

**FIRE PROTECTION PLAN  
FOR  
BENNETT MINOR SUBDIVISION  
TPM 20784/ER 03-21-009  
GARZA MINOR SUBDIVISION  
TPM 20777/ER 03-21-006  
POWELL MINOR SUBDIVISION  
TPM 20798/ER 03-19-028**

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## **1.0 INTRODUCTION**

This report represents a combined Fire Protection Plan for three proposed projects, TPM 20784 the Bennett Minor Subdivision, TPM 20777 the Garza Minor Subdivision and TPM 20798, the Powell Minor Subdivision. The County requested a combined report for the three parcels due to their adjacency. The proposed projects total 143.07 acres. The proposed parcels range in size from 8.48 to 18.77 gross acres. In addition, the three projects propose 74.3 acres of open space. These proposed project sites are located southwest of the community of Boulevard and west of Tierra del Sol and the Tecate Divide (Figure 1). The project areas are approximately 1-mile south of Highway 94 and 1/4 mile east of the Campo Indian Reservation. They are accessible from Shasta Lane.

The purpose of this Fire Protection Plan (FPP) is to meet the requirements of the County of San Diego Fire Marshal regarding fire safety in the Urban-Wildland Interface for the three minor subdivisions. County Policy I- 84 allows for the County Chief Fire Inspector to require a Fire Protection Plan to identify mitigation measures when adequate fire protection services are not available. In addition, Article 86 of the 2001 edition of the California Fire Code indicates that a Fire Protection Plan shall be required for all new development within the Urban-Wildland Interface.

The projects are located in the jurisdictional areas of the Department of Forestry and Fire Protection and within the Boulevard Volunteer Fire Department (CSA 111). The Project Services Availability Forms for the projects indicates that fire protection services are currently inadequate.

The following Fire Protection Plan addresses water supply, access, building ignition and fire resistance, fire protection systems and equipment, defensible space, and vegetation management in accordance with the requirements of Article 86. When developing mitigation measures the location, topography, geology, flammable vegetation, and climate were taken into consideration.

## **2.0 WATER SUPPLY**

The County of San Diego Fire Code allows for water supply to be provided by tanks or an extension of a water utility line if it is located within 1500 feet of the property line. The Fire Agency Recommendation Letter from the County of San Diego dated September 21, 2004 for this project requires that a 10,000 gallon tank and hydrant shall be provided on each parcel to the satisfaction of the County Fire Marshal prior to issuance of a building permit. In conformance with Section 903.3.2 of the Consolidated Fire Code (CFC) (County of San Diego 2001) water storage tanks will meet the following criteria:

1. Tank elevation shall be equal to or higher than the fire department connection on the premises (hydrant). Regardless of domestic use the tank shall be equipped



with a device that will ensure that the tank contains 10,000 gallons of water to provide 250 gallons per minute for a duration of 40 minutes.

2. Supply outlet shall be at least 4 inches in diameter from the base of the tank to the point of inlet at the hydrant. The fire department connection on the hydrant shall be at least one 4-inch National Standard Thread (male), reduced to one 2 ½-inch National Standard (male). Additional outlets maybe required.
3. Location of the hydrant shall be shown on the plot plan when submitted to the fire department.
4. The hydrant shall be located along the driveway or private road and shall not be closer than 50 feet nor greater than 150 feet from the farthest point of the structure.
5. All exposed tank pipes shall be of an alloy or other material listed for above ground use. Adequate support shall be provided.
6. Water storage tanks shall be constructed from materials approved by the fire marshal and installed per manufacturer recommendations.

Furthermore, in conformance with Section 903.4.2.2.3 of the CFC, all fire hydrants shall be of bronze construction, including all internal parts except seats. Alternate materials may be used if approved by the County Fire Marshal. The number and size of fire hydrant outlets shall be identified by the fire marshal as discussed in item 2 above.

### **3.0 ACCESS**

Fire apparatus access roads are required in conformance with Section 902.2 of the CFC and the March 29, 2004 letter from the County of San Diego identifying the fire agency recommendations. The fire apparatus access road(s) shall meet the following specifications:

1. Fire apparatus access roads, shall be improved to 24' with an all weather surface to the public right of way. In addition, this road shall have a vertical clearance of 13' 6''.
2. Individual driveways serving as fire apparatus access roads (when the furthest most portion of the structure is greater than 150' from "Street A" or "Street B"), shall be at least 16 feet wide, improved with and an all-weather surface, and a minimum vertical clearance of 13'6''.
3. Streets "A" and "B" shall terminate in a minimum 36' radius improved all weather surface cul de sac.
4. Private driveways greater than 150' in length shall be provided with a means of turning the fire apparatus around approved by the County Fire Marshal.

5. No parking shall be allowed on roadways and driveways designated as “fire lanes”. They may be required to be posted as fire lanes per California Fire Code and California Vehicle Code §22500.1.
6. Access roadways and driveways shall not exceed 20% slope. Minimum driveway surface material shall depend on the slope as follows:
 

0-10% slope	4” decomposed granite
11-15% slope	2” asphaltic concrete
16-20% slope	3” asphaltic concrete

The roadway must provide an all-weather driving surface capable of supporting the imposed weight of fire apparatus, not less than 50,000 pounds. Paving and sub-base shall be installed to the standards specified in section I-M of County of San Diego Off-Street Parking Manual.

7. The proposed streets “A” and “B” shall be named and a street sign provided in conformance with County of San Diego Department of Public Works Design Standard #DS13.
8. Addresses shall be placed at appropriate locations and be plainly visible and legible from the street fronting the property from either direction of approach. Said numbers shall contrast with their background and shall meet the following minimum standards as to size: 4” high with a 3/8” stroke.

#### **4.0 FIRE RESISTANCE AND FIRE PROTECTION SYSTEMS**

County Fire and Building Codes prescribe fire-resistive construction elements in the Urban-Wildland Interface. Because of the potential for wildfire ignition of structures based on terrain, vegetation and weather, the structures shall meet the more restrictive category, enhanced fire resistive, regardless of fuel modification zone dimensions. More restrictive (“enhanced”) requirements shall also be applied to decks, carports, patio covers and similar structures regardless of their location relative to fuel modification zones.

- Residences shall have automatic fire sprinkler system installed per NFPA 13-D and the County of San Diego Requirements.

#### **5.0 ZONES OF IRRIGATION AND BRUSH MANAGEMENT**

Several factors were taken into consideration when developing the fuel modification zones and management of the zones including topography, degree of exposure, lot size, and proximity to biological open space. In addition, the plan was developed with watershed protection and suitability of proposed plant species with regard to adjacency to

biological open space as a consideration. Fire modeling was performed using BehavePlus 3.0 for the worst case scenario which is a Santa Ana. The Incident Status Summary report for the Cedar Fire indicated that winds were gusting at 75 MPH.

Fuel modeling was performed for the projects using two fuel models, chaparral and manzanita. Three runs were performed for each fuel model. The runs differed in the slope aspect and were 0, 45 and 90 degrees from north. The remainder of the variables were the same for each run. The slope was calculated by placing a line adjacent to the pad on the north, north-east and/or east and off-setting it by 100 feet. The elevation change was then measured to determine the slope. The locations of slope calculations are indicated on Figure 2. The steepest slope occurs is 16%. In order to have a conservative estimate of flame length a slope of 20% was used in the model. The results for chaparral indicate a flame length of 104.5 feet. The model for manzanita which is more similar to the vegetation on because it is less dense resulted in a flame length of 33 feet. In order to have a conservative estimate the flame length for chaparral was used. A copy of the modeling is included as Appendix A, although labeled for TPM 20777 it applies to all three projects. Fuel management zones are depicted in Figure 2.

## **5.1 Zone A**

Fire modeling for the worst case scenario, Santa Ana conditions with a 75 mph hour wind and low air and fuel moisture indicates that flame lengths will be approximately 104.5 feet. As a result, Zone A has been depicted in Figure 2 as being a minimum of 115 feet around the proposed house pads, and existing residence. This level of fire clearing can not assure that structures will not be lost in a catastrophic fire, however it is felt that it is a reasonable zone, that when coupled with enhanced fire resistive construction increases the probability that the structures will not be lost. Where Zone A for proposed parcels overlaps more than one parcel Zone A was grouped. In addition the lines were straightened to include small areas that would not be included if Zone A was depicted separately for each of proposed parcels. This approach provides a larger zone than would other wise be provided.

Zone A is composed of a minimum of a 115 foot area surrounding the proposed pads that shall have fuel management as described below to reduce and maintain fuel loads. If landscaped and planted, Zone A plantings shall not create fire hazards near structures. The following measures will reduce fire hazards near buildings:

- Highly flammable plants adjacent to structures are prohibited.
- Except for prostrate varieties, acacias, cedars, cypress, eucalyptus, juniper, pines, rosemary and California pepper shall not be planted within Zone A.
- Plants will only be selected from the County of San Diego “Acceptable Plants for a Defensible Space in Fire Prone Areas” included as Appendix B or other as approved by the Fire Marshal.



- Trees shall not be planted closer to structures than the distance equal to the tree's mature canopy plus 10 feet.
- Tree canopies shall be separated by 20 feet.

### Brush Removal

Brush will be removed within Zone A in the following manner:

- Portions of Zone A included within the limits of grading will have the vegetation removed within the limits of grading during grading operations.
- Portions of Zone A outside of the limits of grading, and not proposed to be immediately landscaped shall have vegetation removed by cutting approximately 6 inches above the surface of the ground. The roots shall not be disturbed in order to prevent soil erosion.
- Native tree and tree form shrub species may be retained in this zone provided they are pruned and thinned in conformance with the specifications set forth in Section 5.1, Thinning and Pruning, are not within 10 feet of structures and have 20 feet of separation between canopies.
- Stumps will be treated with herbicide to help prevent regrowth.
- Debris and trimmings produced by brush removal shall be removed from the site.

### Irrigation

Permanent irrigation shall be provided in Zone A to ornamental plantings. Irrigation within Zone A will conform to any applicable County Landscape Requirements.

### Maintenance

Maintenance within this zone shall be performed year-round and include the following tasks:

- Prune and thin trees (Figures 3 and 4) around structures to decrease fuel volume, retain succulent growth and to provide adequate clearance between structures and plants.
- Tree branches overhanging roofs shall be removed.
- Trash and combustible debris shall be cleared around structures, and removed from roofs and rain gutters.
- Irrigation systems will be maintained to ensure that they function properly and plantings are watered sufficiently to maintain succulent growth.

### Thinning and Pruning

Figure 3, below illustrates how native trees retained and planted trees shall have a minimum canopy separation of 20 feet.

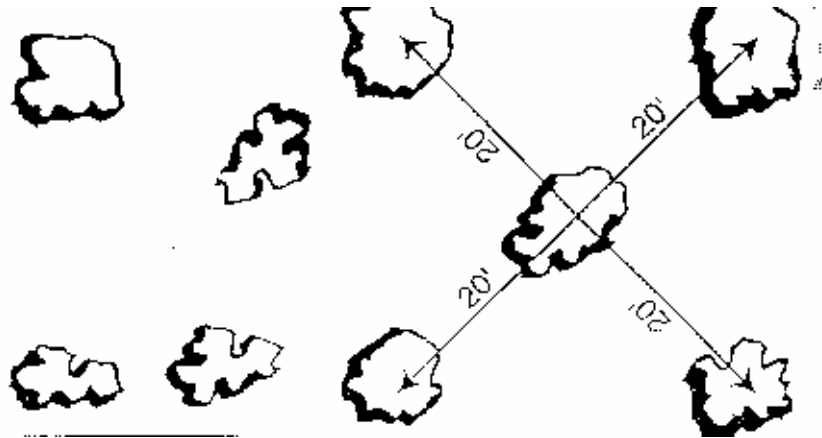


Figure 3. Thinned Trees

Pruning will further reduce the fuel load. Pruning shall be accomplished in the following manner:

- Individual trees and shrubs will be pruned to remove dead, dying and excessively twiggy growth. Figure 4, below illustrates the desired result of pruning.



Unpruned Shrub

Pruned Shrub

Figure 4. Pruning of Landscape Shrubs and Retained Trees

- Trees and larger tree form shrubs shall be pruned to provide clearance of three times the height of the understory plant material or six feet whichever is higher. Figure 5, below illustrates this requirement.

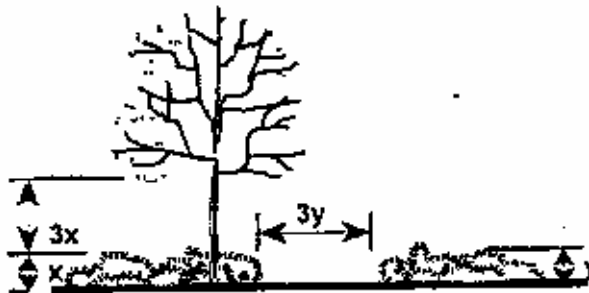


Figure 5. Pruning Trees and Tree Form Shrubs for Brush Management

## 5.2 Zone B

Zone B is the remainder of the proposed parcel outside of Zone A and the Proposed Open Space as depicted in Figure 2. Zone B can either be cleared in conformance with Zone A above, selectively cleared and modified as described below, or left natural. No noxious weed species will be planted within this zone due to the adjacency of the open space. For the purposes of this plan noxious weed species shall be those included on List A and B of the California Exotic Pest Plant Council's list of "Exotic Pest Plants of Greatest Ecological Concern in California as of October 1999" (or more recent version), and the list of Undesirable Plants and Weeds, both of which are included in Appendix C.

### Fuel Modification

If fuel modification is implemented to reduce fuel load then the following should sufficiently reduce fuel load to increase the fire safety of the overall parcels. This zone Native plant species maybe selectively thinned by 50% and pruned by 40% to provide fuel discontinuity and a reduction in the fuel load. Figure 6, below illustrates the desired result of the thinning within this zone.

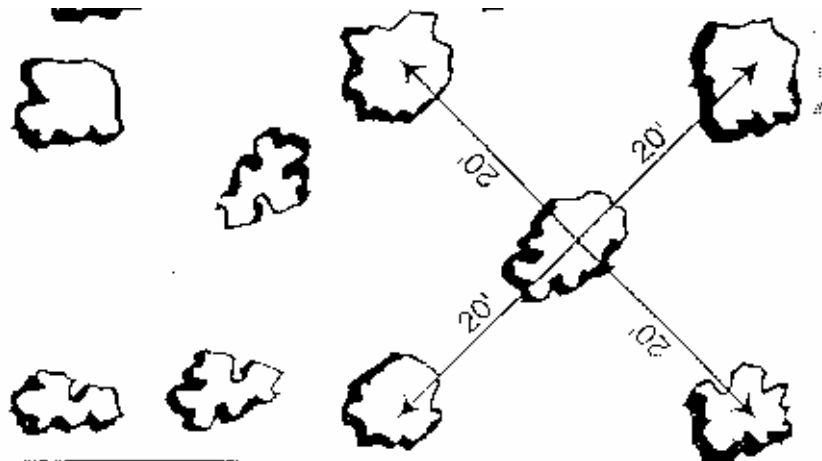


Figure 6. Natural Vegetation thinned by 50%.

### Thinning

Thinning maybe accomplished in the following manner:

- Retaining shrubs species in suitable densities will result in reducing erosion as a result of brush management due to their deep root systems. Pruning of the plants retained will reduce the fuel load.
- Plant species to be removed shall be cut at approximately 6 inches above the soil. In order to prevent erosion plants shall not be removed by their roots.
- Stumps of plants removed shall be painted with an herbicide to help prevent resprouting.
- Debris and trimmings produced by thinning and pruning shall be removed from the site.

## Pruning

Pruning of the plants retained will further reduce the fuel load. The hard chaparral species targeted for retention can be shaped into attractive fire safe specimens by pruning dead and excessively twiggy growth. Pruning shall be accomplished in the following manner:

- Individual plants retained will be pruned to remove 40% of the flammable fuel. Pruning should remove dead, dying and excessively twiggy growth. Figure 7, below illustrates the desired result of pruning.



Figure 7. Pruning of Retained Vegetation

- Trees and larger tree form shrubs (i.e. manzanita and redshank) which are being retained shall be pruned to provide clearance of three times the height of the understory plant material or six feet whichever is higher. Figure 8, below illustrates this requirement.

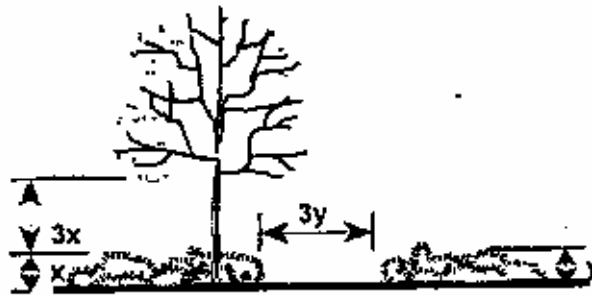


Figure 8. Pruning Trees and Tree Form Shrubs for Brush Management

- All plants retained including tree form shrubs shall be separated by a distance three times the height of the tallest adjacent plants (Figure 8).
- Debris and trimmings produced by thinning and pruning shall be removed from the site.

## **6.0 RESPONSIBILITIES**

The following section identifies the responsible parties for conformance and implementation of this plan.

### Conformance

The ultimate responsibility for conformance with the fire protection plan lies with the landowner as identified on the County Tax Assessor records.

### Conformance Approval

Conformance approval is under the jurisdiction of the County Fire Marshal.