Fire Protection Plan
For
TPM 20756
at
Hauser Creek Road, Campo, California

July 13, 2005

Prepared by:
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2510 Palm Avenue
San Diego, California 92154
FIRE PROTECTION PLAN FOR ARELLANO TPM # 20756

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1. **INTRODUCTION/ PROJECT DESCRIPTION:**

**A. INTRODUCTION**

This is the Conceptual Fire Protection/Vegetation Management Plan for the Arellano project in Lake Morena California. The current TPM # is 20756. This plan is required by the San Diego Rural Fire Protection District (RFPD) and the County of San Diego Department of Planning and Land Use (DPLU). The plan was prepared by David Arellano - owner. The scope of the plan is limited to addressing and pursuing mitigation of the wildland fire threat to and from a structure, compliance with the Fire Code Article 86; “Fire Protection Plan; Urban-Wildland Interface areas” and the requirements of the RFPD and the DPLU. Any recommendations are subject to any legal environmental, cultural or resource laws or constraints, and the plan is subject to approval of the RFPD and the DPLU.

**B. PROJECT DESCRIPTION:**

This project is within the San Diego Rural Fire Protection District. The project site consists of 17.00 acres.

The Assessors Parcel # is 607-090-17
The Tentative Parcel Map # is 20756

The physical location is 2 miles west of Lake Morena Drive, at the west end of Hauser Creek road
The total size of the developed area will be 13.00 acres.
The number of buildable lots will be 3. The parcel size per lot will be 5 to 7 acres.
The types of occupancies are single family residential.
The approximate size of each building is 1500 to 2500 square feet
Closest RFPD fire station on Oak Drive is located in Morena Village and approximately 3.5 miles form the subject site.
Closest public water supply system is approximately 3.5 miles. The onsite water tanks will be within 100 to 150 feet from the proposed single family dwelling.

**Topography:**

The project site encompasses steep to gentle slopes, mild ravines and ridges. The average slope of the property is well under 20%, with 40% of the site ranging from 0% to 15% slopes, and 79% of the site well within 25%. Slopes within 300’ of proposed structural pads range from less than 15% to 50%, however the steeper slopes (25% - 50%) are only found in isolated and scattered areas throughout the site. Elevations range from 2715 feet above sea level (along a swale on the west side of the project) to elevation 2850 on the southwest side and adjacent to Cleveland National Forest lands, and elevation 2830 along the east boundary.
Vegetation on site:

Existing vegetation communities (habitats) on-site include coast live oak woodland, big sagebrush scrub, northern mixed chaparral and non-native grassland. Waters of the U.S. and Waters of the State (Waters) also exist on-site.

Typical weather conditions:

The worst potential fire can occur during the summer months and the fall when Santa Ana winds blow hot dry air from the east. During this time, the existing vegetation is at its driest condition, usually accompanied with low humidity and low vegetation moisture.

2. ON SITE FIRE HISTORY:

The most notable recent fire nearby was the “Star Fire” in 1992. This fire occurred on July 16 during the dry season, and burned 421 acres and the cause of this fire was equipment use according to the California Department of Forestry and Fire Protection. The other notable fire in the area was the “Hauser Fire” of 2000, which burned 275 acres, and was caused by a campfire, according to the United States Forest Service.

Please refer to the Fire History Map – Appendix E

Based upon the description of the weather and the fire behavior, the site can be vulnerable to fires which may not be contained by the first alarm fire units, due to fuel type and winds. However, the site is located along the bottom of the Hauser Creek water course, where vegetation is sparse and low lying.

3. RISK ASSESSMENT:

Estimated Wildland Fire Events:

The most likely wild fire event on site will be caused by a tractor striking a rock, sparks from construction tools, sparks from welding, careless smokers, sparks/ carbon from vehicles, or catalytic converters on vehicles igniting vegetation. This fire will most likely be a spot fire, controlled by property owners or first alarm fire forces, if winds are absent.

The catastrophic fire will most likely occur during the day in late summer. It will most likely start at Hauser Creek Wilderness / Cleveland National Forest. It will be due to carelessly discarded smoking materials, carbon/sparks from vehicle, or arson. This fire will spread rapidly from the west due to high winds, low humidity and low fuel moisture. At night, the wind can change and blow from the east. This fire will be beyond the capabilities of the RFPD and will require response from CDF and other agencies, as well as CDF bulldozers, hand crews and aircraft. The fire could spread through this project in
about 6 minutes, spreading at a rate of 20 miles in one hour. The project is about 2 miles across from West to East. 91’ flame lengths could be experienced. This will be a fire which requires attack from the flanks rather than the head of the fire due to heat, wind and rate of spread. Spotting of burning brands can occur 2 miles ahead of the main fire and start secondary fires. The fire residence time at a structure would probably be less than 10 minutes. Residual fire in vegetation on parcels will burn for hours.

This type of catastrophic fire would not occur every year, but perhaps at a 10 year interval. To put this in perspective, small spot fires, less than 1 acre may occur annually. The most likely type of emergency at this project will be a medical aid, or a fire inside of a structure, controlled by fire sprinklers.

4. DEFENSIBLE SPACE AND VEGETATION MANAGEMENT ZONES:

100 feet of limited building zone is available around all structures- It is recommended that the first 75 feet extending in all directions from the structure consist of non-flammable materials (concrete, lawn, swimming pool) or maintained with low-growing (under two feet), irrigated vegetation. Trees are not allowed in this zone. The next 25 feet may have fire resistant shrubs up to four feet high excluding hedges which might interfere with fire personnel and fire equipment access.

A. Private Lots:

Every structure on every private lot is to have a 30’ “defensible space” around it. This area is identified as “Zone A”. This zone will encircle the structure (all four sides) a minimum of 30’ at which point Zone B will begin.

Note: in some site specific situations, less than 100' Vegetation Management zones may be adequate based upon the risk assessment. However, The absolute minimum, per State law, is 100’.

1. Zone A: Irrigated wet zone (0-50’): There should be no ground cover or grass over 4” in this zone. No flammable ornamental vegetation which can easily ignite and spread fire to structure. No vegetation under vents. No dry grass. No groves, vineyards or orchards. No tree limbs, branches or vines within 10’ of chimneys. Fire resistive, drought adaptive, low fuel volume, high leaf moisture, low dead to live fuel ratio, bedding plants, flowers or shrubs of 18” or less may be allowed if properly maintained and if spaced at 2 times height on slopes less than 20%, 4 times height on slopes 21 to 40%, and 6 times height on slopes over 40%. Shrubs to be 20’ from trees. Single, approved, tree specimens, widely spaced, may be installed beyond 15’ if properly limbed (1/3 height or 8’), pruned, maintained and configured with no dead fuel component. Trees to have 40’
between mature canopies. No chaparral, red shank, chamise, sage, coastal sage scrub, sagebrush, salvia spp., California buckwheat, manzanita. No exotics such as cypress, juniper, acacia, eucalyptus, conifer (such as pine, cedar) palm, camphor, bottlebrush or pampas grass. No pepper or olive trees. No bougainvillea. No firewood, fuel or propane tanks within 30' OF ANY STRUCTURE.

2. **Zone B: "Low Fuel volume zone":** (50' out to 100') depending on vegetation and slope): Ground cover, bedding plants and flowers to be fire resistive, drought adaptive, low profile (not over 2'), low fuel volume, low dead to live fuel moisture, high leaf moisture. No dry grass. No grass over 4'.

No chaparral, red shank, chamise, sage, sagebrush, coastal sage scrub, salvia spp., California buckwheat, cypress, juniper, acacia, eucalyptus, conifer, palm, camphor, bottlebrush, olive trees, pepper trees, bougainvillea, or pampas grass on private lots. However, single specimens of manzanita (if well spaced) may remain if properly pruned, thinned, maintained and configured with no dead fuel component. California sycamore and coastal live oak may be introduced if properly spaced and maintained. Spacing of all plantings is to be 2 X height for slopes less than 20%, 4 X height for slopes 21 to 40%, 6X height for slopes over 40%. Limb up trees 1/3 height or 8'. Large shrubs should have 15' or three times the diameter of individual crowns between them. Trees shall be spaced 30' between mature canopies. Provide 20' between large shrubs and trees.

Break up continuous fuel beds. Separate, limb up, and prune all vegetation. Remove all down and dead fuels. Remove dead fuel component from live vegetation. Break up any contact between ground fuels and aerial (tree) fuels.

Remove all flammable and dead or diseased vegetation on private lots, including any dead orchards, vineyards and groves.

Properly sized chipped biomass (1/4" to 1/2" diameter by 4" to 6" long by 4" deep, with no manure added) may be installed and maintained in landscaped areas 30' and beyond from any structure. The objective is to convert the vegetation to a Fuel Model 8 (slow burning, low heat release fire) and to preclude exotic grasses from regenerating.

**DETERMINATION OF PROPER VEGETATION REDUCTION:**
No highly flammable vegetation will be allowed within 100 feet from the structure and no thinning of vegetation is allowed beyond 100 feet since this area is placed within a biological open space easement (BOSE) which precludes all of the following uses and activities on any land subject to it: grading; excavation; placement of soil, sand, rock, gravel, or other material; clearing vegetation; construction, erection or placement of any building or structure; vehicular activities; trash dumping; or use for any purpose other than open space (County of San Diego 2001).

Vegetation management is not an exact science. Experience and expertise are required in order to make site specific determinations as to what is adequate vegetation reduction. The general criteria presented for the zones is subject to on site application, while assuring soil stability, prevention of erosion or excessive water runoff, and protection of sensitive habitat and endangered species. The objective is to slow down fire spread from vegetation to a structure, or from a structure to vegetation. There should be no flammable vegetation in Zone A and B.

B. Vegetation management on sides of roads:

All roads including the secondary emergency egress road will have vegetation clearance of flammable vegetation on each side as follows:

10 feet on both sides of driveways and private roads

C. Environmentally sensitive areas/ Riparian areas:

The two waterways and adjoining preserved native habitat are Environmentally sensitive areas and cannot be manipulated for fire management purposes.

D. Vegetation Management Zones for open space

The two waterways and adjoining preserved native habitat are Environmentally sensitive areas and cannot be manipulated for fire management purposes.

E. Off road vehicles and Smoking

Off road vehicles should be prohibited on trails and driving cross country should be prohibited.

Any trails should be maintained in a fire safe condition on an annual basis, prior to May 1. Smoking and campfires on trails or in open space should be prohibited.

F. Annual Inspection

An annual vegetation management inspection, funded by private lot owners, or other responsible entity, should be conducted by a qualified wildland fire protection consultant
to assure compliance with this plan, and a report should be submitted to the Homeowners Association, the RFPD Fire Chief, and the County of San Diego DPLU Fire Marshal.

G. Site Specific Vegetation Management Plan for Private Lots

All private lot owners are required to have a site specific Vegetation Management Plan prepared, by a qualified wildland fire safety specialist. Such plan is to be consistent with the criteria in this plan and submitted to the RFPD Fire Chief and the DPLU Fire Marshal, for review and approval at time of application for building permit and prior to initiating vegetation clearance or management.

H. Responsibility:

Vegetation Management Zones per this plan shall be provided prior to introduction of combustible building materials on site.

Property owners are responsible to provide and maintain their vegetation in compliance with this plan on an ongoing basis. Annual maintenance shall be done prior to May one. Such maintenance shall be assured by the property owners.

5. BUILDING IGNITION AND FIRE RESISTANCE:

(building construction must at least comply with RFPD Fire Code: ordinance 2002-2003. The examples in this section comply with the Fire Code)

Ignition resistant construction will be necessary for all structures and appurtenances. In addition, structures should be set back at least 30’ from property line where possible. Construction will be as follows:

1. Structures to have internal fire sprinkler systems designed to RFPD requirements. Residential Systems should be 13-R with a 4 head calculation for life and property protection. Sprinkler coverage shall also include the attic, garage and enclosed porches.
2. Roof systems should be Class A, non-wood. The end of any spanish tile roofs should be blocked to prevent birds nests. All roof edges and valleys to be made tight so there are no gaps.
3. In all construction, exterior walls will be protected with 2-inch nominal solid blocking between rafters at all roof overhangs under the exterior wall covering.
4. Eaves should be boxed in or non existent. No vent openings in eaves, eave overhangs, soffits, between rafters at eaves, or in other overhang areas.
5. All attic and foundation vents should be properly designed, with RFPD approved mesh size and material, and should face away from the wildland area. The Building official should investigate use of 3/16” or 1/8” corrosion resistant metal mesh and baffled vent systems, based on lessons learned in the
recent fires regarding entrance of burning debris into ventilated spaces through ¼” mesh vents.

6. Any vent assemblies on roofs to be of an approved type, such as O Hagin Vent systems with 1/8” mesh, if approved by Building Official. No turbines allowed.

7. There shall be no paper faced or otherwise combustible insulation in attics or other ventilated spaces.

8. Glazing to be double pane or tempered. Glazing facing wildland areas should be minimized.

9. Plastic or vinyl window frames shall be of an approved type which will not melt, ignite or fail. Frames shall have “welded” corners and metal reinforcement in the interlock area to maintain integrity.

10. Screens to be of heavy steel.

11. Any skylights should be tempered.

12. There should be no plastic or vinyl on exteriors of structures (including window or door assemblies unless approved by the RFPD).

13. There should be no plastic gutters or downspouts.

14. Exterior walls to be either one hour rated stucco assembly or other approved one hour rated walls. No combustible wall coverings. No light wood, shakes or shingles. Walls to comply with RFPD and County Consolidated Fire Codes.

15. Doors on structures and garages to be metal or heavy wood.

16. Structures to be enclosed from underside of roof to ground.

17. Structures to have approved garden hose connections on all sides of structures. Connection to have 50’ of garden hose and a spray nozzle attached. Sign to be permanently posted above faucet: “Fire hose; do not remove”.

18. Approved spark arrestors to be on all chimneys, stovepipes and flues. Arrestors to be visible from grade.

19. Outbuildings to have same structural protection as the main residence.

20. No hay, firewood, LPG tanks, etc, within 30’ of structures.

**Decks, fences, addresses:**

A. Decks, balconies, carports patio covers, gazebos, similar architectural appendages, unenclosed floors and roofs, and any projections from structures, will be non combustible, one hour fire rated or heavy timber. The underside will be enclosed on all sides. When such appendages are attached to exterior walls, they will be constructed to maintain the fire resistive integrity of the wall. There will be no plastic or composite decks or railings which can melt in fire conditions or contribute to fire spread. Decks, patios and gazebos will be at least 100’ from the property line where possible.

B. Fences will not be wood at the point where they make the final run to the structure. Property line fencing should be block, masonry or steel. No fencing or railings will be plastic or vinyl.
C. Structures will have reflective, visible, legible, street addresses; 4” high numbers with 3/8” stroke for residential; 6” numbers with 1/2” stroke for other occupancies. Characters will contrast with their background. Addresses to also be posted at the road entrance to driveways. Addresses will be visible from the roadway from either direction of approach.

D. No plastic fences or railings along roads or trails.

6. ACCESS ROADS

(Roads must comply with RFPD Fire Code section 902)

Hauser Creek Road is the private access to the project and consist of decomposed granite base of adequate width and has been deemed acceptable for access purposes by RFPD. Please refer to the attached letters in Appendix F.

Access roads will comply with RFPD Fire Code Section 902, and will be provided when the closest exterior wall of the first floor of any structure is beyond 150’ from the closest Fire Department vehicle access. All roads, and any cul-de-sac bulbs, should be all weather and meet RFPD and DPLU requirements for fire access. Access roads shall be in and usable before combustible construction occurs on site. Road widths will be 24’ unobstructed width (unobstructed by parking), by 13’6” high, and be of a paved surface capable of supporting a 20 ton fire truck. There shall be no overhanging canopies. There shall be no road grades over 15%, unless approved by Fire Chief and mitigated (20% max). Dead end access roads beyond 150’ will have an approved turnaround. Angle of departure and approach to be approved by Fire Chief (Fire Code maximum=7 degrees).

A. Driveways will be provided if structure is 150’ beyond the Fire Department access road. Residential driveways, serving no more than two single family dwellings, to be 16’ wide by 13’6” high and be to RFPD approval as to length and grade. A fire hydrant shall be installed if the distance to house exceeds required driving distance from fire hydrant per RFPD Fire Code. Maximum driveway grade will be 15%, unless mitigated to approval of the Fire Chief (20% max).

B. Access roads serving more than 2 structures shall have Cul-de-sac turnarounds (bulbs). Bulbs will be posted “No Parking- Fire Lane”. Cul-de-sac to have 37.5’ radius (75’ diameter) for residential developments. Other developments may require larger cul-de-sacs.

Any speed bumps or traffic calming devices will be to RFPD approval.

C. Automatic gates will comply with the RFPD Fire Code sec 902.2.4.3. All roads will have 10’ to 30’ clearance of flammable vegetation on each side as previously stated.
D. All gates on access roads, including driveways, will have KNOX (or equivalent) emergency key operated switches overriding all command functions and opening the gate. Gates accessing 4 or more residences or residential lots, or gates accessing hazardous, institutional, educational or assembly occupancy group structures, will also be equipped with approved emergency traffic control activating strobe light sensors or other devices approved by the Fire Chief, which will activate the gate on the approach of emergency apparatus with a battery backup or manual mechanical disconnect in case of failure. Gates to be to RFPD and DPLU approval. The key switch shall be dual keyed or have dual switches to allow law enforcement access.

E. All streets will have street signs which meet RFPD standards and have reflective letters/numbers, and be non combustible.

7. WATER SUPPLY AND FIRE FLOW:

If private stored water:

The water supply will be from individual wells and tanks on each parcel. Water storage and tanks will comply with RFPD Fire Code 903.3.1, including Table 903.3.1. The water tank supply will be as follows. This is in addition to the amount of stored water required for the sprinkler system in the structures, as determined by the appropriate NFPA sprinkler design standard.

Table 903.3.1; RFPD Fire Code

<table>
<thead>
<tr>
<th>Building square feet</th>
<th>Gallons per minute water flow</th>
<th>Capacity gallons</th>
<th>Duration; minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 3000</td>
<td>250</td>
<td>5,000</td>
<td>20</td>
</tr>
<tr>
<td>Over 3000</td>
<td>250</td>
<td>10,000</td>
<td>40</td>
</tr>
</tbody>
</table>

When the exposure distance is one hundred (100) feet or less from adjacent property, the following minimum fire flow will be adhered to. When protecting structures within 100' or less, the minimum flow duration shall not be less than two hours.

<table>
<thead>
<tr>
<th>Exposure distance</th>
<th>Minimum Fire Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 100’</td>
<td>250 gallons per minute</td>
</tr>
<tr>
<td>31 ‘-100’</td>
<td>500- 750 gallons per minute</td>
</tr>
<tr>
<td>11’ to 30’</td>
<td>750-1000 gallons per minute</td>
</tr>
<tr>
<td>10’ or less</td>
<td>1000-1500 gallons per minute</td>
</tr>
</tbody>
</table>

Tank elevation will be such as to provide adequate pressure to the fire sprinklers and to a fire truck pump inlet. The Fire Department connection will be 4” diameter, gated, national standard male thread with a cap. Outlet will be no closer than 50’ or further than 150’ from the structure to be protected and will have all weather fire truck access. Tanks will have automatic refill capability. A single tank may be sized to serve several
structures in a single development. Tanks, connections, piping, and location to be to Fire Chief approval.

All structures are required to be equipped with internal fire sprinklers. The amount of stored water to be required (per RFPD Fire Code section 903) will be determined by the sprinkler system design and the requirements of the appropriate National Fire Protection Association (NFPA) sprinkler standard. The sprinkler water supply will be added to the required storage tank quantity listed above in this section. An approved fire pump may be required to supply the fire sprinklers. These requirements will be established by the RFPD Fire Chief and the DPLU Fire Marshal and will be based upon the type and size of structure constructed. Consideration will be given to potentials for freezing due to the altitude. Sprinkler systems and their water supplies will be remotely supervised to an alarm company.

Wherever possible, fire truck access will be provided to within 10’ of common water supplies, tanks, potable water ponds and swimming pools, or an approved dry supply main and a “drafting” fire hydrant will be provided at an approved location.

8. FIRE PROTECTION SYSTEMS AND EQUIPMENT:

All fire extinguishing systems shall be installed per RFPD Fire Code sec 1003.2

All structures of any type exceeding 200 sq ft will be equipped with internal Fire Sprinklers. The fire sprinklers shall be Designed to the NFPA 13-D standard with a 4 head calculation in order to provide life and property protection. Small, uninhabitable, detached, structures may be excepted by the Fire Chief based on type of construction and distance from other buildings. The water supply will be per NFPA 13-R. Coverage shall also include the attic, garage and enclosed porches.

9. SUMMARY:

All buyers and occupants of property in this development will be put on notice that this is within a high fire hazard area. All buyers should also be given a copy of this report.

Every private parcel owner should be required to have a Vegetation Management Plan prepared and submitted to the RFPD and the County of San Diego DPLU Fire Marshal for review and approval at time of application for a building permit. This will assist in assuring compliance with the recommendations in this report.

The recommendations in this plan, when approved by the RFPD Fire Chief, San Diego County DPLU Fire Marshal and other applicable agencies, shall be included in the CC and R’s for every lot and will be a deed encumbrance or other legal document which follows with the property sale.
As Fire is dynamic and unpredictable, this plan does not guarantee that a fire won't occur or won't cause property damage, injury or loss of life.
APPENDIX:

A. Photo of site  
B. Site Plan/ Tract map  
C. Vegetation Management Zone Map  
D. Slope Analysis Map  
E. Fire History Map  
F. SDRFPD existing road acceptance letter

This generic model plan was prepared by Hunt Research Corporation, 805-688-4625, and is intended solely for use by the Rural Fire Protection District and by any applicants or their agents for development only within the Rural Fire Protection District. It is not for use by anyone, any other agency or any other jurisdiction for developments in any other jurisdiction. Language in this plan must be modified to address specific developments, and all proposed protection must at least comply with the requirements of the RFPD Fire Code, DPLU, and resource agency requirements, AND BE APPROVED BY THE RFPD and the DPLU.
Looking North along the East Property Line

Looking North West from the East Property Line
Looking West from the East Property Line

3

Looking West from the East Property Line

4
Looking South along the East Property Line (At Hauser Creek Road)

Looking West along the North Property Line (At Hauser Creek Road)
APPENDIX D
May 19, 2004

County of San Diego
Department of Planning and Land Use
5201 Ruffin Road, Suite B
San Diego, CA 92123-1666

RE: TPM 20756

Dear Planner:

With regard to the aforementioned, the existing road is currently improved with decomposed granite and is acceptable to the Fire District. No further improvement is required at this time.

If you have any questions, please feel free to call.

Sincerely,

[Signature]

David R. Nissen
Fire Marshal

DRN: db
Cc: Owner/Arrellano
August 2, 2005

County of San Diego
Department of Planning and Land Use
5201 Ruffin Road, Suite B
San Diego, CA 92123-1666

Re: TPM 20756 FPP

Dear Planner,

The San Diego Rural Fire Protection District has reviewed the fire protection plan submitted by CSSI/Southwest Fire and Protection. The plan meets the objectives of the California Fire Code 2000 edition, Article 86 “Fire Protection Plan Urban-Wildland Interface (UWI) Areas” as well as the Fire Districts requirements for discretionary projects. Please call me directly with any questions that you may have.

Sincerely,

[Signature]

David R. Nissen
Fire Chief