one 2-1/2 inch outlet (4", 2-1/2").
4.3.5.2 One 4-inch and two 2-1/2 inch outlets (4", 2-1/2", 2-1/2").

4.3.6 VCFPD approval will be required for on-site hydrant and fire service waterline based on the final building construction type and largest building size.

4.3.7 Fire hydrants will be located with blue reflective raised pavement markers at approved locations for each hydrant.

4.3.8 All buildings will be fully protected with automatic fire sprinkler system meeting County Building Code and the California Building Standards Code. All valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures and water-flow switches on all sprinkler systems shall be electronically supervised.

4.4 Ignition Resistant Construction and Fire Protection Systems

Construction requirements must meet all the current County Building Code and State of California Building Codes (Chapter 7A) requirements.for construction in wildland areas. Ignition-resistant building requirements found in the County Building Code (more restrictive than the California Building Code) will significantly reduce the threat of wildfire for this development, especially the flying embers entering a structure, landing on a receptive fuel and starting a new fire.

4.4.1 Existing minimum requirements for exterior walls of buildings will be constructed with one-hour fire resistant building materials and protected with two-inch nominal solid blocking between rafters at all roof overhangs and under the exterior wall covering (In accordance with SFM 12-7A-1). An exception recommended to exceed the current County Code will be for the exterior wall on building "A" adjacent to the property line on the east side, will utilize alternative methods and materials to mitigate the 30-foot setback required in Title 14 sectiion 1275.01 for State Responsibilitiy Areas. These mitigations include 1) increased fire rating by installing non-combustible sheathing nailed to the framing and with non-combustible cladding/exterior cover, and 2) automatic sprinkler heads installed on this exterior wall of the building. The site plan also includes construction of a masonary retaining wall along this eastern property line which will further mitigate the setback requirement.

4.4.2 An overall requirement for the eastern exterior wall on Building "A" will be to exclude openings. A requirement for the eastern exterior wall on building "A" would be to exceed the current County Building Code requirements for vent opening(s). Vent openings will

not be included in this wall unless vent opening coverings exceed the County Building Code requirements (for example, use of vents produced by Valken, Brandguard, etc.).

In order to maintain the function of Building "A", there is one window required in the eastern exterior wall (a drive-up type window). This window will be constructed to meet the current County Building Code, which requires that all windows in a wildland area must be tempered glass.

4.4.10 Fire Protection Equipment (e.g., extinguishers): Portable fire extinguishers are required for the proposed buildings (office buildings, convenience store) and shall be mounted on walls near exits with appropriate signage.

4.5 Fire Fuel Assessment

The Miller Road Plaza Project is currently vacant land, generally within a sloping rugged topography that runs from the northwest to the southeast. On-site topography ranges from nearly level to 30 percent slopes with native and non-native vegetation.

There are interspersed homes throughout this area, including the more rugged areas to the northwest and southwest of the project site. These homes and their requirement to meet fuel modification requirements do provide required fuel modifications and lowering of fire threat. This does lower the fire threat and risk to the proposed business and commercial site. It should also be noted that the two major highways on the western and southern boundary to the proposed development site provide significant fire protection during an extreme northeast Santa Ana wind and strong non-typical prevailing winds from the south and southwest during late season. The fuels in the open space to the northeast (developable in the future) are lighter fuels, but do align with the proposed development. There is an existing plant nursery business with very good landscaping that abuts the southeast boundary of the proposed development.

However, if this project site was left undeveloped and without any fire hazard abatement, the off-site and on-site vegetation would increase in fuel loading and become what would be classified as a Southern California (SCAL 18 – Sage/Buckwheat) fuel model. An extreme fire threat would occur during unusually hot dry conditions, with Santa Ana wind conditions, and/or with any winds out of the northeast potentially gusting up to 60 MPH. In this fuel model scenario, the wildland fire behavior would be expected to produce ***44.1 foot flame lengths*** and a rate-of-spread of ***294 feet per minute.***

The Poomacha Fire of 2007 is a recent wildfire that illustrated the disaster a fire can produce with extreme weather and wind conditions. Photos 1 and 2 illustrate this landscape and existing vegetation.

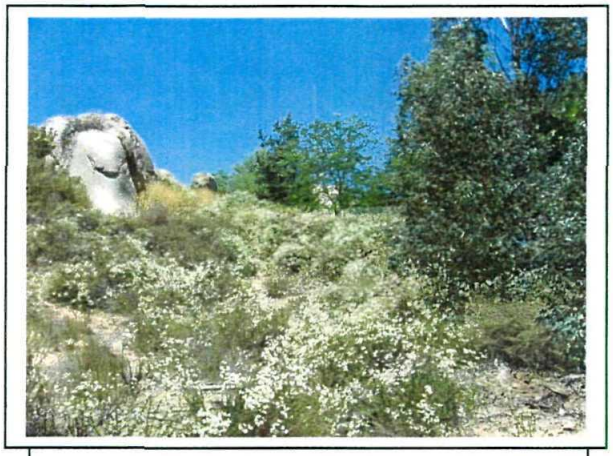


Photo 3: Northwest View from Valley Center Road

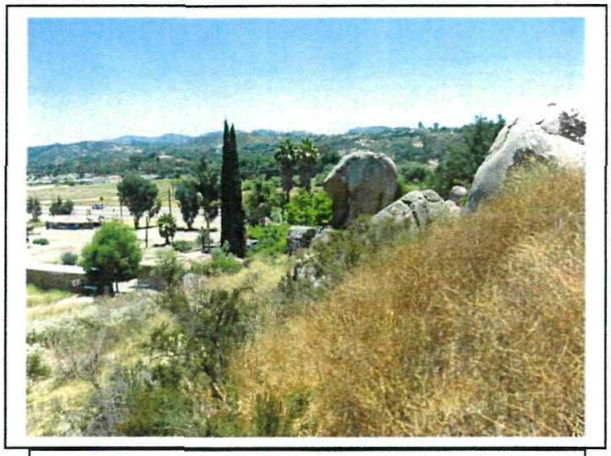


Photo 4: Southeast View from Approximate center of the property

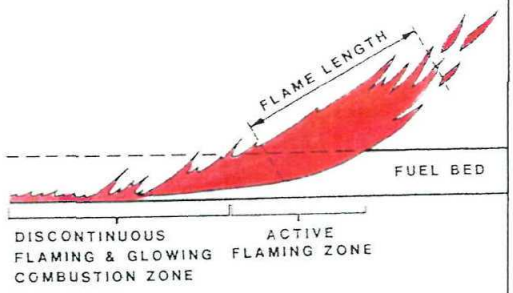
When placing a business/commercial development interspersed with highly flammable native and exotic vegetative fuels, the goal of this FPP is to minimize any potential loss of life, homes or personal property due to a wildland fire. Structure loss will and can be minimized by applying the following ***FIREWISE* 2000, Inc.** concepts of:

- Requiring a Class A roof covering assembly including a Class A roof covering on all portions of the structures.
- Placing fire resistant (1-hour) building materials on all wall surfaces that are less than 100 feet from and face highly flammable vegetation.
- Working with the developer/designer to incorporate "fire resistive building features" in each structure and the placement of each structure within the development to minimize any threat from wildland fire.
- Planting and maintaining landscape plantings based on the San Diego County and VCFPD Approved Plant List (See APPENDIX 'A').
- Implementing and maintaining an irrigated 100-foot wide Irrigated Zone 1 (low fuel volume/defensible space) around all structures. Additionally, ensure that dead and dying vegetation are removed and/or pruned to defensible criteria. Pruned and mowed vegetation can be either cut and removed or chipped and spread evenly on the ground to reduce weed growth, conserve water and protect the soil from erosion. The depth of the spread chips shall not exceed four (4) inches.
- Installing a commercial fire sprinkler system.

4.6 Fire Behavior Modeling

The minute by minute movement of a wildland fire is never totally predictable, and is certainly not predictable from weather conditions forecast many hours before the fire. Nevertheless, practice and experienced judgment in assessing the fire environment, coupled with a systematic method of calculating fire behavior, yields suprisingly good results (Rothermel, 1983).

The primary driving force in the fire behavior calculations is the dead fuel, less than one-fourth inch in diameter; these are the fine fuels that carry the fire. Fuels larger than 1/4-inch contribute to fire intensity, but not necessarily to fire spread. The BEHAVEPLUS 3.0 fire model describes a wildfire spreading through surface fuels, which are the burnable materials within six (6') feet of the ground and contiguous to the ground. Regardless of the limitations expressed, experienced wildland fire managers can use the BEHAVEPLUS 3.0 modeling system to project the expected fire intensity (expressed as Btu/ft/sec), rate-of-spread (feet/minute) and flame lengths (feet) with a reasonable degree of certainty for use in fire protection planning purposes. Of these three fire behavior projections, flame length is the most critical in determining structure protection requirements.



↑ **Figure 1: Description of Flame Length (Expressed in Feet)**

The BEHAVEPLUS 3.0.1 Fre Behavior Prediction and Fuel Modeling System by Patricia L. Andrews and Collin D. Bevins, is one of the best systematic methods for predicting wildland fire behavior. The BEHAVE PLUS 3.0.1 fire behavior computer modeling system was developed by USDA–Forest Service research scientists at the Intermountain Forest Fire Laboratory, Missoula, Montana, and is utilized by wildland fire experts nationwide. "Because the model was designed to predict the spread of a fire, the fire model describes the fire behavior only within the flaming front".

Wildland fire behavior calculations have been projected for the hazardous vegetative fuels on the undeveloped sites adjacent to, immediately bordering and within the proposed Miller Road Plaza Project. These projections were based on the following above-average Valley Center area fire weather condition assumptions:

Scenario #1 & 2: North, Northeast and East Wind Condition Fuel Moisture Assumptions. (60-MPH Santa Ana Wind Condition). ***This type event often occurs two or three times a year***.

- 1-Hour Fine Fuel Moisture of 2%
- 10-Hour Fuel Moisture of.....3%
- 100-Hour Fuel Moisture of.....5%
- Live Herbaceous Fuel Moisture of.....30%
- Live Fuel Moisture of.....50%

Scenario #3 & 4: Southwest and West Wind Condition Fuel Moisture Assumptions. Late fire season strong non-typical (30-MPH) southwest wind pattern. ***This is a rare event, causing the following fuel moisture conditions; occurs only one or two times in a ten year period frequency cycle***.

- 1-Hour Fine Fuel Moisture of 2%
- 10-Hour Fuel Moisture of.....3%
- 100-Hour Fuel Moisture of.....5%
- Live Herbaceous Fuel Moisture of.....30%
- Live Fuel Moisture of.....50%

Behavior Summary. The following Tables summarize the expected wildland fire behavior for the key National Standard Fuel Models found within and adjacent to the proposed business/commercial development under the worst case scenarios.

Tables 4.5-1 through Table 4.5-4 display the expected Rate of Fire Spread (expressed in feet per minute), Fireline Intensity (Btu/ft/sec) and Flame length (feet) for four different BEHAVEPLUS - Fire Behavior Prediction and Fuel Modeling System fuel model computer calculations. All of these calculations are based on forecast vegetation conditions of a typical Fuel Model SCAL 18 - Coastal Sage Scrub. Variables were slope, projected wind speed, and the anticipated weather.

Table 4.5-1 (Scenario #1 Weather Conditions) **Expected Fire Behavior along the north and northeast with 60-MPH Gusting Northeast Wind (Santa Ana) in a Fuel Model SCAL 18.**	
Rate of Spread	**294 feet/minute**
Fireline Intensity	**21329 BTU's/foot/second**
Flame Length	**44.1 feet in length**
Additional Fire Behavior Calculation Input: • **30 percent downhill slope** • **60 mph 20-foot wind speed (24 mph mid-flame wind speed)** • **190° direction of wind vector to North slope**	

Treated - Table 4.5-2 (Scenario #2 Weather Conditions) **Expected Fire Behavior with an 60-MPH Northeast Santa Ana Wind Along the Northern and Northeastern Perimeter. The Fuel Model After Treatment would Closely Resemble Fire Behavior of a Fuel Model 1 (50%) – Grass and Fuel Model 9 (50%) - Tall Shrubs.**	
Rate of Spread	**467 feet/minute**
Fireline Intensity	**1641 BTU's/foot/second**
Flame Length	**13.6 feet in length**
Additional Fire Behavior Calculation Input: • **30 percent downhill slope** • **60 mph 20-foot wind speed (24 mph mid-flame wind speed)** • **190° direction of wind vector to North**	
Comments: Expected fire intensity and flame length will be considerably less than the above calculations due to the 50% thinning of the native vegetation and complete removal of all highly flammable species.	

Table 4.5-3 (Scenario #3 Weather Conditions) Expected Fire Behavior Along the Southwestern Perimeter in a "*Rare Event*" 30 MPH Southwest Wind in SCAL 18 Fuel Model in the Summer or Early Fall.	
Rate of Spread	147 feet/minute
Fireline Intensity	10695 BTU's/foot/second
Flame Length	32.1 feet in length
Additional Fire Behavior Calculation Input: • 30 percent uphill slope • 30 mph 20-foot wind speed (12 mph mid-flame wind speed) • 45° direction of wind vector to North slope	

Treated - Table 4.5-4 (Scenario #4 Weather Conditions) Expected Fire Behavior for a Wildland Fire Burning During a 30-MPH South or Southwest Wind. Fire Behavior (Once Implemented and Maintained) Would Closely Resemble the Fire Behavior of a Fuel Model 1 (50%)- Grass and Fuel Model 9 (50%) - Tall Shrubs.	
Rate of Spread	396 feet/minute
Fireline Intensity	1415 BTU's/foot/second
Flame Length	12.7 feet in length
Additional Fire Behavior Calculation Input: • 30 percent uphill slope • 30 mph 20-foot wind speed (12 mph mid-flame wind speed) • 45° direction of wind vector to North	
Comments: Expected fire intensity and flame length will be considerably less than the above calculations due to the thinning of the native vegetation and complete removal of all highly flammable species.	

4.7 Defensible Space and Vegetation Management

The VCFPD has classified the entire Valley Center area as an extreme fire hazard area. The major threat of a wildland fire for the Miller Road Plaza Project is from the north and northwest. Coastal Sage Scrub (SCAL 18) fuel model dominates this transition zone landscape with inclusions of High Load, Dry Climate shrubs or Fuel Model Sh5. As stated on page 3, the western and southern boundary abuts two major roadways, and a portion of the eastern boundary abuts an existing well landscaped and maintained business parcel. The fuel loads in northeastern corner of the development are lighter fuels with surrounding agricultural areas, but the project is in line with the extreme northeast (Santa Ana) winds.

Fuel Model SCAL 18 would include hard woody shrubs such as scrub oak (*Quercus berberidifolia*), chamise (*Adenostoma fasciculatum*), Ramona Lilac (*Ceanothus tomentosus*) Cupleaf Ceanothus (*Deanothus greggii* ssp. *perplexans*) and Sugarbush (*Rhus ovata*). Also present are various soft-woody shrubs including California Sagebrush (*Artemisia californica*), Laurel Sumac (*Malosma laurina*), San Diego Monkey flower (*Diplacus aurantiacus*), and Our

Lord's Candle (*Yucca whipplei*). The disturbed and barren areas often contain ripgut brome (*Bromus diandrus*), Perennial Mustard (*Brassica geniculata*) and others.

Structure ignitions from wildland fire fuels basically come from two sources of heat: convective firebrands (flying embers) and radiant heat. Convective firebrands, transferred during periods of high fire intensity and strong dry winds, have the capability of being transported over long (several hundred feet and up to several miles) distances.

Fire-resistant landscape management is the act of converting native vegetative fuels from a highly flammable and high fire intensity state to a more fire resistant and low fire intensity condition. Fire-resistant landscaping has been proven to be the most effective treatment for minimizing structure losses due to wildland fire radiant heat.

There are three principal factors responsible for structure ignitions:

- Flame radiation
- Flame impingement – convection
- Firebrands (convective embers)

Radiation and convection – These involve the transfer of heat directly from the flame. Unlike radiation heat transfer, convection requires that the flames contact the structure. Firebrands involve the aerial transport of burning materials to a combustible fuel receptacle (structure, roofing, open vents, etc.) from vegetation or other burning materials. Ignitions from radiation (given an exposed flammable surface) from radiation heat transfer depends on two aspects of the flame: 1) the radiant heat flux to a combustible surface, and the duration (length of time) of the radiant flux. The radiant heat flux depends on the flame zone size, flame-structure distance and how much the combustible material of the structure is exposed to the flame. Fire agencies consider vegetation management as a principal approach to wildland fire hazard reduction. Whenever the flame length, one-to-two minutes in duration or more, is equal to or more than the separation of combustible vegetation column, ignition of the vegetation column may occur. However, the temperature of the column's gasses are generally not as hot or long enough in duration to sustain the ignition of the structure.

Firebrands – Firebrands are pieces of burning materials that detach from a burning fuel due to the strong convection drafts in the burning zone. Firebrands can be carried a long distance (one mile or more) by fire drafts or strong winds. Severe wildland/urban interface fires can produce heavy showers of firebrands. The chance of firebrands igniting a structure will depend on the size of the firebrand, how long it burns after contact, and the type of building materials, building design and construction sources for structure ignition. They can also enter a structure through unscreened vents, decks and chimneys, non-metal skylights and other overhangs. Even with non-combustible roofing, firebrands landing on leaves, needles, and other combustibles located on a roof (due to lack of maintenance) can cause structure ignition. Any open windows, doors or other type of unscreened openings are sources for embers to enter a structure during a wildland fire.

A key concern for the Miller Road Center development is convective embers from a wildfire burning in extreme conditions in the off-site fuels to the northwest of the development. This is the reason that the use of irrigated fire-resistant landscaping and the use of ignition resistive construction materials, fire protection systems and fire protection equipment will be prescribed for this development.

Defensible Space - Below are the descriptions of the required fuel modification treatments for structures and facilities within this business/commercial project. To further mitigate wildfire

impacts, the owner shall prune any trees and shrubs that are established in common areas free of all deadwood, remove the tree canopy that overtops any portion of a structure and thin the canopy to maintain the vegetation to ANSI A300-1995 – Standard For Tree Care Operations, Tree, Shrub, and Other Woody Plant Maintenance. By maintaining the vegetation to this standard, improved health and vigor will be obtained while enhancing fire resistance. Sidewalks, concrete patios, decorative rock, natural boulders on-site, and similar landscape features may be included as features will not support fire.

The California Fire Code requires that a minimum of 100 feet of fuel modification be constructed and maintained around all structures in a development such as the Miller Road Center. For this project, this will be implemented by defining two zones within this 100 feet. Zone 1 will be defined as the perimeter of the development and at least 50 feet of fuel modification beyond any structure, particularly around the office/retail structure in the northeast corner. An exception will be the manufactured slope in the north and northeast corner of the development. Zone 1 will be planted and maintained with fire-resistant landscaping (See Fire Protection Plan Map). Zone 1 is often called the "defensible space" around structures.

Zone 2 is the area 50 feet beyond Zone 1 where the fuel volume of native vegetation will be thinned by 50 percent or removed and re-planted with the same canopy coverage (50 percent) with fire resistive "*firewise*" landscaping. See APPENDIX 'A' - Customized Acceptable Plant List for listing of desirable plant materials for a *"firewise"* landscape. It will also include the removal of undesirable species (See APPENDIX 'B'). There will be permanent markers on the ground delineating the perimeter of the 100 feet of fuel modification for this project.

The plot plan indicates that there will be manufactured slope on adjacent land private land. The owner will be responsible for acquiring and recording with the County an easement with the adjacent landowner to accomodate this grading plan.

Following are the two fuel modification zones defined in this Fire Protection Plan:

4.7.1 Fuel Modification Zone 1 - Irrigated.

4.7.1.1 This zone will be irrigated (micro-irrigation acceptable when overhead irrigation may cause erosion). It includes the manufactured slope on the northern and northeastern boundary. Landscaping material from the approved plant list (See APPENDIX 'A') required or as approved by the Fire Marshal.

4.7.1.2 All undesirable non-native vegetation (See APPENDIX 'B') will be removed. Re-planting will be with drought tolerant, fire resistive fire-resistant landscaping.

4.7.1.3 Vegetation may include single or cluster of trimmed fire resistant native and ornamental plants (oaks, sumac, toyon, or See APPENDIX 'A')

4.7.1.4 Dense plant masses adjacent to the structures and at bases of trees and tree clusters will not be placed in this zone. Provide low growing, fire resistive, deep rooted, drought tolerant planting to maintain erosion control and soil stability, especially on manufactured slopes.

4.7.1.5 Native or ornamental trees retained within fuel modification zones will be pruned to *maintain a vertical separation of approximately ten (10) feet above underlying* shrubs or groundcover. Pruning of the shrubs will minimize the impact of the tree pruning.

4.7.1.6 Trees and large shrubs over 15 feet in height (oaks, sumac, toyon, etc.) pruned to provide clearance between plants of three (3) times the height of understory plants, or 10 feet, whichever is greater.

4.7.1.7 Large continuous masses of shrubs and understory less than 15 feet in height will be thinned to remove fuel and provide at least ten (10) feet between shrub masses, or individual shrubs. Thinning will reduce the overall canopy coverage of the area a minimum of fifty (50) percent.

4.7.1.8 If shrubs are located underneath a tree's drip line, the lowest branch shall be a least three times as high as the under story shrubs or 10 feet, whichever is greater.

4.7.1.9 Trees may be planted and/or maintained as individual specimens, or clustered with no more than three (3) trees in a single cluster with a minimum distance between mature canopies of 20 feet; avoid planting trees directly uphill of one another.

4.7.1.10 Tree canopies will not be allowed to overhang the roof of any structure; the outer edge of the canopies of mature trees will be a minimum of ten (10) feet from the building eaves, and free of all dead or dying parts. All the dead material must be pruned out of all vegetation on an as needed basis.

4.7.1.11 Mature heights of new shrub plantings will be a maximum of 36 inches.

4.7.1.12 Mulches, chips and other small multi-cuttings (cut to less than two inches in diameter and four inches in length) shall be evenly spread over the area no more than 4 inches at least 50 feet from structures. This can be used to maintain soil moisture and prevent grass and weed encroachments within the treated areas. Regular maintenance, vegetation pruning, and continued irrigation are most important in this Zone.

4.7.1.13 Firewood or other combustible materials will not be stored in unenclosed spaces beneath buildings or structures, or on decks or under eaves, canopies or other projections or overhangs. Storage may occur in the defensible space located a minimum of 20 feet from structures and separated from the crown of trees by a minimum of 10 feet, measured horizontally.

4.7.1.14 Certain ornamental plants shall not be planted or allowed to become established within the zone unless otherwise noted in the recommended Plant List in APPENDIX 'A' or as approved by the Fire Marshal.

4.7.1.15 As the native vegetation cover in Zone 1 is reduced, there is a very high probability that the openings will be dominated with non-native weed or grass species. Therefore, all grasses and weeds are to be mowed or weed-whipped to a four (4) inch stubble height by June 1st of each year or when the fuels become cured, whichever occurs first. Any vegetation biomass (debris and trimmings) produced by thinning and pruning shall be removed from the site or converted to mulch by chipping and evenly distributed to a maximum depth of four (4) inches.

4.7.1.16 Plants in this zone will not include any pyrophytes that are high in oils and resins, such as: pines, eucalyptus, cedar and juniper species. Trees must be planted so that when they reach maturity their branches are at least 10-feet away from any structure. Refer to APPENDIX "B" for a list of undesirable plantings.

4.7.1.17 Thick succulent or leathery leaf plant species are the most fire resistant, while paper-thin leaves and small twiggy branches are the least fire resistant.

4.7.1.18 If water for irrigation is limited, use more of the available water in Zone 1 than In Zone 2. Plants with high moisture content are less likely to burn. Non-flammable patios, walkways, rock, driveways and gravel can be used to break up fuel continuity within this zone.

4.7.2 Fuel Modification Zone 2 – Non-Irrigated. Zone 2 is the area 50 to 100 feet (or more) away from any structure. It is irrigated, but only if needed to establish and maintain "*firewise*" landscaping. Trimmed material can be cut or chipped and scattered as mulch to reduce the threat of erosion and restrict the growth of herbaceous and grass vegetation. Fire-resistant landscaping criteria are important in this zone.

4.7.2.1 Zone 2 is the area 50 to 100 feet from structures where the fuel volume will be removed or thinned by 50 percent, including the removal of undesirable species (See APPENDIX 'B').

4.7.2.2 Zone 2 may include single or small clusters of trimmed fire resistant ornamental and/or native plants up to 48 inches in height and trimmed ornamental and native trees limbed up to 6 feet from the ground.

4.7.2.3 If less than 100 feet is available for combined Fuel Modification Zones 1 and 2 between a structure and project boundary, see Section 4.2 Ignition Resistant Construction and Fire Systems.

4.7.2.4 This zone shall only include single or small clusters of trimmed fire resistant native and ornamental plants, up to 48 inches in height, and trimmed native or ornamental trees limbed up six feet (or 1/3 the height of the tree), whichever is the greatest.

4.7.2.5 Selected "*firewise*" plant clusters must be separated by at least 1 ½ times the fully developed height of the retained plants.

4.7.2.6 All of the dead material must be pruned out on an as needed basis, but at least annually each spring.

4.7.2.7 As the native vegetation in Zone 2 removed or reduced, there is a high probability that the openings will be dominated with non-native weed or grass species. Therefore, all grasses and weeds will be mowed or weed-whipped to a four (4) inch stubble height by June 15th of each year or when the fuels become cured, whichever occurs first. Any vegetative biomass (debris and trimmings) produced by thinning and pruning shall be removed from the site or converted to mulch by chipping and evenly distributed to a maximum depth of four (4) inches. This mulching concept helps to maintain soil moisture for the designated plants, reduces the growth of annual grass and minimizes soil erosion.

Fire Behavior Summary. ***FIRE*WISE 2000, Inc.** used the computer based BEHAVE Fire Behavior Prediction Model 3.01 to make four (4) fire behavior assessments for this development. Two of these were for potential natural fuel conditions and two for the recommended fuel treatments. The above referenced Tables 4.5-1 through 4.5-4 summarize

the results of the Fire Fuel Assessment (Fire Model) expected wildland fire behavior for the key National Standard Fuel Models found within and adjacent to the proposed development under the worst case scenarios.

SUMMARY FIRE BEHAVIOR TABLE

TABLE 4.5-1 – 60-mph Northeast Wind

Prior to Fuel Treatment		
Rate of Spread	294 Ft/min	
Fireline Intensity	21329 BTU/ft/sec	VS.
Flame Length	44.1 Feet	

TABLE 4.5-2 - 60-mph Northeast Wind

After Fuel Treatment	
Rate of Spread	467 Ft/min
Fireline Intensity	1641 BTU/ft/sec
Flame Length	13.6 Feet

TABLE 4.5-3 – 30-mph Southwest Wind

Prior to Fuel Treatment		
Rate of Spread	147 Ft/min	
Fireline Intensity	10695 BTU/ft/sec	VS.
Flame Length	32.1 Feet	

TABLE 4.5-4 – 30-mph Southwest Wind

After Fuel Treatment	
Rate of Spread	396 Ft/min
Fireline Intensity	1415 BTU/ft/sec
Flame Length	12.7 Feet

4.8 Cumulative Impact Analysis

The combination of San Diego County's weather, fuel, and terrain has often contributed to intense, uncontrolled wildland fires. This was clearly evident in the devastating Cedar, Paradise and Otay fires of October 2003, and the Witch Creek and Poomacha Fires of 2007 which were devastating in the local Valley Center area. The areas of greatest concern are adjacent to urbanized areas or where residences are intermixed with wildlands.

The following identifies how this business/commercial development would contribute to the impact of this site and this general area. It is key that the following mitigation measures for this development proposal (e.g., project compliance with codes/standards) are enforced.

4.8.1 With the attraction of this commercial development for gas, food and business, it could impact emergency services. It is not anticipated, however, that significant impact will occur with the implementation and maintenance of the emergency access mitigation measures that are outlined in the plan. However, there shall be a requirement by a VCFPD Ordinance for participation in a Community Facility District.

4.8.2 This business/commercial development will draw and attract people to the site for gas, food and other business purposes and could slightly increase the risk of property loss, injury or death within the interface with wildlands. With the defensible space provided around all structures with fuels modification, ignition resistant construction, and fire protection systems, the impact will not be significant.

4.8.3 This commercial development may be viewed as setting a precedent for commercial development in the area, but it in itself will not significantly impact the emergency services for the area.

4.8.4 Typically, the areas of greatest concern are adjacent to urbanized areas or where residences are intermixed with wildlands. As the population of San Diego County increases and the Wildland Urban Interface (WUI) expands, fire hazards and risks will continue to be encountered. The approval of this proposal and future development proposals will increase the concern of wildland wildfire as the area becomes more urbanized. At present, the density of development on this property in San Diego County

is low and includes properties compliant with the fuel modification and weed abatement requirements of the County of San Diego and the VCFPD.

Due to the severity of impacts from the improper management of wildland areas, the existing laws are stringent and regulate all aspects of wildland fire including building standards, fuel modification, water availability/flow, and access. This fire protection plan prepared for the Miller Road Plaza Project demonstrates compliance with the applicable regulations. It will ensure adequate compliance with codes/regulations and significance standards, including required fuel modifications and construction with fire resistive materials. In addition, it will be done by incorporating this Fire Protection Plan by reference into the final project Conditions of Approval.

CHAPTER 5. FUEL TREATMENT LOCATION MAP (Attached)

APPENDIX 'A'

COUNTY OF SAN DIEGO
ACCEPTABLE PLANTS FOR DEFENSIBLE SPACE IN FIRE PRONE AREAS

ALL NATIVE PLANTS ON THE FOLLOWING LIST are considered to be drought-tolerant in the particular climate zone they are found. Those that grow best in riparian areas, as indicated by the "R", are generally 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:

Defensible 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.

***FIRE WISE* 2000, Inc. Note:** The plant list which follows was developed using the plants found on the San Diego County approved plant list. This list was then compared to those plants which are suitable for the climatic zone in which the project is located. Only those plants suitable for the project area listed below. The list is therefore shorter than that provided by the County. By providing this custom list, plants that are likely to be killed or seriously damaged by frost or will not perform in hot dry conditions have been eliminated. ***FIRE WISE* 2000, Inc.** believes that the planting of species suited to the site is essential to fire management goals and is a environmentally sound practice.

San Diego County
Customized Acceptable Plant List
For The Miller Road Project

No.	Type	Genus	Species	Common Name
1	Annual	Lupinus spp.	nanus	Lupine
2	Groundcover	Achillea	millefolium	Yarrow
3	Groundcover	Arctostaphylos spp.		Manzanita
4	Groundcover	Cerastium	tomentosum	Snow-in-Summer
5	Groundcover	*Coprosma*	*kirkii*	*Creeping Coprosma*
6	Groundcover	Cotoneaster spp.		Redberry
7	Groundcover	Drosanthemum	hispidum	Rosea Ice Plant
8	Groundcover	Dudleya	pulverulenta	Chalk Dudleya
9	Groundcover	Dudleya	virens	Island Live-Forever
10	Groundcover	Eschscholzia	californica	California Poppy
11	Groundcover	Ferocactus	viridescens	Coast Barrel Cactus
12	Groundcover	Gaillardia	grandiflora	Blanket Flower
13	Groundcover	Gazania spp.		Gazania
14	Groundcover	Helianthemum spp.		Sunrose
15	Groundcover	Lantana spp.		Lantana
16	Groundcover	Lasthenia	californica	Common Goldfields
17	Groundcover	Lasthenia	glabrata	Coastal Goldfields
18	Groundcover	Lupinus spp.		Lupine
19	Groundcover	Myoporum spp.		Myoporum
20	Groundcover	Pyracantha spp.		Firethorn
21	*Groundcover*	*Rosmarinus*	*officinalis*	*Rosemary*
22	Groundcover	Santolina	chamaecyparissus	Lavender Cotton
23	Groundcover	Trifolium	frageriferum	O'Connor's Legume
24	Groundcover	Verbena	rigida	Verbena
25	Groundcover	Viguiera	laciniata	San Diego Sunflower
26	Groundcover	Vinca	major	Periwinkle
27	Groundcover	Vinca	minor	Dwarf Periwinkle
28	Perennial	Coreopsis	gigantea	Giant Coreopsis
29	Perennial	Coreopsis	grandiflora	Coreopsis
30	Perennial	Coreopsis	maritima	Sea Dahlia
31	Perennial	Coreopsis	verticillata	Coreopsis
32	Perennial	Heuchera	maxima	Island Coral Bells
33	Perennial	Iris	douglasiana	Douglas Iris
34	Perennial	Kniphofia	uvaria	Red-Hot Poker
35	Perennial	Lavandula spp.		Lavender
36	Perennial	Penstemon spp.		Penstemon
37	*Perennial*	*Satureja*	*douglasii*	*Yerba Buena*
38	Perennial	Sisyrinchium	bellum	Blue-Eyed Grass
39	Perennial	Sisyrinchium	californicum	Golden-Eyed Grass
40	Perennial	Solanum	xantii	Purple Nightshade
41	Perennial	Zauschneria	'Catalina' ?	Catalina Fuschia
42	Perennial	Zauschneria	californica	California Fuschia
43	Perennial	Zauschneria	cana	Hoary California Fuschia
44	Shrub	Agave	americana	Desert Century Plant
45	Shrub	Agave	Amorpha fruticosa	False Indigobush
46	Shrub	Agave	deserti	Shaw's Century Plant
47	Shrub	Agave	shawii	NCN

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No.	Type	Genus	Species	Common Name
48	Shrub	Agave		Century Plant
49	Shrub	Arbutus	menziesii	Madrone
50	Shrub	Arctostaphylos spp.		Manzanita
51	Shrub	Atriplex	canescens	Hoary Saltbush
52	Shrub	Atriplex	lentiformis	Quail Saltbush
53	Shrub	Baccharis	pilularis	Coyote Bush
54	Shrub	Baccharis	salicifolia	Mule Fat "R"
55	Shrub	Carissa	macrocarpa	Natal Plum
56	Shrub	Ceanothus spp.		California Lilac
57	Shrub	Cistus spp.		Rockrose
58	Shrub	Cneoridium	dumosum	Bush rue
59	Shrub	Comarostaphylis	diversifolia	Summer Holly
60	Shrub	Convolvulus	cneorum	Bush Morning Glory
61	Shrub	Dalea	attenuata v orcuttii	Orcutt's Delea
62	Shrub	Elaeagnus	pungens	Silverberry
63	Shrub	Encelia	californica	Coast Sunflower
64	Shrub	Encelia	farinosa	White Brittlebush
65	Shrub	Eriobotrya	deflexa	Bronze Loquat
66	Shrub	Eriophyllum	confertiflorum	Golden Yarrow
67	Shrub	Escallonia spp.		Escallonia
68	Shrub	Feijoa	sellowiana	Pineapple Guava
69	Shrub	Fouqueria	splendens	Ocotillo
70	Shrub	Fremontodendron	californicum	Flannelbush
71	Shrub	Fremontodendron	mexicanum	Southern Flannelbush
72	Shrub	Galvezia	juncea	Baja Bush-Snapdragon
73	Shrub	Galvezia	speciosa	Island Bush-Snapdragon
74	Shrub	Garrya	elliptica	Coast Silktassel
75	Shrub	Garrya	flavescens	Ashy Silktassel
76	Shrub	Heteromeles	arbutifolia	Toyon
77	Shrub	Lantana spp.		Lantana
78	Shrub	Lotus	scoparius	Deerweed
79	Shrub	Mahonia spp.		Barberry
80	Shrub	Malacothamnus	clementinus	San Clemente Island Bush Mallow
81	Shrub	Malacothamnus	fasciculatus	Mesa Bushmallow
82	Shrub	Melaleuca spp.		Melaleuca
83	Shrub	Mimulus spp.		Monkeyflower
84	Shrub	Nolina	parryi	Parry's Nolina
85	Shrub	Photinia spp.		Photinia
86	Shrub	Pittosporum	crassifolium	NCN
87	Shrub	Pittosporum	rhombifolium	Queensland Pittosporum
88	Shrub	Pittosporum	tobira 'Wheeleri'	Wheeler's Dwarf
89	Shrub	Plumbago	auriculata	Cape Plumbago
90	Shrub	Prunus	caroliniana	Carolina Laurel Cherry
91	Shrub	Prunus	ilicifolia	Hollyleaf Cherry
92	Shrub	Prunus	lyonii	Catalina Cherry
93	Shrub	Puncia	granatum	Pomegranate
94	Shrub	Pyracantha spp.		Firethorn
95	Shrub	Rhamus	alaternus	Italian Buckthorn
96	Shrub	Rhamus	californica	Coffeeberry
97	Shrub	Rhaphiolepis spp.		Rhaphiolepis
98	Shrub	Rhus	continus	Smoke Tree
99	Shrub	Rhus	integrifolia	Lemonade Berry
100	Shrub	Rhus	laurina	Laurel Sumac

No.	Type	Genus	Species	Common Name
101	Shrub	Rhus	ovata	Sugarbush
102	Shrub	Rhus	trilobata	Squawbush
103	Shrub	Romneya	coulteri	Matilija Poppy
104	Shrub	Rosa	californica	California Wild Rose
105	Shrub	Rosa	minutifolia	Baja California Wild Rose
106	Shrub	Salvia spp.		Sage
107	Shrub	Sambucus spp.		Elderberry
108	Shrub	Symphoricarpos	mollis	Creeping Snowberry
109	Shrub	Syringa	vulgaris	Lilac
110	Shrub	Teucrium	fruticans	Bush Germander
111	Shrub	Verbena	lilacina	Lilac Verbena
112	Shrub	Xylosma	congestum	Shiny Xylosma
113	Shrub	Yucca	schidigera	Mojave Yucca
114	*Shrub*	*Yucca*	*whipplei*	*Foothill Yucca*
115	Tree	Acer	macrophyllum	Big Leaf Maple
116	Tree	Acer	saccarum	Sugar Maple
117	Tree	Acer	saccharinum	Silver Maple
118	Tree	Alnus	rhombifolia	White Alder "R"
119	Tree	Arbutus	unedo	Strawberry Tree
120	Tree	Brahea	armata	Blue Mexican Palm
121	Tree	Brahea	edulis	Guadalupe Palm
122	Tree	Ceratonia	siliqua	Carob
123	Tree	Cercis	occidentalis	Western Redbud
124	Tree	Cerdidium	floridum	Blue Palo Verde
125	Tree	Cornus	nuttallii	Mountain Dogwood
126	Tree	Cornus	stolonifera	Redtwig Dogwood
127	Tree	Elaeagnus	angustifolia	Russian Olive
128	Tree	Eriobotrya	japonica	Loquat
129	Tree	Gingko	biloba "Fairmount"	Fairmount Maidenhair Tree
130	Tree	Gleditisia	triacanthos	Honey Locust
131	Tree	Juglans	californica	California Walnut
132	Tree	Juglans	hindsii	California Black Walnut
133	*Tree*	*Lagerstroemia*	*indica*	*Crape Myrtle*
134	Tree	Ligustrum	lucidum	Glossy Privet
135	Tree	Liquidambar	styraciflua	Sweet Gum
136	Tree	Liriodendron	tulipifera	Tulip Tree
137	Tree	Lyonothamnus	floribundus ssp. Asplenifolius	Fernleaf Catalina Ironwood
138	Tree	Melaleuca spp.		Melaleuca
139	Tree	Myoporum spp.		Myoporum
140	Tree	Nerium	oleander	Oleander
141	Tree	Parkinsonia	aculeata	Mexican Palo Verde
142	Tree	Pistacia	chinensis	Chinese Pistache
143	Tree	Pistacia	vera	Pistachio Nut
144	Tree	Pittosporum	phillyreoides	Willow Pittosporum
145	Tree	Platanus	acerifolia	London Plane Tree
146	Tree	Platanus	racemosa	California Sycamore "R"
147	Tree	Populus	alba	White Poplar
148	Tree	Populus	fremontii	Western Cottonwood "R"
149	Tree	Populus	trichocarpa	Black Cottonwood "R"
150	Tree	Prunus	caroliniana	Carolina Laurel Cherry
151	Tree	Prunus	cersifera 'Newport'	Newport Purple-Leaf Plum
152	*Tree*	*Prunus*	*ilicifolia*	*Hollyleaf Cherry*
153	Tree	Prunus	lyonii	Catalina Cherry

No.	Type	Genus	Species	Common Name
154	Tree	Prunus	serrulata 'Kwanzan'	Flowering Cherry
155	Tree	Prunus	xblireiana	Flowering Plum
156	Tree	Prunus	yedoensis 'Akebono'	Akebono Flowering Cherry
157	Tree	Quercus	agrifolia	Coast Live Oak
158	Tree	Quercus	engelmannii	Engelmann Oak
159	Tree	Quercus	suber	Cork Oak
160	Tree	Rhus	lancea	African Sumac
161	Tree	Salix spp.		Willow "R"
162	Tree	Tristania	conferta	Brisbane Box
163	Tree	*Ulmus*	*parvifolia*	*Chinese Elm*
164	Tree	Ulmus	pumila	Siberian Elm
165	Tree	Umbellularia	californica	California Bay Laurel "R"
166	Vine	Antigonon	leptopus	San Miguel Coral Vine
167	Vine	Distictis	buccinatoria	Blood-Red Trumpet Vine
168	Vine	Keckiella	cordifolia	Heart-Leaved Penstemon
169	Vine	Lonicera	japonica 'Halliana'	Hall's Honeysuckle
170	Vine	Lonicera	subspicata	Chaparral Honeysuckle
171	Vine	Solanum	jasminoides	Potato Vine

APPENDIX 'B'

UNDESIRABLE PLANT LIST

The following species are highly flammable and should be avoided when planting within the first 50 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.

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

** San Diego County native species

APPENDIX 'B' 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

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.

APPENDIX 'C'

BehavePlus Version 3.01
Fire Behavior Calculations

BehavePlus 3.0.1 (Build 261)

MILLER ROAD CENTER PROJECT SCENARIO 1

Tue, Jul 15, 2008 at 14:09:16

Input Worksheet

Modules: SURFACE

Input Variables	Input Value(s)	Units
Fuel/Vegetation, Surface/Understory		
Fuel Model	SCAL18	
Fuel Moisture		
1-h Moisture	2	percent
10-h Moisture	3	percent
100-h Moisture	5	percent
Live Herbaceous Moisture	30	percent
Live Woody Moisture	50	percent
Weather		
Midflame Wind Speed	24	mi/h
Direction of Wind Vector (from upslope)	45	deg
Terrain		
Slope Steepness	30	percent
Notes		

Run Option Notes

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 and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Results

Output Variable	Value	Units
Surface Rate of Spread (maximum)	293.6	ft/min
Heat per Unit Area	4358	Btu/ft2
Fireline Intensity	21329	Btu/ft/s
Flame Length	44.1	ft
Direction of Maximum Spread (from upslope)	44	deg
Max Eff Wind Exceeded?	No	

End

BehavePlus 3.0.1 (Build 261)

MILLER ROAD CENTER PROJECT SCENARIO 2

Tue, Jul 15, 2008 at 13:37:30

Input Worksheet

Modules: SURFACE

Input Variables	Input Value(s)	Units
Fuel/Vegetation, Surface/Understory		
First Fuel Model	1	
Second Fuel Model	9	
First Fuel Model Coverage	50	percent
Fuel Moisture		
1-h Moisture	2	percent
10-h Moisture	3	percent
100-h Moisture	5	percent
Live Herbaceous Moisture		percent
Live Woody Moisture		percent
Weather		

Midflame Wind Speed	24	mi/h
Direction of Wind Vector (from upslope)	45	deg

Terrain

Slope Steepness	30	percent

Notes

Run Option Notes

Two fuel model weighting method: area-weighted [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 and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Results

Output Variable	Value	Units
Surface Rate of Spread (maximum)	466.9	ft/min
Heat per Unit Area	488	Btu/ft2
Fireline Intensity	1641	Btu/ft/s
Flame Length	13.6	ft
Direction of Maximum Spread (from upslope)	45	deg
Max Eff Wind Exceeded?	No	

End

BehavePlus 3.0.1 (Build 261)

MILLER ROAD CENTER PROJECT SCENARIO 3

Tue, Jul 15, 2008 at 14:01:46

Input Worksheet

Modules: SURFACE

Input Variables	Input Value(s)	Units
Fuel/Vegetation, Surface/Understory		
Fuel Model	SCAL18	
Fuel Moisture		
1-h Moisture	2	percent
10-h Moisture	3	percent
100-h Moisture	5	percent
Live Herbaceous Moisture	30	percent
Live Woody Moisture	50	percent
Weather		
Midflame Wind Speed	12	mi/h
Direction of Wind Vector (from upslope)	215	deg
Terrain		
Slope Steepness	30	percent

Notes

Run Option Notes

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 and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Results

Output Variable	Value	Units
Surface Rate of Spread (maximum)	147.2	ft/min
Heat per Unit Area	4358	Btu/ft2
Fireline Intensity	10695	Btu/ft/s
Flame Length	32.1	ft
Direction of Maximum Spread (from upslope)	217	deg
Max Eff Wind Exceeded?	No	

End

BehavePlus 3.0.1 (Build 261)

MILLER ROAD CENTER PROJECT SCENARIO 4

Tue, Jul 15, 2008 at 14:04:10

Input Worksheet

Modules: SURFACE

Input Variables	Input Value(s)	Units
Fuel/Vegetation, Surface/Understory		
First Fuel Model	1	
Second Fuel Model	9	
First Fuel Model Coverage	50	percent
Fuel Moisture		
1-h Moisture	2	percent
10-h Moisture	3	percent
100-h Moisture	5	percent
Live Herbaceous Moisture	30	percent
Live Woody Moisture	50	percent

Weather

Midflame Wind Speed	12	mi/h
Direction of Wind Vector (from upslope)	215	deg

Terrain

Slope Steepness	30	percent

Notes

Run Option Notes

Two fuel model weighting method: area-weighted [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 and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Results

Output Variable	Value	Units
Surface Rate of Spread (maximum)	396.1	ft/min
Heat per Unit Area	488	Btu/ft2
Fireline Intensity	1415	Btu/ft/s
Flame Length	12.7	ft
Direction of Maximum Spread (from upslope)	216	deg
Max Eff Wind Exceeded?	No	

End

APPENDIX 'D'

Non-Combustible & Fire Resistant Building Materials For Balconies, Carports, Decks, Patio Covers and Floors

Examples of non-combustible & fire resistant building materials for balconies, carports decks, patio covers and floors are as follow:

I. **NON-COMBUSTIBLE HEAVY GAGE ALUMINUM MATERIALS** - *Metals USA Building Products Group - Ultra-Lattice*

Ultra-Lattice Stand Alone Patio Cover

Ultra-Lattice Attached Patio Cover

Ultra-Lattice Solid Patio Cover

Ultra-Lattice Vs. Wood

II. FRX Exterior Fire-Retardant Treated Wood

Exterior Fire Retardant Treated (FRT) Wood

FRX® fire retardant treated wood may be used in exterior applications permitted by the codes where: public safety is critical, other materials would transfer heat or allow fires to spread, sprinkler systems cannot easily be installed, corrosive atmospheres necessitate excessive maintenance of other materials, or fire protection is inadequate or not readily available. The International Building, Residential and Urban-Wildland Interface Codes and regulations permit the use of fire retardant treated wood in specific instances. See below for typical exterior uses and typical residential uses.

Typical Exterior Uses

- Balconies
- Decks

Homeowners and Residential Architects: See this 2-minute video and the diagram below.

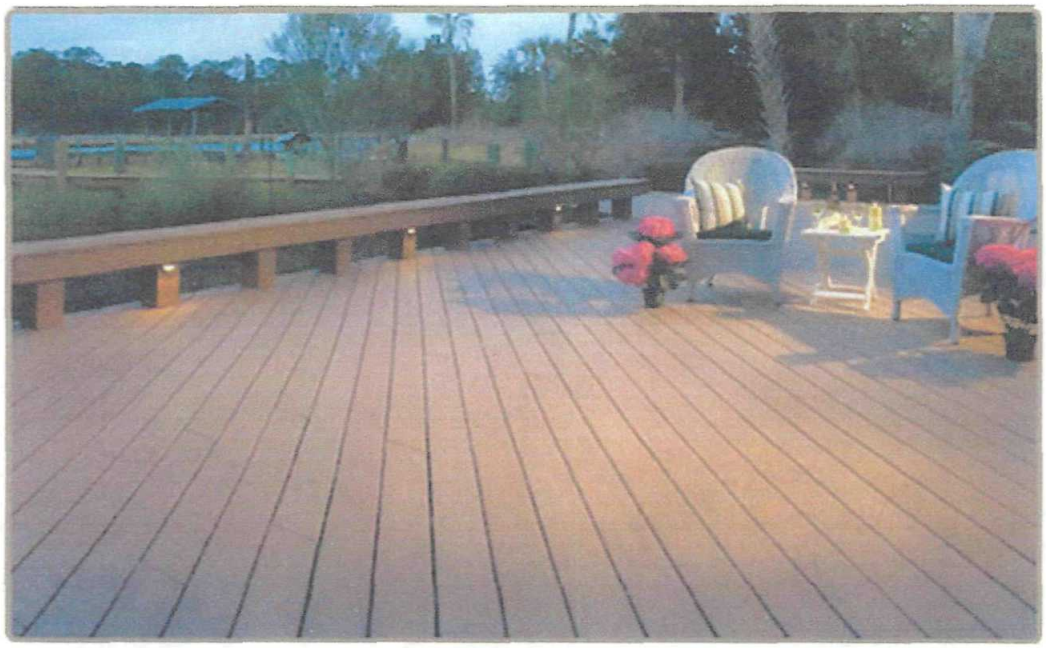
For information on fire retardant treated wood for exterior uses, visit www.frxwood.com.

III. **TREX COMPANY, INC** –"Trex Accents ®: Fire Defense ™ " wood and polyethylene composite deck board, nominal 5/4" thick x 5-1/2" width, nominal density of 0.036 lb/in^3.

Trex Accents®: Fire Defense™

The perfect blend of beauty and brawn.

Trex's #1 selling platform, Trex Accents®, exceeds the strict fire regulations set by the State of California and San Diego County.



- Offers superior safety performance:
  - Exceeds ASTM E84 Class B Flame Spread.
  - Exceeds 12-7A-4 Part A (underflame) and Part B (Burning Brand).
- Self-extinguishing even under extreme fire exposure.
- Approved for use by the California State Fire Marshal's Office and San Diego County. Read the California Department of Forestry and Fire Protection, Office of the State Fire Marshal WILDLAND URBAN INTERFACE (WUI)PRODUCTS Report. (PDF)

IV. SOLID "WOOD" DECKING

◇Company Name: Various Manufacturers
Product Description: Solid "Wood" decking: "Redwood", "Western Red Cedar", "Incense Cedar", "Port Orford Cedar", and "Alaska Yellow Cedar".
Sizes: Minimum nominal 2" thickness (American Softwood Lumber Standard PS 20).
Lumber grades: Construction Common and better grades for Redwood, 3 Common and better grades for Cedars, and commercial decking or better grades for both Redwood and Cedars.
Special instructions: solid wood decking shall be installed over solid wood joists spacing 24" or less on center.

APPENDIX 'F'

PROJECT FACILITY AVAILIBILITY FORMS

To Be Provided by Applicant

COUNTY OF SAN DIEGO
DEPT. OF PLANNING & LAND USE
5201 RUFFIN ROAD, SUITE B
SAN DIEGO, CA 92123-1666
(858) 565-5981 • (888) 267-8770

PROJECT FACILITY AVAILABILITY FORM

FIRE

F

Please type or use pen

Valley Center View Property
Owner's Name Phone

3936 Hortensia St
Owner's Mailing Address Street

San Diego CA 92110
City State Zip

ORG_____
ACCT_____
ACT_____
TASK_____
DATE_____ AMT $_____

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. ☐ Major Subdivision (TM) ☐ Specific Plan or Specific Plan Amendment
☐ Minor Subdivision (TPM) ☐ Certificate of Compliance:_____
☐ Boundary Adjustment
☐ Rezone (Reclassification) from_____to_____zone.
☐ Major Use Permit (MUP), purpose:_____
☐ Time Extension...Case No._____
☐ Expired Map...Case No._____
☐ Other Site Plan (B) App

B. ☐ Residential ..... Total number of dwelling units_____
☒ Commercial ..... Gross floor area 15,605 SF
☐ Industrial ..... Gross floor area_____
☐ Other ..... Gross floor area_____

C. Total Project acreage _____Total lots_____Smallest proposed lot_____

Assessor's Parcel Number(s)
(Add extra if necessary)

188	231	34

Thomas Bros. Page 1090 Grid E1

Miller Rd and Valley Center Rd VC
Project address Street

Valley Center 92082
Community/Planning Area/Subregion Zip

OWNER/APPLICANT AGREES TO COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: Jerry D. Baughan Date: Nov 5, 2010

Address: 3936 Hortensia St San Diego CA 92110 Phone: 619 523-0133

(On completion of above, present to the district that provides fire protection to complete Section 2 and 3 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District name Valley Center Fire Protection District

Indicate the location and distance of the primary fire station that will serve the proposed project: VC STATION # 02
LOCATED AT 28234 Lilac Road (2 miles)

A. ☒ Project is in the District and eligible for service.
☐ Project is not in the District but is within its Sphere of Influence boundary, owner must apply for annexation.
☐ Project is not in the District and not within its Sphere of Influence boundary.
☐ Project is not located entirely within the District and a potential boundary issue exists with the _____ District.

B. ☒ Based on the capacity and capability of the District's existing and planned facilities, fire protection facilities are currently adequate or will be adequate to serve the proposed project. The expected emergency travel time to the proposed project is 5 minutes.
☐ Fire protection facilities are not expected to be adequate to serve the proposed development within the next five years.

C. ☒ District conditions are attached. Number of sheets attached: Fire Protection Plan
☐ District will submit conditions at a later date.

SECTION 3. FUELBREAK REQUIREMENTS

Note: The fuelbreak requirements prescribed by the fire district for the proposed project do not authorize any clearing prior to project approval by the Department of Planning and Land Use.

☒ Within the proposed project 100' feet of clearing will be required around all structures.
☒ The proposed project is located in a hazardous wildland fire area, and additional fuelbreak requirements may apply. Environmental mitigation requirements should be coordinated with the fire district to ensure that these requirements will not pose fire hazards.

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized signature	George E. Lucia	760-751-7600	11/5/10
	Print name and title	Phone	Date

On completion of Section 2 and 3 by the District, applicant is to submit this form with application to: Zoning Counter, Department of Planning and Land Use, 5201 Ruffin Road, Suite B, San Diego, CA 92123

FIRE MARSHAL
Valley Center Fire Protection District
28234 Lilac Road
Valley Center, California 92082
(760) 751-7600

APPROVED
Date 11.5.10

DPLU-399F (09/06)

DOC # 2009-0093476

FEB 25, 2009 12:28 PM

OFFICIAL RECORDS
SAN DIEGO COUNTY RECORDER'S OFFICE
DAVID L. BUTLER, COUNTY RECORDER
FEES: 30.00

PAGES: 8

RECORDING REQUESTED BY AND AFTER RECORDATION RETURN TO:

District Administrator
Valley Center Fire Protection District
28234 Lilac Road
Valley Center, CA 92082

5877

NOTICE OF SPECIAL TAX LIEN

VALLEY CENTER FIRE PROTECTION DISTRICT
Community Facilities District No. 2008-1

Pursuant to the requirements of Section 3114.5 of the Streets and Highways Code of California and the Mello-Roos Community Facilities Act of 1982, as amended, Section 53311, *et. seq.*, of the California Government Code (the "Act"), the undersigned Clerk of the legislative body of Valley Center Fire Protection District (the "District"), County of San Diego, State of California, hereby gives notice that a lien to secure payment of a special tax is hereby imposed by the District in the County of San Diego, State of California. The special tax secured by this lien is authorized to be levied for the purpose providing fire protection and suppression services, ambulance and paramedic services and the operation, maintenance, repair and replacement of fire stations and other facilities and equipment owned or maintained by the District and other fire protection and suppression and emergency services and costs as authorized by the Act, plus administrative and incidental costs related to the CFD.

The special tax is authorized to be levied within Community Facilities District No. 2008-1 which has now been officially formed and the lien of the special tax is a continuing lien which shall secure each annual levy of the special tax and which shall continue in force and effect until the special tax obligation is prepaid, permanently satisfied, and canceled in accordance with law or until the special tax ceases to be levied and a notice of cessation of special tax is recorded in accordance with Section 53330.5 of the Government Code.

The rate, method of apportionment and manner of collection of the authorized special tax is as follows:

A Special Tax authorized under the Mello-Roos Community Facilities Act of 1982 applicable to the land in the Valley Center Community Facilities District No. 2008-1 (the "CFD") of the Valley Center Fire Protection District (the "District") shall be levied and collected according to the tax liability determined by the District through the application of the appropriate amount or rate, as described below.

1. Definitions. The following definitions shall apply:

COUNTY OF SAN DIEGO
DEPT. OF PLANNING & LAND USE
5201 RUFFIN ROAD, SUITE B
SAN DIEGO, CA 92123-1666
(858) 565-5981 • (888) 267-8770

PROJECT FACILITY AVAILABILITY FORM

WATER

W

Please type or use pen

Valley Center View Property
Owner's Name Phone

3936 Hortensia St
Owner's Mailing Address Street

San Diego CA 92110
City State Zip

ORG VCMWD
ACCT
ACT 01-4433.00
TASK
DATE 11-10-10
AMT $ 50.00

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. ☐ Major Subdivision (TM) ☐ Specific Plan or Specific Plan Amendment
☐ Minor Subdivision (TPM) ☐ Certificate of Compliance:
☐ Boundary Adjustment
☐ Rezone (Reclassification) from to zone.
☐ Major Use Permit (MUP), purpose:
☐ Time Extension...Case No.
☐ Expired Map...Case No.
☒ Other Site Plan App

B. ☐ Residential . . . . . Total number of dwelling units
☒ Commercial. . . . . Gross floor area 15,605 SF
☐ Industrial . . . . . Gross floor area
☐ Other . . . . . Gross floor area

C. ☐ Total Project acreage 6.15 AC Total number of lots 1

D. Is the project proposing the use of groundwater? ☐ Yes ☒ No
Is the project proposing the use of reclaimed water? ☐ Yes ☒ No

Assessor's Parcel Number(s)
(Add extra if necessary)

188	231	34

Thomas Bros. Page 1090 Grid E1

Miller Rd and Valley Center Rd N
Project address Street

Valley Center 92082
Community Planning Area/Subregion Zip

Owner/Applicant agrees to pay all necessary construction costs, dedicate all district required easements to extend service to the project and COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: Jerry D. Gaughan Date: Nov 5, 2010

Address: 3936 Hortensia st San Diego CA 92110 Phone: 619 523-0133

(On completion of above, present to the district that provides water protection to complete Section 2 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District Name: Valley Center Municipal Water District Service area county area of Valley Center

A. ☒ Project is in the district.
☐ Project is not in the district but is within its Sphere of Influence boundary, owner must apply for annexation.
☐ Project is not in the district and is not within its Sphere of Influence boundary.
☐ The project is not located entirely within the district and a potential boundary issue exists with the District.

B. ☒ Facilities to serve the project ☒ ARE ☐ ARE NOT reasonably expected to be available within the next 5 years based on the capital facility plans of the district. Explain in space below or on attached . (Number of sheets)
☐ Project will not be served for the following reason(s):

C. ☒ **District conditions are attached. Number of sheets attached:** one
☐ **District has specific water reclamation conditions which are attached. Number of sheets attached:**
☐ **District will submit conditions at a later date.**

D. ☒ **How far will the pipeline(s) have to be extended to serve the project?** as required for fire protection and looping.

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized signature: Wally Grabbe Print name Wally Grabbe

Print title District Engineer Phone (760) 749-1603 Date 11-23-10

NOTE: THIS DOCUMENT IS NOT A COMMITMENT OF SERVICE OR FACILITIES BY THE DISTRICT
On completion of Section 2 by the district, applicant is to submit this form with application to:
Zoning Counter, Department of Planning and Land Use, 5201 Ruffin Road, San Diego, CA 92123

PROJECT FACILITY AVAILABILITY - WATER

EXHIBIT 'A'

Assessors Parcel Number: 188-231-34

ITEM I Water facility (pipeline, pumping station, and local storage) capacity is reserved to serve this development for the next two years. However, given the current and potentially long-term hydrologic, legal and regulatory conditions negatively impacting quantity and reliability of supplies from the State Water Project and the Colorado River delivered through our sole source suppliers, the Metropolitan Water District and the San Diego County Water Authority, **there exists the very real possibility that at any point in the foreseeable future the Valley Center Municipal Water District may not have adequate water supplies available to issue actual water meters to serve this development.** Once meters are installed, residents of this property will be required to participate in any future conservation measures that may be adopted by the Valley Center Municipal Water District.

ITEM II ADDITIONAL COMMENTS:

1) Water availability to this development will depend on the applicant funding the design and construction the water distribution facilities required for the development.

2) Project proponent should contact the Valley Center Fire Protection District for fire district requirements.

3) This project shall be subject to the District's Administrative Code including but not limited to Article 160 regarding Water Service, Article 190 regarding Developer Project Requirements, Article 175 regarding Recycled Water, and Article 230 regarding Water Supply Shortage Conditions.

4) Any additional offsite easements that are required for the project shall be granted to Valley Center Municipal Water District prior to approval of the project's improvement plans.

5) Relocation of existing Valley Center Municipal Water District facilities may be required.

6) All sites with above-ground water and wastewater facilities shall be conveyed to VCMWD for ownership, operation and maintenance upon completion of construction and prior to District acceptance of the facilities.

7) The applicant shall provide financial security for construction of all facilities or complete construction of the required water distribution, wastewater collection, wastewater treatment and recycled water distribution facility.

APPENDIX 'G'

CURRENT COUNTY BUILDING CODE REQUIREMENTS

As of the date of this FPP, the following are the San Diego County requirements for ignition resistive construction requirements which include requirements under the California Building Code Chapter 7A. In addition, exterior buiiding construction including roofs, eaves, exterior walls, doors, windows, decks, and other attachments must meet the CBC Chapter 7A ignition resistance requirements at the time of building permit application.

All stuctures wildland areas will be built with a Class A roof assembly, including a Class A roof covering and attic/foundation ventilation louvers or ventilation openings in vertical walls shall not exceed 144 square inches per opening. These openings will be covered with 1/4-inch mesh corrosion-resistant metal screening or other approved material that offers equivalent protection. Attic ventilation will also comply with the requirements of the County Building Code. Ventilation louvers and openings may be incorporated as part of access assemblies. Any chimney, flue or stovepipe will have an approved spark arrester. An approved spark arrester is defined as a device constructed of nonflammable materials, 12-gauge minimum thickness, or other material found satisfactory by the local Fire Marshal, and having ½ inch perforations for arresting burning carbon or sparks and installed to be visible for the purposes of inspection and maintenance. These ignition resistant building features will reduce the threat of flying embers entering a structure, landing on a receptive fuel and starting a new fire.

In addition to the above described features, ignition resistant building features will be applied to all structures located in wildland wildfire area. The ignition-resistant building features listed below are designed to further address wildfire concerns for residential/commercial development:

1) Exterior walls of the buildings will be constructed with one-hour fire resistant building materials and protected with two-inch nominal solid blocking between rafters at all roof overhangs and under the exterior wall covering (In accordance with SFM 12-7A-1). An exception, the exterior wall on building "A", adjacent to the property line on the east side, will utilize alternative methods and materials to mitigate the 30-foot setback required in Title 14 section 1275.01 for State Respondibility Areas. These mitigations include 1) increased fire rating by installing non-combustible sheathing nailed to the framing and with non-combustible cladding/exterior cover; 2) The drive-thru window will be constructed of tempered glass or a dual glazed window with minimally one pane of tempered glass (4.4.5 below). A non-combustible masonary wall without openings will be constructed along the eastern boundary varying from 4 to 10 feet in height.

2) All eaves of roof overhangs will be enclosed (boxed eaves) on all sides with non-combustible materials, or constructed with heavy timber such as 2x starter board and 3x6 rafter tails.

3) Structure openings: Louvers, ventilators, or openings in walls, roofs, attics, and under floor areas having headroom less than four (4) feet in height which are not fitted with sash or doors will be covered with wire screen. The screen covering such openings shall be of corrosion-resistant metal or other approved material that offers equivalent protection and shall have a maximum mesh of one-eighth (1/8) inch. Eave-type attic ventilators and roof-mounted turbine vents are prohibited. No attic vent shall be placed facing the foothills/wildland.

4) All projections (exterior balconies, stairs, covers, unenclosed roofs and floors, and similar architectural appendages and projections) will be of non-combustible construction, one-hour fire resistive construction on the underside, or heavy timber construction. When such appendages and projections are attached to exterior fire-resistive walls, they shall be constructed to maintain the fire-resistive integrity of the wall. For examples of building products suitable for Zone A, see APPENDIX 'D'.

5) All glass or other transparent, translucent or opaque glazing materials, including skylights, will be constructed of tempered glass or a dual glazed windows with minimally one pane of tempered glass. No skylights will be allowed on the roof assembly facing hazardous vegetation.

6) Fences and other structures less than 5 feet from a building will be non-combustible construction, heavy timber or fire retardant pressure treated wood.

7) All rain gutters, down spouts and gutter hardware will be constructed from metal or other noncombustible material to prevent wildfire ignition along eave assemblies.

8) Gutters will be designed to reduce the accumulation of leaf litter and debris that contribute to roof edge ignition.

9) Decorative trim around windows and doors and window shutters may incorporate foam products when at least one of the two following situations is met:

   - Stucco is applied to wire mesh or similar non-combustible materials and is ½ inch in thickness or more over the entire foam surface.

   - The foam contains a fire inhibitor that restricts flame spread and has received a Class 1 fire rating and the foam it is applied over stucco that is ½ inch or more in thickness. The product complies with HUD/FHA "Use of Materials Bulletin No. 71" as well as Building Officials and Code Administrators (BOCA), Independent Community Bankers of America (ICBA) and the Southern Building Code Congress (SBCC).

10) Exterior door assemblies will conform to the performance requirements of standard SFM 12-7A-1 or shall be of approved noncombustible construction, or solid core wood having stiles and rails not less than 1-3/8 inches thick with interior field panel thickness no less than 1-1/4 inches thick, or shall have a fire-resistance rating of not less than 20 minutes when tested according to ASTME 2074.

11) Metal screens are required on all window assemblies.

12) Fire Protection Equipment (e.g., extinguishers): Portable fire extinguishers are required for the commercial buildings (office buildings, convenience stores, etc) and shall be mounted on walls near exits with appropriate signage.

13) All buildings will be fully protected with automatic fire sprinkler system meeting County Building Code.

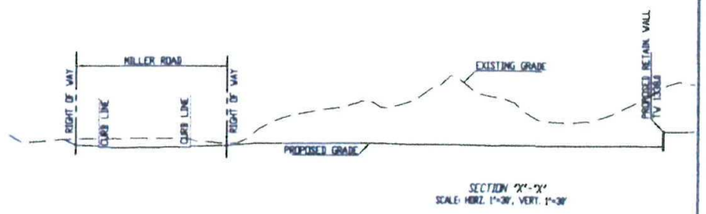
MILLER ROAD PLAZA PROJECT
Fire Protection Plan

VALLEY CENTER FIRE PROTECTION DISTRICT
County of San Diego

APN 188-231-34

VALLEY CENTER VIEW
PROPERTIES RETAIL

SITUATION: 1) Santa Ana Northeast Wind
2) Fuel Model SCAL 18
3) FLAME LENGH: 44.1



Miller Road Center Project
FIRE PROTECTION PLAN (FPP)
VALLEY CENTER FIRE PROTECTION DISTRICT
Fire Protection Map

Legend

Zone 1-Irrigated. Owner Maintained. *Shown as the uncolored area within the red perimeter color.* All vegetation will be removed from this zone and replanted with fire restive landscaping in identified landscaping locations, to maintain a defensible space. All manufactured slopes are included in this zone and will meet Zone 1 landscaping criteria. See APPENDIX A - Approved Plant List in High Fire Hazard Areas. The removal of undesirable species (See APPENDIX B) will also occur in this zone.

Zone 2-Non-Irrigated. Owner maintained. Zone 2 is the area 50 feet beyond Zone 1 where the fuel volume of native vegetation will be thinned by 50 percent or removed and re-planted with fire resistive landscaping plant materials. (See APPENDIX A – Approved Plant List in High Fire Hazard Areas. The removal of undesirable species (See APPENDIX B) will also occur in this zone.

Adjacent property fuel modification and annual weed abatement compliance.

Fire hydrants locations: Front of Building "B", approximately 200 feet northeast of site; and 240 feet off-site to the east along Valley Center Road

Masonary Retaining Wall (Varying in height from 4 to 10 meet.

Prepared By:

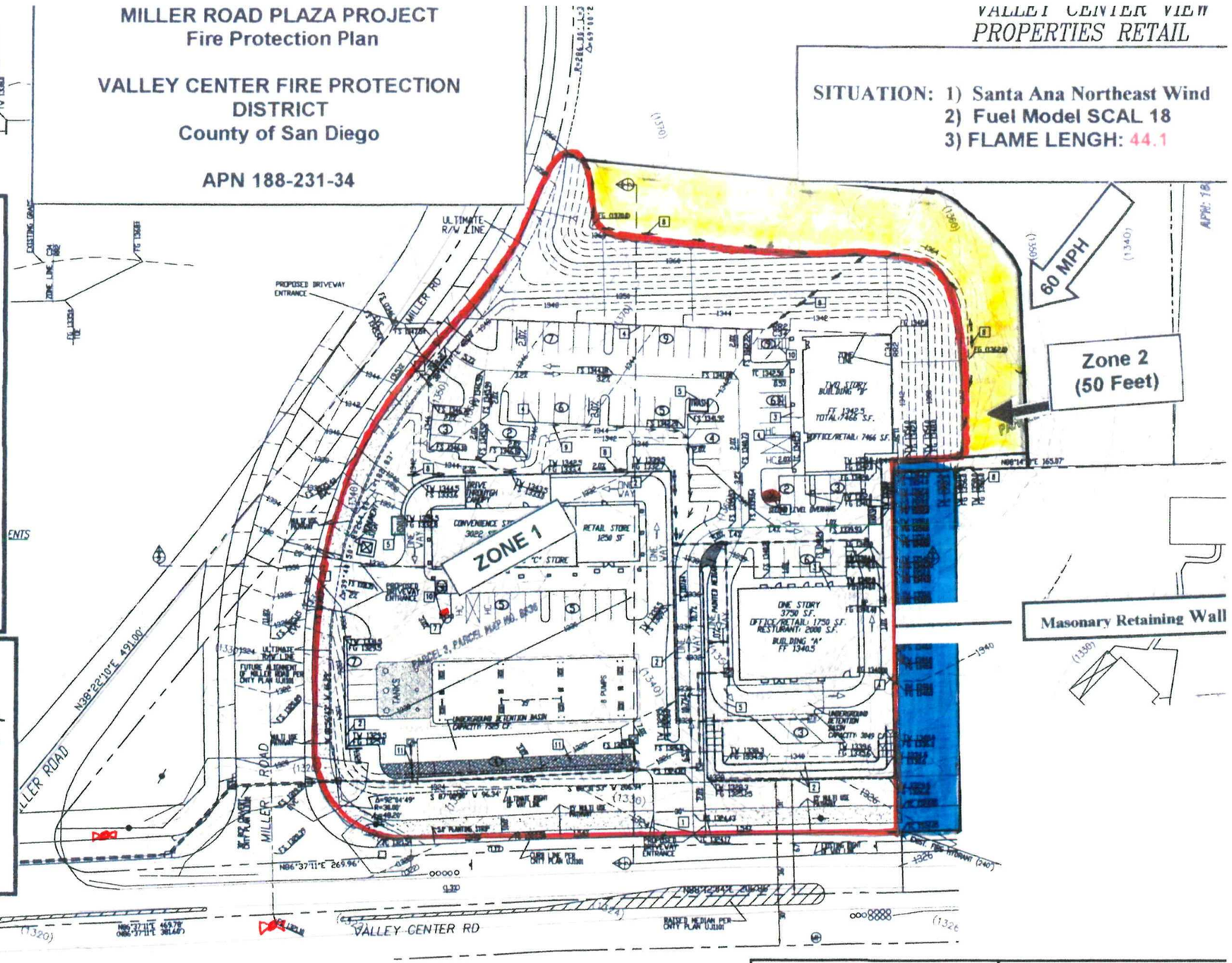
C. DOUGLAS PUMPHREY
FIREWISE 2000, Inc.
Senior Wildland Fire Associate
951-315-2030
dp.firewise2000@sbcglobal.net

Certified By:

David C. Bacon

DAVID C. BACON, President
FIREWISE 2000, Inc.
26337 Sky Drive
Escondido, CA 92026
Telephone: 760-745-3947
760-557-2301 FAX
firewise2000@sbcglobal.net

DATE: 11/20/10



Alterra Engineering Inc.
1843 Campesino Place
Oceanside, CA 92054

PROPERTY OWNER INFORMATION

VALLEY CENTER VIEW PROPERTIES
ESS: 3936 HORTENSIA STREET
SAN DIEGO, CA 92110
HONE NUMBER: 619-523-0133

BENCH MARK

SEE DRAINAGE FEATURES ON SHEET 3

PLAN CHECK/PERMITS	PRIVATE CONTRACT
BUILDING PERMIT PLAN CHECK NUMBER:	COUNTY OF SAN DIEGO DEPARTMENT OF PLANNING AND LAND USE
PARCEL MAP NUMBER:	PRELIMINARY DEVELOPMENT PLAN FOR: *MILLER ROAD CENTER*
ENGINEER OF WORK	

STRIKE OUT VERSION

MILLER ROAD PLAZA PROJECT
Fire Protection Plan
Valley Center Fire Protection District
County of San Diego
APN 188-231-34
PM 8636
KIVA PROJECT: 08-009565-53

July 21, 2008
November 18, 2010

CHAPTER 1. INTRODUCTION

This Fire Protection Plan (FPP) has been prepared for the Miller Road Plaza Project. The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and to identify the measures necessary to adequately mitigate those impacts. As part of the assessment, the plan has considered the property location, topography, geology, combustible vegetation (fuel types), climatic conditions, and fire history. The plan addresses water supply, access (including secondary/emergency access where applicable), structural ignitability and fire resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. The plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect one or more-at-risk communities and essential infrastructure. The plan recommends measures that the property owner will take to reduce the probability of ignition of structures throughout the Project site.

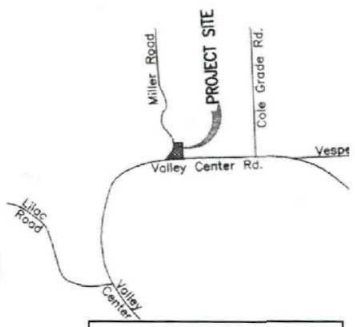


Figure 1 – Vicinity Map

1.1 Project Location, Description and Environmental Setting

1.1.1 Project Location

The Miller Road Plaza Project, Parcel Map No. 8636, is located at the corner of Miller Road and Valley Center Road (Figure 1 - Vicinity Map) within a very high fire hazard severity zone in the community of Valley Center, San Diego County, California. It is located at the intersection of two major roadways and contiguous to a real estate business on a segment of the east boundary. The lead fire protection agency is the Valley Center Fire Protection District. Prior to any land development activity for this business/commercial site, a Fuel Protection Plan must be submitted to and approved by the Fire Protection District.

Owner/Developer: Valley Center View Properties LP
3940 Hortensia Street
San Diego, CA 92110
619-523-0133

Approving Department: Valley Center Fire Protection District
Administrative Office & Fire Prevention Bureau
28234 Lilac Road
Valley Center, CA 92082

1.1.2 Project Description

This proposed Project is located on a prominent sloping point of land at the corner of Miller Road and Valley Center Road (See Photo 1). Miller Road at this point has an uphill grade which

Photo 1 – Arial View of Project Site

dissects rugged steep hillside and deep canyon areas surrounding the project site to the northwest, north and northeast. To the south and southeast of the Project, the land is relatively level un-dissected agricultural land. The project consists of a C-Store, an associated gas station, two office/retail buildings (one one-story structure and one two-story structure) and associated parking areas and appurtenant uses. All landscaped areas will be privately maintained by the owner. The development site is currently undeveloped.

1.1.3 Environmental Setting

The Miller Road Plaza Project is surrounded by rugged terrain. Most of the terrain in the Valley Center Fire Protection District is rugged, with steep hillsides and deep canyons. This is particularly the situation with regard to the rugged terrain that runs from the northwest to the southeast in the vicinity of the Project. Coastal Sage Scrub (SCAL 18) fuel model dominates the foothill landscape with inclusions of High Load, Dry Climate shrubs or Fuel Model Sh5. (See Photo 2 – Vicinity Aerial Photo).

This FPP assesses the overall (on-site and off-site) wildland fire hazards and risks that may threaten life and property associated with the proposed development. In addition, the FPP establishes both the short and long-term fuel modification actions to minimize any projected fire hazard and risk and assigns annual maintenance responsibilities for each of the recommended fuel modification actions interior to the project.

CHAPTER 2. GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

This FPP evaluates the adverse environmental effects that a proposed project may have from wildland fire and properly mitigate those impacts to ensure that development projects do not unnecessarily expose people or structures to a significant risk of loss, injury or death involving wildland fires. This section of the FPP includes the following Guidelines for the Determination of Significance:

2.1 Risk or Loss

Would the project expose people or structures to a significant risk or loss?

The Miller Road Plaza Project is located within an area classified by the Valley Center Fire Protection District as an extreme Fire Hazard Area. The major threat of a wildland fire is from the north and northwest of the Project. This threat comes from adjacent open space brush land fuels and a history of severe fire weather. To the projects benefit, the western and southern boundary abuts two major roadways, and a portion of the eastern boundary abuts an existing landscaped and maintained business parcel.

2.2 Emergency Access

Would the project result in inadequate emergency access?

The primary access to the Miller Road Center Development will be via Miller Road and Valley Center road (public roadways). Access within the commercial development will be via three entrances (two from Miller Road and one from Valley Center Road).

2.2.1 Access Road Widths. All interior roadways shall comply with the Valley Center Protection District standards. A standard specific to this development includes:

- Minimum unobstructed paved width of interior "fire lanes" shall be 24 feet.

2.2.2 Specific interior roadways shall be designated "fire access roadways" or "fire lanes".

2.2.3 Emergency vehicle turnarounds shall be provided on "fire lanes" exceeding 150 feet in length.

2.2.4 All roads shall be provided with an approved paved driving surface prior to construction and/or bringing combustible building products onto each parcel.

2.2.5 Fire access roadways shall be within a 150 feet hose line pull from all portions of exterior walls of every building on the development.

2.2.6 All roads shall be provided with an approved paved driving surface prior to construction and/or bringing combustible building products onto each parcel.

2.2.7 Any gate or barrier across a fire access roadway shall have specific plans reviewed and approved prior to installation.

2.2.8 Loading zones shall not interfere with "fire lanes".

2.2.10 Road and Street Grades. The road and street grade standard for the Fire Protection District states that roadways will not exceed 20 percent and that any roadway over 15 percent shall be a concrete surface and have a deep broom finish perpendicular to the direction of travel to enhance traction.

2.2.11 Secondary Access. The entrance driveways in combination with designated and marked "fire lanes" will provide adequate secondary access.

2.2.12 Road Surface. All roadways within the development shall be all-weather paved streets capable of supporting fire apparatus weighing up to 75,000 pounds.

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2.2 Emergency Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection?

The Miller Road Plaza Project is the first of its kind in this general area and will require specific mitigations to provide protection to people and structures. It is not expected, however, to cause adverse physical impacts or the need for new or physically altered government facilities. However, there is a requirement by VCFPD Ordinance for participation in a Community Facility District.

Deleted: There is an on-going study by the Fire Protection District to evaluate and provide a gap assessment to assess the need for additional fire protection coverage for the future. However, it is not anticipated that this development would be the cause for additional protection coverage itself.

2.4 Water Supply

Would the project have sufficient water supplies available to serve the project form existing entitlements and resources, or are new or expanded entitlements needed? The Valley Center Water District has agreed to serve the water needs for this commercial project.

CHAPTER 3. ANTICIPATED FIRE BEHAVIOR IN THE VICINITY

The project site is located in Climate Zone 21. Climate is characterized by generally mild, (8-10 inches precipitation per year) winters, with the bulk of the annual precipitation falling between January and March, frequent periods of extended drought, and long dry and hot spring, summer and fall seasons, which dry out the native vegetation making the project's native vegetation species very flammable.

The following chart represents the typical summer, Santa Ana and Peak fire weather (climate conditions) elements for this Fire Protection Plan:

Transitional Zone	Period	**Temperature**	**Relative Humidity**	**Sustained Wind Speed**	**Burning Index (99%)**
	Summer	90-109 F	10-14%	18 mph	119
	Santa Ana	90-109 F	5-9%	24 mph	730
	Peak	90-109 F	5-9%	56 mph	730

It is reasonable to expect downslope Santa Ana winds in the range of 40-60 MPH within this portion of San Diego County. A fire burning under this wind condition and in the presently existing fuels along the north and northwest boundary of the project would burn downhill and create extreme wildland fire conditions.

The available data suggests that in the second half of the 20th century the frequency of small fires increased in southern California while their average size decreased. In San Diego County, this has resulted in an increased rate of burning in low elevation coastal scrubland, especially the coastal sage scrub formation near the urban development areas. History also indicates over 600 fires in the foothills and mountains from 1910-1999 with the recent Witch Creek and Poomacha Fires as a reminder of the destructive nature of wildfires in San Diego County's history.

Structure ignitions from wildland fire fuels basically come from two sources of heat: convective firebrands (flying embers) and radiant heat. Convective firebrands, transferred during periods of high fire intensity and strong dry winds, have the capability of being transported over long (several hundred feet and up to several miles) distances.

Convective heat will be mitigated to acceptable levels for the Miller Road Plaza Project, as landscaping will be irrigated fire-resistant landscaping and all buildings will be constructed with non-combustible roofing and non-combustible or standard fire-resistive building materials, as per the Valley Center Fire Protection District's requirements. Due to this fact, the convective embers issue needs will be identified as the key issue in this FPP.

Fire-resistant landscape management is the act of converting native vegetative fuels from a highly flammable and high fire intensity state to a more fire resistant and low fire intensity condition. Fire-Resistant landscaping has been proven to be the most effective treatment for minimizing structure losses due to wildland fire radiant heat.

A USDA-Forest Service research study called "Structure Ignition Assessment Model (SIAM)" by Jack D. Cohen, Intermountain Fire Science Laboratory, Missoula, Montana, has helped to validate how much distance is required to keep structures from igniting due to wildfire radiant heat.
The SIAM Ignition Study indications and the personal experience of ***FIREWISE 2000,*** **Inc.** helped established the fuel modification recommendations found in Section 4.0 – Analysis of Project Effects.

Comparing the expected wildland fire behavior projections of untreated vegetation (as depicted in Tables 4.6-1 and 4.6-2) against the proposed fire resistant irrigated landscape vegetation within the development required 100-foot wide fuel thinning zone (as depicted in Tables 4.6-3 and 4.6-4) demonstrates substantial reductions in the expected flame length and fireline intensity.

By requiring all structures to be constructed of non-combustible roofing and building materials, the implementation of a defensible space around all structures adjacent to the Fuel Model SCAL 18 fuels provides the most effective treatment for minimizing structure losses due to the projected flame lengths and associated radiant heat intensities.

Fire intensity in fuel model SCAL 18 has expected flame lengths of **44.1 feet** for a 60-MPH downslope northeast wind (Refer to Table 4.6-1). In contrast, flame lengths in treated fuels will approach **13.6 feet** during an 60-MPH northeast wind (Table 4.6-3). Therefore, fuel modifications and the planting of "firewise" landscaping around all structures adjacent to a Fuel Model SCAL 18 will be more than adequate, particularly along the northeastern, north, and northwestern boundaries of the development.

Fire intensity in SCAL 18 has expected flame lengths of **32.1 feet** for a 30-MPH "*rare event*" southwest wind in FM SCAL 18 (Refer to Table 3.8.4-2). In contrast, flame lengths in treated fuels will approach **12.7 feet** in length during a 30-MPH southwest wind (Table 4.6-4). Again, fuel modifications and "firewise" landscaping around all structures would provide adequate protection for structures during extreme wildfire conditions in the area.

CHAPTER 4. PROJECT ANALYSIS OF PROJECT EFFECTS AND MITIGATION MEASURES

4.1 Adequate Emergency Services

This commercial/business development is located within the Valley Center Fire Protection District jurisdiction. The FPD provides fire protection and emergency medical services for 84.5 square miles and serves a population of over 23,000 residents.

The VCFPD has indicated in the Project Facility Availability Form that the project is in the FPD and eligible for service. However, there is a requirement by VCFPD Ordinance for participation in a Community Facility District.The primary fire station that will serve the proposed project is Fire Station 72 located at 28234 Lilac Road, Valley Center, California.

The project site is approximately 0.9 mile from Station 72. The emergency response time (a 2-minute departure time from Station 72 plus travel time) to the proposed project is approximately four (4) minutes. VCFPD personnel confirmed that the response time meets the required standard. The development is in an extreme fire severity zone and time required will be mitigated with extensive fuel modification standards, infrastructure construction standards (roads, water supply, etc), and enhanced building standards.

4.2 Fire Access

The primary access to the Miller Road Center Development will be via Miller Road and Valley Center road (public roadways). Access within the commercial development will be via three entrances/driveways (two from Miller Road and one from Valley Center Road).

4.2.1 Access Road. All interior access roadways will comply with the Valley Center Protection District standards. Specific standards for this development includes:

4.2.1.1 Specific interior roadways will be designated "fire access roadways" or "fire lanes".

4.2.1.2 Interior roadways will be marked "fire lane".

4.2.1.3 Minimum unobstructed paved width of interior "fire lanes" will be 24 feet.

4.2.1.4 Emergency vehicle turnarounds will be provided on "fire lanes" exceeding 150 feet in length.

4.2.1.5 Fire access roadways will be within a 150 feet hose line pull from all portions of exterior walls of every building on the development.

4.2.1.6 All roads will be provided with an approved paved driving surface prior to construction and/or bringing combustible building products onto each parcel.

4.2.1.7 Any gate or barrier across a fire access roadway will have specific plans reviewed and approved prior to installation.

4.2.1.8 Loading zones will not interfere with "fire lanes".

4.2.2 Road and Street Grades. The road and street grade standard for the Fire Protection District states that roadways will not exceed 20 percent and that any roadway over 15 percent shall be a concrete surface and have a deep broom finish perpendicular to the direction of travel to enhance traction.

4.2.3 Secondary Access. The entrance driveways in combination with designated and marked "fire lanes" will provide adequate secondary access.

4.2.4 Road Surface. All roadways within the development will be all-weather paved streets capable of supporting fire apparatus weighing up to 75,000 pounds.

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4.3 Water Supply

As previously stated on page 4, The Valley Center Water District has agreed to serve the water needs for this commercial project. Water supply will meet the water supply requirements of the FPD and the County of San Diego for a commercial/business development. Specific requirements will include:

4.3.1 Hydrants, mains and water pressures will be designed to comply with Valley Center Fire Protection District Code requirements, including construction of bronze.

4.3.2 An approved fire hydrant/water supply system will be capable of supplying 2500 gallons per minute fire flow for 2 hours (California Fire Code). Waterlines for fire control must be capable of supplying this required demand through the hydrants, plus the largest fire sprinkler demand, plus any domestic use supplied from that line.

4.3.3 When an on-site waterline serves more than two hydrants, the line must be looped, providing two hydraulically remote points of connection with the water district lines. The interior loop must have isolation valving, such that not more than two hydrants and/or sprinkler systems are between isolation points.

4.3.4 Hydrants will be located along "fire lanes" and will not be further than 150 feet from each structure or as approved by the Fire Chief.

4.3.5 Each hydrant will have the number and size of outlets as follows:
4.3.5.1 One 4-inch and one 2-1/2 inch outlet (4", 2-1/2").
4.3.5.2 One 4-inch and two 2-1/2 inch outlets (4", 2-1/2", 2-1/2").

4.3.6 VCFPD approval will be required for on-site hydrant and fire service waterline based on the final building construction type and largest building size.

4.3.7 Fire hydrants will be located with blue reflective raised pavement markers at approved locations for each hydrant.

4.3.8 All buildings will be fully protected with automatic fire sprinkler system meeting County Building Code and the California Building Standards Code. All valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures and water-flow switches on all sprinkler systems shall be electronically supervised.

4.4 Ignition Resistant Construction and Fire Protection Systems

Construction requirements must meet all then-current County Building Code and State of California Building Codes (Chapter 7A) requirements for construction in wildland areas. Ignition-resistant building requirements found in the County Building Code (more restrictive than the California Building Code) will significantly reduce the threat of wildfire for this development, especially the flying embers entering a structure, landing on a receptive fuel and starting a new fire.

-resistantAppendix 'G' lists appropriate current ignition-resistant construction features. The building features listed below are only to reinforce or exceed current County Building Code requirements wildfire concerns for this commercial development:

4.4.1 Existing minimum requirements for exterior walls of buildings will be constructed with one-hour fire resistant building materials and protected with two-inch nominal solid blocking between rafters at all roof overhangs and under the exterior wall covering (In accordance with SFM 12-7A-1). An exeption recommended to exceed the current County Code will be for the exterior wall on building "A" adjacent to the property line on the east side, will utilize alternative methods and materials to mitigate the 30-foot setback required in Title 14 sectiion 1275.01 for State Responsibilitiy Areas. These mitigations include 1) increased fire rating by installing non-combustible sheathing nailed to the framing and with non-combustible cladding/exterior cover, and 2) automatic sprinkler heads installed on this exterior wall of the building. The site plan also includes construction of a masonary retaining wall along this eastern property line which will further mitigate the setback requirement.

4.4.2 An overall requirement for the eastern exterior wall on Building "A" will be to exclude openings. A requirement for the eastern exterior wall on building "A" would be to exceed

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the current County Building Code requirements for vent opening(s). Vent openings will not be included in this wall unless vent opening coverings exceed the County Building Code requirements (for example, use of vents produced by Valken, Brandguard, etc.).

In order to maintain the function of Building "A",, there is one window required in the eastern exterior wall.(a drive-up type window). This window will be constructed to meet the current County Building Code, which requires that all windows in a wildland area must be tempered glass.

4.4.2

4.4.3

4.4.6

4.4.10

4.4.11

4.4.3 Fire Protection Equipment (e.g. extinguishers): Portable fire extinguishers are required for the proposed buildings (office buildings, convenience store) and shall be mounted on walls near exits with appropriate signage.

4.5 Fire Fuel Assessment

The Miller Road Plaza Project is currently vacant land, generally within a sloping rugged topography that runs from the northwest to the southeast. On-site topography ranges from nearly level to 30 percent slopes with native and non-native vegetation.

There are interspersed homes throughout this area, including the more rugged areas to the northwest and southwest of the project site. These homes and their requirement to meet fuel modification requirements do provide required fuel modifications and lowering of fire threat. This does lower the fire threat and risk to the proposed business and commercial site. It should also be noted that the two major highways on the western and southern boundary to the proposed development site provide significant fire protection during an extreme northeast Santa Ana wind, and strong non-typical prevailing winds from the south and southwest during late season. The fuels in the open space to the northeast (developable in the future) are lighter fuels, but do align with the proposed development. There is an existing plant nursery business with very good landscaping that abuts the southeast boundary of the proposed development.

However, if this project site was left undeveloped and without any fire hazard abatement, the off-site and on-site vegetation would increase in fuel loading and become what would be classified as a Southern California (SCAL 18 – Sage/Buckwheat) fuel model. An extreme fire threat would occur during unusually hot dry conditions, with Santa Ana wind conditions, and/or with any winds out of the northeast potentially gusting up to 60 MPH. In this fuel model scenario, the wildland fire behavior would be expected to produce ***44.1 foot flame lengths*** and

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combustible materials, or constructed with heavy timber such as 2x starter board and 3x6 rafter tails.¶
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skylights, will be constructed of tempered glass or a dual glazed windows with ¶
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Deleted: Metal screens are required on all window assemblies.

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All projections (exterior balconies, stairs, covers, unenclosed roofs and floors, and similar architectural appendages and projections) will be of non-combustible construction, one-hour fire resistive construction on the underside, or heavy timber construction. When such appendages and projections are attached to exterior fire-resistive walls, they shall be constructed to maintain the fire-resistive integrity of the wall. For examples of building products suitable for Zone A, see APPENDIX 'D'.

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All glass or other transparent, translucent or opaque glazing materials, including skylights, will be constructed of tempered glass or a dual glazed windows with minimally with one pane of tempered glass. No skylights will be allowed on the roof assembly facing hazardous vegetation.

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Decorative trim around windows and doors and window shutters may incorporate foam products when at least one of the two following situations is met:

Stucco is applied to wire mesh or similar non-combustible materials and is ½ inch in thickness or more over the entire foam surface.

The foam contains a fire inhibitor that restricts flame spread and has received a Class 1 fire rating and the foam it is applied over stucco that is ½ inch or more in thickness. The product complies with HUD/FHA "Use of Materials Bulletin No. 71" as well as Building Officials and Code Administrators (BOCA), Independent Community Bankers of America (ICBA) and the Southern Building Code Congress (SBCC).

Exterior door assemblies will conform to the performance requirements of standard SFM 12-7A-1 or shall be of approved noncombustible construction, or solid core wood having stiles and rails not less than 1-3/8 inches thick with interior field panel thickness no less than 1-1/4 inches thick, or shall have a fire-resistance rating of not less than 20 minutes when tested according to ASTME 2074.

a rate-of-spread of ***294*** ***feet per minute.***

The Poomacha Fire of 2007 is a very recent wildfire that illustrated the disaster a fire can produce with extreme weather and wind conditions. Photos 1 and 2 illustrate this landscape and existing vegetation.

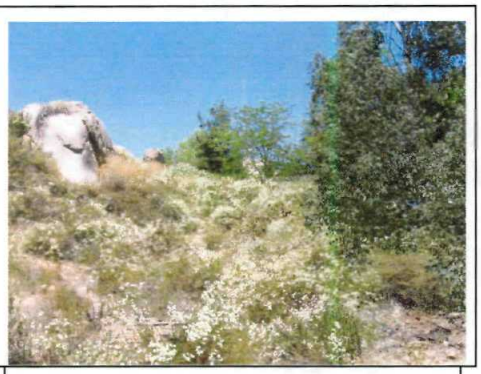

Photo 3: Northwest View from Valley Center Road

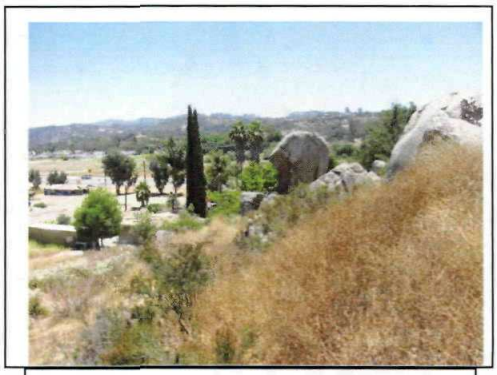

Photo 4: Southeast View from Approximate center of the property

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When placing a business/commercial development interspersed with highly flammable native and exotic vegetative fuels, the goal of this FPP is to minimize any potential loss of life, homes or personal property due to a wildland fire. Structure loss will and can be minimized by applying the following ***FIREWISE*** **2000, Inc.** concepts of:

- Requiring a Class A roof covering assembly, which includes a Class A roof covering, on all portions of the structures.
- Placing fire resistant (1-hour) building materials on all wall surfaces that are less than 100 feet from and face highly flammable vegetation.
- Working with the developer/designer to incorporate fire resistive building features", in each structure and the placement of each structure within the development to minimize any threat from wildland fire.
- Planting and maintaining landscape plantings based on the San Diego County and VCFPD approved plant list. (See APPENDIX 'A')
- Implementing and maintaining an irrigated 100-foot wide Irrigated Zone 1 (low fuel volume/defensible space) around all structures. Additionally, ensure that dead and dying vegetation are removed and/or pruned to defensible criteria. Pruned and mowed vegetation can be either cut and removed or chipped and spread evenly on the ground to reduce weed growth, conserve water and protect the soil from erosion. The depth of the spread chips shall not exceed four (4) inches.
- Installing a commercial fire sprinkler system.

4.6 Fire Behavior Modeling

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All projections (exterior balconies, stairs, covers, unenclosed roofs and floors, and similar architectural appendages and projections) will be of non-combustible construction, one-hour fire resistive construction on the underside, or heavy timber construction. When such appendages and projections are attached to exterior fire-resistive walls, they shall be constructed to maintain the fire-resistive integrity of the wall. For examples of building products suitable for Zone A, see APPENDIX 'D'.

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All glass or other transparent, translucent or opaque glazing materials, including skylights, will be constructed of tempered glass or a dual glazed windows with minimally with one pane of tempered glass. No skylights will be allowed on the roof assembly facing hazardous vegetation.

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Decorative trim around windows and doors and window shutters may incorporate foam products when at least one of the two following situations is met:

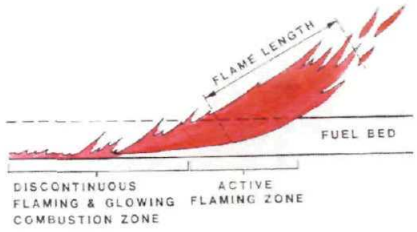
Stucco is applied to wire mesh or similar non-combustible materials and is ½ inch in thickness or more over the entire foam surface.

The foam contains a fire inhibitor that restricts flame spread and has received a Class 1 fire rating and the foam it is applied over stucco that is ½ inch or more in thickness. The product complies with HUD/FHA "Use of Materials Bulletin No. 71" as well as Building Officials and Code Administrators (BOCA), Independent Community Bankers of America (ICBA) and the Southern Building Code Congress (SBCC).

Exterior door assemblies will conform to the performance requirements of standard SFM 12-7A-1 or shall be of approved noncombustible construction, or solid core wood having stiles and rails not less than 1-3/8 inches thick with interior field panel thickness no less than 1-1/4 inches thick, or shall have a fire-resistance rating of not less than 20 minutes when tested according to ASTME 2074.

The minute by minute movement of a wildland fire is never totally predictable, and is certainly not predictable from weather conditions forecast many hours before the fire. Nevertheless, practice and experienced judgment in assessing the fire environment, coupled with a systematic method of calculating fire behavior, yields suprisingly good results (Rothermel, 1983).

The primary driving force in the fire behavior calculations is the dead fuel, less than one-fourth inch in diameter; these are the fine fuels that carry the fire. Fuels larger than 1/4-inch contribute to fire intensity, but not necessarily to fire spread. The BEHAVEPLUS 3.0 fire model describes a wildfire spreading through surface fuels, which are the burnable materials within six (6') feet of the ground and contiguous to the ground. Regardless of the limitations expressed, experienced wildland fire managers can use the BEHAVEPLUS 3.0 modeling system to project the expected fire intensity (expressed as Btu/ft/sec), rate-of-spread (feet/minute) and flame lengths (feet) with a reasonable degree of certainty for use in fire protection planning purposes. Of these three fire behavior projections, flame length is the most critical in determining structure protection requirements.



↑ **Figure 1: Description of Flame Length (Expressed in Feet)**

The BEHAVEPLUS 3.0.1 Fre Behavior Prediction and Fuel Modeling System by Patricia L. Andrews and Collin D. Bevins, is one of the best systematic methods for predicting wildland fire behavior. The BEHAVE PLUS 3.0.1 fire behavior computer modeling system was developed by USDA–Forest Service research scientists at the Intermountain Forest Fire Laboratory, Missoula, Montana, and is utilized by wildland fire experts nationwide. "Because the model was designed to predict the spread of a fire, the fire model describes the fire behavior only within the flaming front".

Wildland fire behavior calculations have been projected for the hazardous vegetative fuels on the undeveloped sites adjacent to, immediately bordering and within the proposed Miller Road Plaza Project. These projections were based on the following above-average Valley Center area fire weather condition assumptions:

Scenario #1 & 2: North, Northeast and East Wind Condition Fuel Moisture Assumptions. (60-MPH Santa Ana Wind Condition). ***This type event often occurs two or three times a year***.

- 1-Hour Fine Fuel Moisture of 2%
- 10-Hour Fuel Moisture of.....3%
- 100-Hour Fuel Moisture of.....5%
- Live Herbaceous Fuel Moisture of.....30%
- Live Fuel Moisture of.....50%

Scenario #3 & 4: Southwest and West Wind Condition Fuel Moisture Assumptions. Late fire season strong non-typical (30-MPH) southwest wind pattern. ***This is a rare event, causing the following fuel moisture conditions; occurs only one or two times in a ten year period frequency cycle***.

- 1-Hour Fine Fuel Moisture of 2%
- 10-Hour Fuel Moisture of.....3%

- 100-Hour Fuel Moisture of.....5%
- Live Herbaceous Fuel Moisture of.....30%
- Live Fuel Moisture of.....50%

Behavior Summary. The following Tables summarize the expected wildland fire behavior for the key National Standard Fuel Models found within and adjacent to the proposed business/commercial development under the worst case scenarios.

Tables 4.5-1 through Table 4.5-4 display the expected Rate of Fire Spread (expressed in feet per minute), Fireline Intensity (Btu/ft/sec) and Flame length (feet) for four different BEHAVEPLUS - Fire Behavior Prediction and Fuel Modeling System fuel model computer calculations. All of these calculations are based on forecast vegetation conditions of a typical Fuel Model SCAL 18 - Coastal Sage Scrub. Variables were slope, projected wind speed, and the anticipated weather.

Table 4.5-1 (Scenario #1 Weather Conditions) **Expected Fire Behavior along the north and northeast with 60-MPH Gusting Northeast Wind (Santa Ana) in a Fuel Model SCAL 18.**		
Rate of Spread	**294**	**feet/minute**
Fireline Intensity	**21329**	**BTU's/foot/second**
Flame Length	**44.1**	**feet in length**
Additional Fire Behavior Calculation Input: • **30 percent downhill slope** • **60 mph 20-foot wind speed (24 mph mid-flame wind speed)** • **190° direction of wind vector to North slope**		

Treated - Table 4.5-2 (Scenario #2 Weather Conditions) **Expected Fire Behavior with an 60-MPH Northeast Santa Ana Wind Along the Northern and Northeastern Perimeter. The Fuel Model After Treatment would Closely Resemble Fire Behavior of a Fuel Model 1 (50%) – Grass and Fuel Model 9 (50%) - Tall Shrubs.**		
Rate of Spread	**467**	**feet/minute**
Fireline Intensity	**1641**	**BTU's/foot/second**
Flame Length	**13.6**	**feet in length**
Additional Fire Behavior Calculation Input: • **30 percent downhill slope** • **60 mph 20-foot wind speed (24 mph mid-flame wind speed)** • **190° direction of wind vector to North**		
Comments: Expected fire intensity and flame length will be considerably less than the above calculations due to the 50% thinning of the native vegetation and complete removal of all highly flammable species.		

Table 4.5-3 (Scenario #3 Weather Conditions) Expected Fire Behavior Along the Southwestern Perimeter in a "*Rare Event*" 30 MPH Southwest Wind in SCAL 18 Fuel Model in the Summer or Early Fall.	
Rate of Spread	147 feet/minute
Fireline Intensity	10695 BTU's/foot/second
Flame Length	32.1 feet in length
Additional Fire Behavior Calculation Input: • 30 percent uphill slope • 30 mph 20-foot wind speed (12 mph mid-flame wind speed) • 45° direction of wind vector to North slope	

Treated - Table 4.5-4 (Scenario #4 Weather Conditions) Expected Fire Behavior for a Wildland Fire Burning During a 30-MPH South or Southwest Wind. Fire Behavior (Once Implemented and Maintained) Would Closely Resemble the Fire Behavior of a Fuel Model 1 (50%)- Grass and Fuel Model 9 (50%) - Tall Shrubs.	
Rate of Spread	396 feet/minute
Fireline Intensity	1415 BTU's/foot/second
Flame Length	12.7 feet in length
Additional Fire Behavior Calculation Input: • 30 percent uphill slope • 30 mph 20-foot wind speed (12 mph mid-flame wind speed) • 45° direction of wind vector to North	
Comments: Expected fire intensity and flame length will be considerably less than the above calculations due to the thinning of the native vegetation and complete removal of all highly flammable species.	

4.7 Defensible Space and Vegetation Management

The VCFPD has classified the entire Valley Center area as an extreme fire hazard area. The major threat of a wildland fire for the Miller Road Plaza Project is from the north and northwest. Coastal Sage Scrub (SCAL 18) fuel model dominates this transition zone landscape with inclusions of High Load, Dry Climate shrubs or Fuel Model Sh5. As stated on page 3, the western and southern boundary abuts two major roadways, and a portion of the eastern boundary abuts an existing well landscaped and maintained business parcel. The fuel loads in northeastern corner of the development are lighter fuels with surrounding agricultural areas, but the project is in line with the extreme northeast (Santa Ana) winds.

Fuel Model SCAL 18 would include hard woody shrubs such as scrub oak (*Quercus berberidifolia*), chamise (*Adenostoma fasciculatum*), Ramona Lilac (*Ceanothus tomentosus*) Cupleaf Ceanothus (*Deanothus greggii* ssp. *perplexans*) and Sugarbush (*Rhus ovata*). Also present are various soft-woody shrubs including California Sagebrush (*Artemisia californica*), Laurel Sumac (*Malosma laurina*), San Diego Monkey flower (*Diplacus aurantiacus*), and Our

Lord's Candle (*Yucca whipplei*). The disturbed and barren areas often contain ripgut brome (*Bromus diandrus*), Perennial Mustard (*Brassica geniculata*) and others.

Structure ignitions from wildland fire fuels basically come from two sources of heat: convective firebrands (flying embers) and radiant heat. Convective firebrands, transferred during periods of high fire intensity and strong dry winds, have the capability of being transported over long (several hundred feet and up to several miles) distances.

"Firewise" landscape management is the act of converting native vegetative fuels from a highly flammable and high fire intensity state to a more fire resistant and low fire intensity condition. *"Firewise"* landscaping has been proven to be the most effective treatment for minimizing structure losses due to wildland fire radiant heat.

There are three principal factors responsible for structure ignitions:

- Flame radiation
- Flame impingement – convection
- Firebrands (convective embers)

Radiation and convection – These involve the transfer of heat directly from the flame. Unlike radiation heat transfer, convection requires that the flames contact the structure. Firebrands involve the aerial transport of burning materials to a combustible fuel receptacle (structure, roofing, open vents, etc.) from vegetation or other burning materials. Ignitions from radiation (given an exposed flammable surface) from radiation heat transfer depends on two aspects of the flame: 1) the radiant heat flux to a combustible surface, and the duration (length of time) of the radiant flux. The radiant heat flux depends on the flame zone size, flame-structure distance, and how much the combustible material of the structure is exposed to the flame. Fire agencies consider vegetation management as a principal approach to wildland fire hazard reduction. Whenever the flame length, one-to-two minutes in duration or more, is equal to or more than the separation of combustible vegetation column, ignition of the vegetation column may occur. However, the temperature of the column's gasses are generally not as hot or long enough in duration to sustain the ignition of the structure.

Firebrands – Firebrands are pieces of burning materials that detach from a burning fuel due to the strong convection drafts in the burning zone. Firebrands can be carried a long distance (one mile or more) by fire drafts or strong winds. Severe wildland/urban interface fires can produce heavy showers of firebrands. The chance of firebrands igniting a structure will depend on the size of the firebrand, how long it burns after contact, and the type of building materials, building design, and construction sources for structure ignition. They can also enter a structure through unscreened vents, decks and chimneys, non-metal skylights and other overhangs. Even with non-combustible roofing, firebrands landing on leaves, needles, and other combustibles located on a roof (due to lack of maintenance) can cause structure ignition. Any open windows, doors or other type of unscreened openings are sources for embers to enter a structure during a wildland fire.

A key concern for the Miller Road Center development is convective embers from a wildfire burning in extreme conditions in the off-site fuels to the northwest of the development. This is the reason that the use of irrigated "firewise" landscaping and the use of ignition resistive construction materials, fire protection systems and fire protection equipment will be prescribed for this development.

Defensible Space - Below are the descriptions of the required fuel modification treatments for structures and facilities within this business/commercial project. To further mitigate wildfire

impacts, the owner shall prune any trees and shrubs that are established in common areas free of all deadwood, remove the tree canopy that overtops any portion of a structure and thin the canopy to maintain the vegetation to ANSI A300-1995 – Standard For Tree Care Operations, Tree, Shrub, And Other Woody Plant Maintenance. By maintaining the vegetation to this standard, improved health and vigor will be obtained while enhancing fire resistance. Sidewalks, concrete patios, decorative rock, natural boulders on-site, and similar landscape features may be included as features will not support fire.

The California Fire Code requires that a minimum of 100 feet of fuel modification be constructed and maintained around all structures in a development such as the Miller Road Center. For this Project, this will be implemented by defining two Zones within this 100 feet. Zone 1 will be defined as the perimeter of the development and at least 50 feet of fuel modification beyond any structure, particularly around the office/retail structure in the northeast corner. An exception will be the manufactured slope in the north and northeast corner of the development. Zone 1 will be planted and maintained with "firewise" landscaping (see Fire Protection Plan Map). Zone 1 is often called the "defensible space" around structures.

Zone 2 is the area 50 feet beyond Zone 1 where the fuel volume of native vegetation will be thinned by 50 percent or removed and re-planted with the same canopy coverage (50 percent) with fire resistive "firewise" landscaping. See APPENDIX 'A' - Customized Acceptable Plant List for listing of desirable plant materials for a "firewise" landscape. It will also include the removal of undesirable species (See APPENDIX 'B'). There will be permanet markers on the ground delineating the perimeter of the 100 feet of fuel modification for this project.

The plot plan indicates that there will be manufactured slope on adjacent land private land. The owner will be responsible for acquiring and recording with the County an easement with the adjacent landowner to accomodate this grading plan.

Following are the two fuel modification zones defined in this Fire Protection Plan:

4.7.1 Fuel Modification Zone 1 - Irrigated.

4.7.1.1 This Zone will be irrigated (micro-irrigation acceptable when overhead irrigation may cause erosion). It includes the manufactured slope on the northern and northeastern boundary. Landscaping material from the approved plant list (see APPENDIX 'A') required or as approved by the Fire Marshal.

4.7.1.2 All undesirable non-native vegetation (See APPENDIX 'B') will be removed. Re-planting will be with drought tolerant, fire resistive fire-resistant landscaping.

4.7.1.3 Vegetation may include single or cluster of trimmed fire resistant native and ornamental plants (oaks, sumac, toyon, or See APPENDIX 'A')

4.7.1.4 Dense plant masses adjacent to the structures and at bases of trees and tree clusters will not be placed in this Zone. Provide low growing, fire resistive, deep rooted, drought tolerant planting to maintain erosion control and soil stability, especially on manufactured slopes.

4.7.1.5 Native or ornamental trees retained within fuel modification zones will be pruned to maintain a vertical separation of approximately ten (10) feet above underlying shrubs or groundcover. Pruning of the shrubs will minimize the impact of the tree pruning.

4.7.1.6 Trees and large shrubs over 15 feet in height (oaks, sumac, toyon, etc.) pruned to provide clearance between plants of three (3) times the height of understory plants, or10 feet, whichever is greater.

4.7.1.7 Large continuous masses of shrubs and understory less than 15 feet in height will be thinned to remove fuel and provide at least ten (10) feet between shrub masses, or individual shrubs. Thinning will reduce the overall canopy coverage of the area a minimum of fifty (50) percent.

4.7.1.8 If shrubs are located underneath a tree's drip line, the lowest branch shall be a least three times as high as the under story shrubs or 10 feet, whichever is greater.

4.7.1.9 Trees may be planted and/or maintained as individual specimens, or clustered with no more than three (3) trees in a single cluster with a minimum distance between mature canopies of 20 feet; avoid planting trees directly uphill of one another.

4.7.1.10 Tree canopies will not be allowed to overhang the roof of any structure; the outer edge of the canopies of mature trees will be a minimum of ten (10) feet from the building eaves, and free of all dead or dying parts. All the dead material must be pruned out of all vegetation on an as needed basis.

4.7.1.11 Mature heights of new shrub plantings will be a maximum of 36 inches.

4.7.1.12 Mulches, chips and other small multi-cuttings (cut to less than two inches in diameter and four inches in length) shall be evenly spread over the area no more than 4 inches at least 50 feet from structures. This can be used to maintain soil moisture and prevent grass and weed encroachments within the treated areas. Regular maintenance, vegetation pruning, and continued irrigation are most important in this Zone.

4.7.1.13 Firewood or other combustible materials will not be stored in unenclosed spaces beneath buildings or structures, or on decks or under eaves, canopies or other projections or overhangs. Storage may occur in the defensible space located a minimum of 20 feet from structures and separated from the crown of trees by a minimum of 10 feet, measured horizontally.

4.7.1.14 Certain ornamental plants shall not be planted or allowed to become established within the Zone unless otherwise noted in the recommended Plant List in APPENDIX 'A' or as approved by the Fire Marshal.

4.7.1.15 As the native vegetation cover in Zone 1 is reduced, there is a very high probability that the openings will be dominated with non-native weed or grass species. Therefore, all grasses and weeds are to be mowed or weed-whipped to a four (4) inch stubble height by June 1st of each year or when the fuels become cured, whichever occurs first. Any vegetation biomass (debris and trimmings) produced by thinning and pruning shall be removed from the site or converted to mulch by chipping and evenly distributed to a maximum depth of four (4) inches.

4.7.1.16 Plants in this Zone will not include any pyrophytes that are high in oils and resins, such as pines, eucalyptus, cedar and juniper species. Trees must be planted so that when they reach maturity their branches are at least 10-feet away from any structure. Refer to APPENDIX "B" for a list of undesirable plantings.

4.7.1.17 Thick succulent or leathery leaf plant species are the most fire resistant, while paper-thin leaves and small twiggy branches are the least fire resistant.

4.7.1.18 If water for irrigation is limited, use more of the available water in Zone 1 than In Zone 2. plants with high moisture content are less likely to burn. Non-flammable patios, walkways, rock, driveways and gravel can be used to break up fuel continuity within this zone.

4.7.2 Fuel Modification Zone 2 –Non-Irrigated. Zone 2 is the area 50 to 100 feet (or more) away from any structure. It is irrigated, but only if needed to establish and maintain "firewise landscaping. Trimmed material can be cut or chipped and scattered as mulch to reduce the threat of erosion and restrict the growth of herbaceous and grass vegetation. Fire-resistant landscaping criteria are important in this zone.

4.7.2.1 Zone 2 is the area 50 to 100 feet from structures where the fuel volume will be removed or thinned by 50 percent, including the removal of undesirable species (See APPENDIX 'B').

4.7.2.2 Zone 2 may include single or small clusters of trimmed fire resistant ornamental and/or native plants up to 48 inches in height and trimmed ornamental and native trees limbed up to 6 feet from the ground.

4.7.2.3 If less than 100 feet is available for combined Fuel Modification Zones1 and 2 between a structure and project boundary, see Section 4.2 Ignition Resistant Construction and Fire Systems.

4.7.2.4 This Zone shall only include single or small clusters of trimmed fire Resistant native and ornamental plants, up to 48 inches in height, and trimmed native or ornamental trees limbed up six feet (or 1/3 the height of the tree), whichever is the greatest.

4.7.2.5 Selected firewise plant clusters must be separated by at least 1 ½ times the fully developed height of the retained plants.

4.7.2.6 All of the dead material must be pruned out on an as needed basis, but at least annually each spring.

4.7.2.7 As the native vegetation in Zone 2 removed or reduced, there is a high probability that the openings will be dominated with non-native weed or grass species. Therefore, all grasses and weeds will be mowed or weed-whipped to a four (4) inch stubble height by June 15th of each year or when the fuels become cured, whichever occurs first. Any vegetative biomass (debris and trimmings) produced by thinning and pruning shall be removed from the site or converted to mulch by chipping and evenly distributed to a maximum depth of four (4) inches. This mulching concept helps to maintain soil moisture for the designated plants, reduces the growth of annual grass and minimizes soil erosion.

Fire Behavior Summary. ***FIRE*****WISE 2000, Inc**. used the computer based BEHAVE Fire Behavior Prediction Model 3.01 to make four (4) fire behavior assessments for this development. Two of these were for potential natural fuel conditions and two for the recommended fuel treatments. The above referenced Tables 4.5-1 through 4.5-4 summarize the results of the Fire Fuel Assessment (Fire Model) expected wildland fire behavior for the key

National Standard Fuel Models found within and adjacent to the proposed development under the worst case scenarios.

SUMMARY FIRE BEHAVIOR TABLE

TABLE 4.5-1 – 60-mph Northeast Wind

Prior to Fuel Treatment			
Rate of Spread	294 Ft/min		
Fireline Intensity	21329 BTU/ft/sec	VS.	
Flame Length	44.1 Feet		

TABLE 4.5-2 - 60-mph Northeast Wind

After Fuel Treatment	
Rate of Spread	467 Ft/min
Fireline Intensity	1641 BTU/ft/sec
Flame Length	13.6 Feet

TABLE 4.5-3 – 30-mph Southwest Wind

Prior to Fuel Treatment			
Rate of Spread	147 Ft/min		
Fireline Intensity	10695 BTU/ft/sec	VS.	
Flame Length	32.1 Feet		

TABLE 4.5-4 – 30-mph Southwest Wind

After Fuel Treatment	
Rate of Spread	396 Ft/min
Fireline Intensity	1415 BTU/ft/sec
Flame Length	12.7 Feet

4.8 Cumulative Impact Analysis

The combination of San Diego County's weather, fuel, and terrain has often contributed to intense, uncontrolled wildland fires. This was clearly evident in the devastating Cedar, Paradise and Otay fires of October 2003, and the Witch Creek and Poomacha Fires of 2007 which were devastating in the local Valley Center area. The areas of greatest concern are adjacent to urbanized areas or where residences are intermixed with wildlands.

The following identifies how this business/commercial development would contribute to the impact of this site and this general area. It is key that the following mitigation measures for this development proposal (e.g., project compliance with codes/standards) are enforced.

4.8.1 With the attraction of this commercial development for gas, food and business, it could impact emergency services. It is not anticipated, however, that significant impact will occur with the implementation and maintenance of the emergency access mitigation measures that are outlined in the plan. However, there shall be a reguirement by a VCFPD Ordinance for participation in a Community Facility District.

4.8.2 This business/commercial development will draw and attract people to the site for gas, food and other business purposes and could slightly increase the risk of property loss, injury or death within the interface with wildlands. With the defensible space provided around all structures with fuels modification, ignition resistant construction, and fire protection systems, the impact will not be significant.

4.8.3 This commercial development may be viewed as setting a precedent for commercial development in the area, but it in itself will not significantly impact the emergency services for the area.

4.8.4 Typically, the areas of greatest concern are adjacent to urbanized areas or where residences are intermixed with wildlands. As the population of San Diego County increases and the Wildland Urban Interface (WUI) expands, fire hazards and risks will continue to be encountered. The approval of this proposal and future development proposals will increase the concern of wildland wildfire as the area

becomes more urbanized. At present, the density of development on this property in San Diego County is low and includes properties compliant with the fuel modification and weed abatement requirements of the County of San Diego and the VCFPD.

Due to the severity of impacts from the improper management of wildland areas, the existing laws are stringent and regulate all aspects of wildland fire including building standards, fuel modification, water availability/flow, and access. This fire protection plan prepared for the Miller Road Plaza Project demonstrates compliance with the applicable regulations. It will ensure adequate compliance with codes/regulations and significance standards, including required fuel modifications and construction with fire resistive materials. In addition, it will be done by incorporating this Fire Protection Plan by reference into the final project Conditions of Approval.

CHAPTER 5. FUEL TREATMENT LOCATION MAP (Attached)