

27 June, 2018

**Fire Chief
City of Santee
Fire Administration
10601 Magnolia Avenue
Santee, CA 92071**

**SUBJECT: AM&M Proposal for Lantern Crest Ridge II
Michael Grant
Development Contractors
8510 Railroad Ave.,
Santee, CA 92071**

In accordance with Section 104.9 of the 2016 California Fire Code, we are requesting an alternate method of fire protection for the proposed project indicated below. The project is not in conformance with the required fuel modification distances for the City of Santee. The project site is not in a Very High Fire Severity Zone.

PROJECT DESCRIPTION

The Lantern Crest Ridge II Project Site APN 384-142-04 ("Project") is located in the eastern part of the City of Santee, immediately north of and fronting Sunset Trail. The Project site is gently sloping to the west, with modified terraces on the southern half of the property, presumably from old grove plantings. Access to the site is provided off Sunset Trail, a private road that runs along the southern property edge. Elevations on the property range between approximately 486 feet and 573 feet MSL. The project is an addition to the Ridge I project and would provide 46 Assisted Living/Memory Care Units and 4 Independent Villas to provide a total of 50 units. The occupancy type is classified as R2.1, building type V-A, wood/stucco with some CMU walls.

The proposed site development will include a three-story residential building with a basement level and two single-story duplex structures.

Other site improvements will include retaining walls, asphalt concrete paved driveways, and parking areas, as well as sidewalks, hardscape, curbs, gutters, and driveways, a biofiltration basin, and a variety of subsurface utilities.

APPLICABLE CODE SECTIONS and INTENT

Site design and development will comply with the most current City of Santee requirements for fire access. The design provides for fire apparatus turn around at the north end of the proposed structure by a hammerhead designed to the standard requirements. Access to the east side of the structure will be provided from this location.

Fuel modification measures will be necessary to the east and north of the project site. West and southern areas will join treated areas.

A deficiency in the required fuel modification distance to the east of proposed structure will require mitigation measures and is the reason for this request for alternate means and methods.

DEFICIENCY and PROPOSAL

The parcel does not have sufficient area to provide for 100 foot of fuel treatment prior to open space east of the structure location. The current design provides for 59.5 feet from the structure envelope as setback to the PL.

This proposal provides for a 5 ft fire barrier in the form of a non-combustible wall at top of slope prior to the PL and open space.

The wall design and location is intended to provide a barrier to additionally protect the structure from radiant heat. This mitigation measure is proposed in lieu of 100 feet of fuel treatment. Appendix B page 8 provides the rationale for use of walls as fire and ember barriers.

JUSTIFICATION

The addition of the 5ft high wall at top of slope will provide mitigation for less than 100 feet of fuel treatment as required by current fire code and the City of Santee. The total setback to the wall will be 54.5 feet with 59.5 to PL.

- Appendix B, provides fire behavior modeling of the open space area east of the site, the flame lengths near the proposed top of slope and PL are between 18 and 22 feet, with up to 44 feet further to the southeast. The fuel is generally moderate, the study provides justification for little change in future years.
- The addition of the wall at top of slope will provide a radiant heat barrier, additionally Appendix C, cross section a view from the south shows the eave line will be below the top of barrier.
- Fire Resources will have access to the east side of structure from the north end.
- Current plans will provide for irrigated landscaping, hardscape, and other non-combustible area(s) surrounding the defensible space zone.

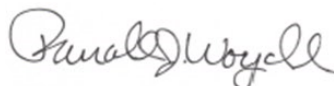
Should you find that the proposed items provide an equivalent level of protection to that prescribed in the CFC, we will revise the residential site and fuel modification plans to include a copy of this approved AM&M. A copy will also be included on the site plan submitted to the city. If you have any questions regarding this AM&M proposal or the project in general, please do not hesitate to contact me at grant.michael@sbcglobal.net.

Sincerely,

Michael Grant
Owner
Development Contractors, Inc.

Prepared by: Monty Kalin Firewise2000, Inc 760-533-7096 Mk.firewise2000@sbcglobal.net	Reviewed by: Firewise2000, Inc. Ron Woychak President 1320 Scenic Drive Escondido, CA 92029 (760)745-3947 Firewise2000@sbcglobal.net
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CERTIFIED BY:
Firewise2000, Inc



APPENDIX PAGES

Photos

Appendix 'A' Fire History

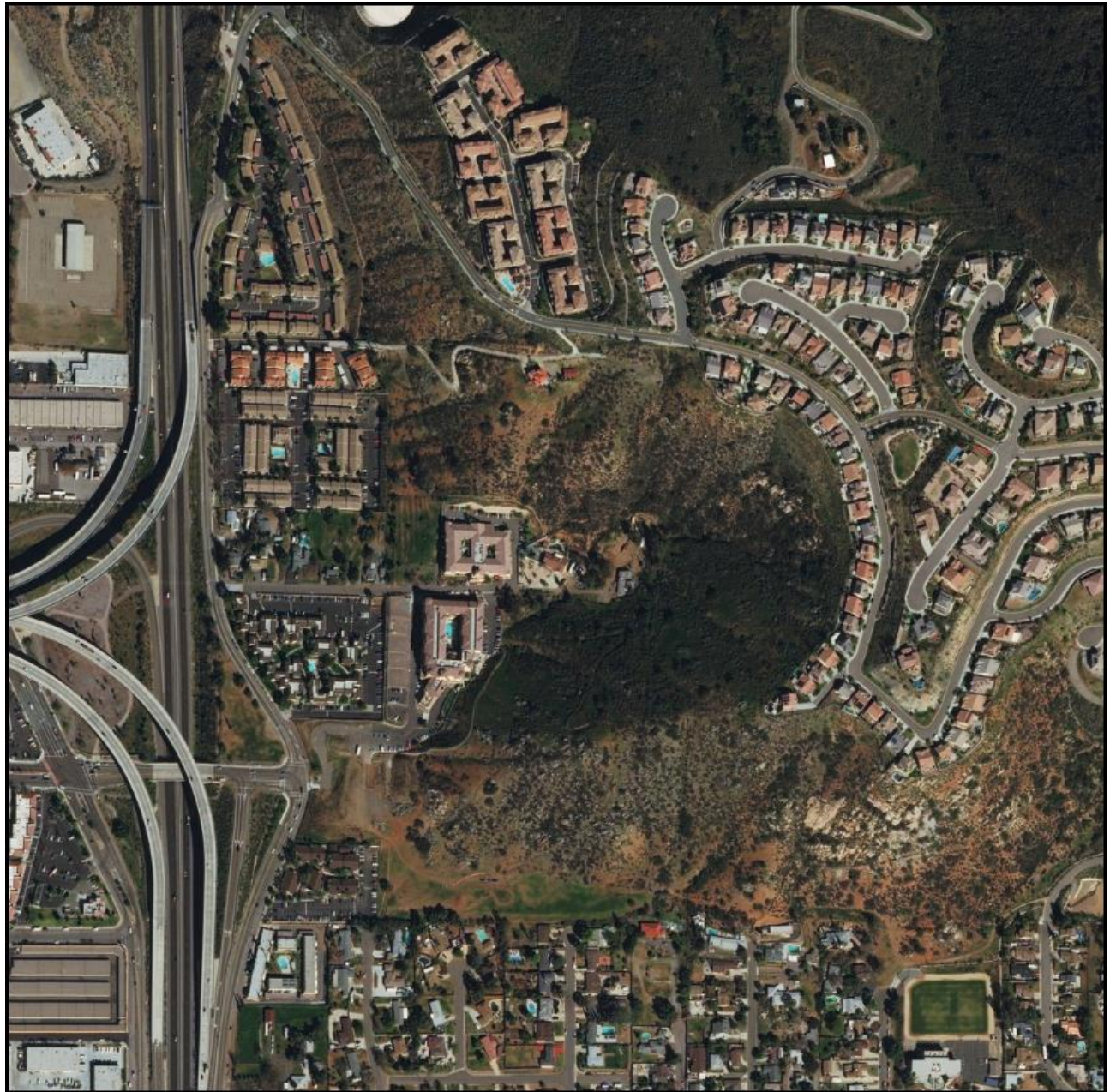
FRAP

Appendix 'B' Fire Behavior

Slope Wind Model

Appendix 'C' Cross Section Slope and Structure

Site Plan



Photos

Photo 1 Current Aerial Image of site, noted topography and aspect north of Lantern Ridge.

In perspective, the area is a large topographic bowl the north end receives continual sun heating and drying the soil this makes, as in the image for a less than expected fuel bed. In comparison, the slope to the south is shaded and has a much heavier growth and fuel bed depth.



Photo 2 Taken cross slope looking to the northwest from the end Lantern Crest, most generally the depth of the fuel is from 12 inches to 36 inches with areas of no fuel and areas with rocky out cropping's.

I believe, the fuel on the slope has always pretty much looked like this, it receives too much sun to develop a full coastal sage scrub habitat with the aspect what it is, thus you end up with a diminished fuel loading.

Rocky outcroppings break up the fuel continuity and fuel loading.

The ridge top above, sheltering effect (see wind model), fuel bed, rocky area all work together to provide less than expected flame lengths coming out of the model results.



Photo 3 Taken looking up slope east at the approximate end of the parcel. The shrubs near retaining wall are acacia redolens an irrigated ornamental plant. The fuel bed height is considerable less than the acacia in the foreground. There are some areas near the top of ridge east side that has fairly well developed stand of CSS. This area is approximately 600 feet from the proposed development.

Appendix 'A' Fire History and FRAP

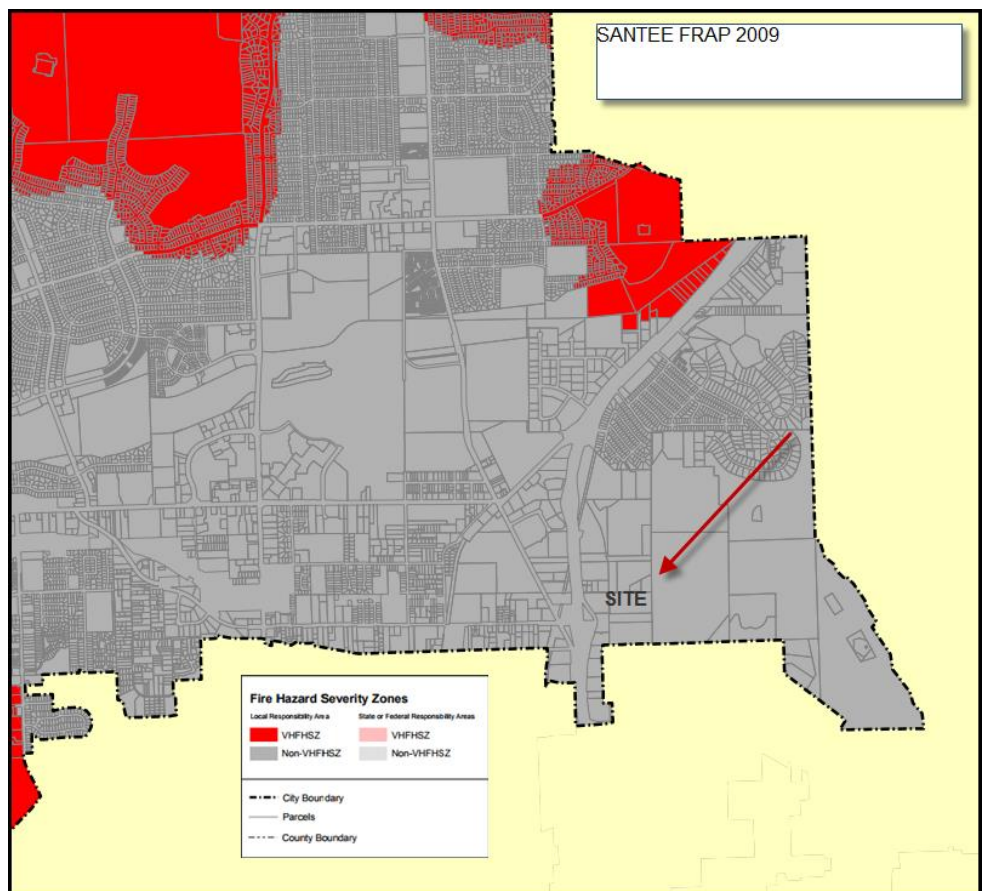


The only fire event in close proximity that our research found was in 1984.

That does not mean that the area north and east of Lantern Crest has never burned. Fire starts less than one-half acre rarely get captured.

City of Santee
FRAP 2009

CalFire, Fire and Resource Assessment Program has designated the location as not in a Very High Fire Severity Zone.



Appendix 'B' Fire Behavior and Slope Wind Model

The following page provides Wind NINJA wind model results. The inputs were at 70mph from the northeast, outputs provide an estimate from 31 to 53 at ground level. The results show a slight sheltering effect from the ridge to the east of the proposed project site.

Following the site wind profile is the result of the Behave analysis. It provides flame lengths and rates of spread for the area to the east of the site. Model area(s) are provided on the graphic, with corresponding estimated flame lengths.

The results provided show 3 different fuel models that best characterize the sites current fuel load and conditions. The current fuel load will likely change little in further years based on slope aspect.

SCAI 18 classic CSS model, which represents some of the sheltered area(s) east of the current developed parcel.

SH2

SH2 (142): The primary carrier of fire in SH2 is woody shrubs and shrub litter. Moderate fuel load (higher than SH1), depth about 1 foot, and no grass fuel present. Spread rate is low; flame length low.

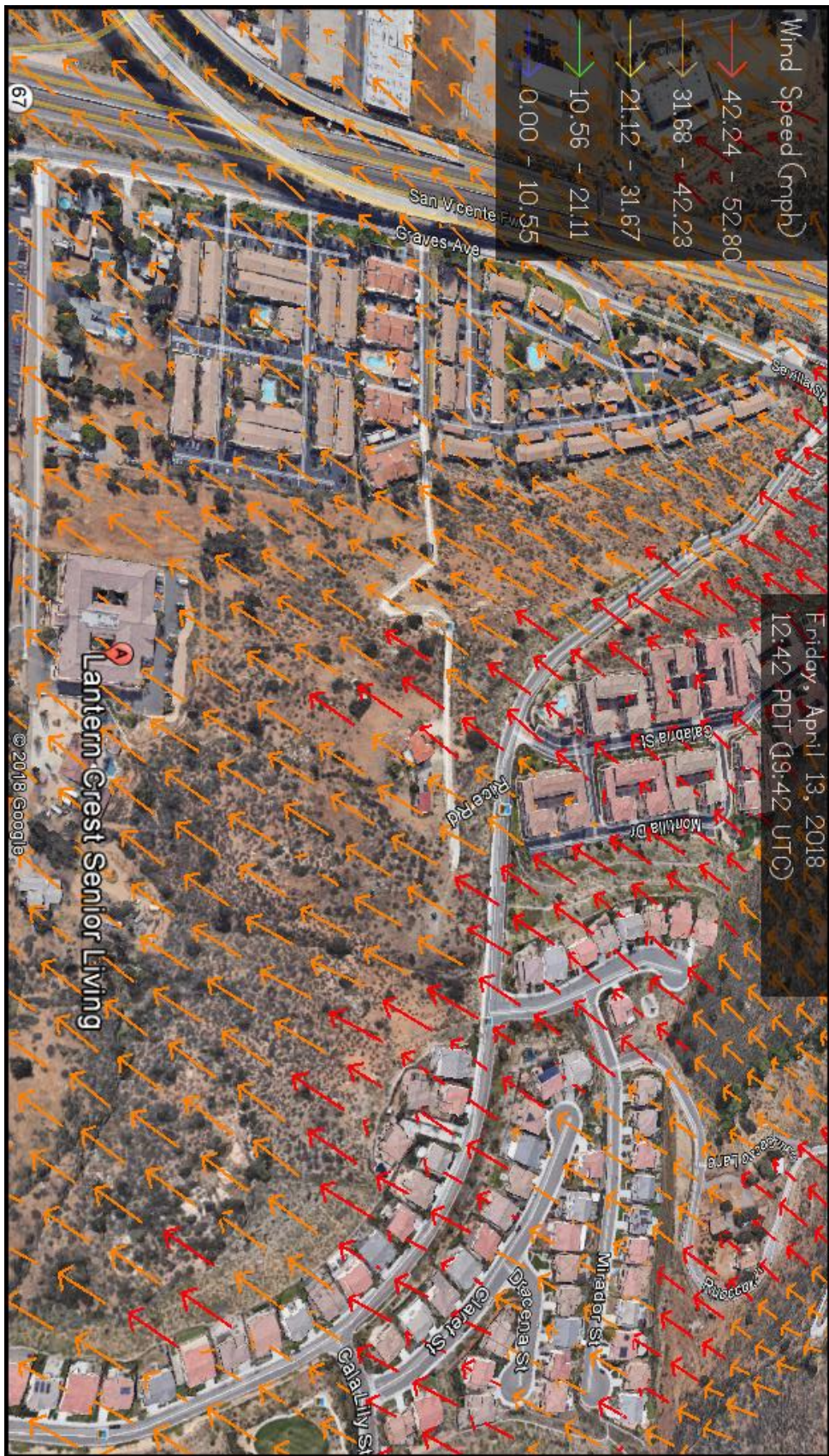
GS2

GS2 (122): Primary carrier is grass & shrubs combined. Shrubs are 1-3 feet high, grass load is moderate. Spread rate is high; flame length moderate. Moisture of extinction low.

Fire Barriers CMU or Rated Glass

Fire Barriers are often used to provide protection to the structure when circumstances are such that the proposed project is unable to meet a full 100 feet of total distance from the structure envelope. It is more often used where the project site is not in a Very High Fire Severity Zone. There is no exact science with the exception of the inverse square rule, for this project the model outputs are 18.4 flame lengths and 1520 btu's, the flame front would cease at the barrier. Convected heat moving forward to the structure envelope or in this case top of building, as the design puts it below top of slope grade, would decrease to around 300 btu's. There is no real conversion for BTU to degrees Fahrenheit that would prove a certain risk factor.

However, in non VHFSZ areas the usual safe distance for required fuel treatment/modification is 1.5 to 2 times the flame lengths, in this case that would be 36.8 feet. At that point there is little to no radiant heat that could be a risk. Lantern Crest Ridge II is 3.2 times the flame lengths with existing setback, without the added protection of the barrier. The fuel loads on the slope will change little over successive years because of aspect, and soil. Imagery reviewed shows little change over the last 10 years. I did not tweak the model results for the fire behavior to account for the fact that the fuel bed lacks continuity in close proximity to low slope, the FL numbers are over predicated and would add some additional safety. Should there be a fire in close proximity the challenge will be in the exiting fuel treatment areas within the surrounding area. The Lantern Crest design should allow resources to concentrate on those weak areas.





Appendix 'C' Cross Section Slope and Structure

