



Subject: Esperanza Hills Housing Project

Date: May 8, 2017

To: Board of Supervisors and Planning Commissioner

(Via Email: Response@ocgov.com/ Kevin.Canning@ocpw.ocgov.com)

Dear Supervisors and Commissioners:

I have been asked by Protect Our Homes and Hills to evaluate the need for a second, daily public access for the Esperanza Hills housing project. I have reviewed aerial photography of the site and surrounding areas on Google Maps and reviewed the proposed site plan for 340 residential units.

I have been in the fire service for 40 years serving as the Ventura County Fire Chief, from 1998 to 2012, and as the Nevada State Forester, from 2015 to 2016. I was part of the team that developed California's response to major emergencies, which included policy development at the local, State and Federal level. I also helped create the National Wildland Fire Cohesive Strategy. While serving in "all-hazard" emergency response role, I focused on the wildland fire topic.

Development will naturally occur in fire prone wildland areas in the future. The goal here should be is to design a project that is fire safe, even if first responders cannot immediately respond to an emergency, a contingency that is increasingly likely when "Multi-Fire Events" occur in Southern California. A "Fire Safe" project can be accomplished through proper planning, building codes, public education and involved residents. Some of my recommendations may have already been accepted in the Planning process, but I want to put forward a comprehensive list of considerations as they are often fundamentally interrelated.

This project is located in an area that has a repetitive fire occurrence history as evidenced by the adopted Very High Fire Hazard Severity Zone maps (2012). It is not a matter of if a fire will start, it's a matter of when. Fire history indicates a five-ten year repetitive cycle that is primarily fueled by flashy vegetation and very strong Santa Ana winds. The combination of fuels, winds and population density create public safety concerns for first responders, public officials and residents. When a wildland fire occurs, the rate of spread can be extreme (Freeway Complex Fire, 2008), thus causing public anxiety and safety concerns.

Below are bullet points that must be addressed for this project in addition to the public access topic:

- **Access** (ingress & egress - public & FD dedicated access)

The project's population density must be aligned with a traffic engineer's study for evacuation purposes. This requires a study that reviews daily static traffic flows and then overlaid with accelerated evacuation traffic flows. This traffic study must account for residents leaving during duress and first responders gaining entry. Consideration should also be given to egress roads that dump onto existing public streets and whether these access points cause a "choke point."

Standard planning conditions dictate two public access points designed specifically for evacuation flows on a project of this type/size. Some fire agencies allow Fire Department (FD) restricted access points, but these restricted access points may have design flaws. The primary concern is that they require a FD (OCFA) representative to hand manipulate the access controls (gate). The drawback is that these access points are a second thought and require special knowledge to operate, thus limiting law enforcement, medical personnel and the public access. There are work arounds to access these controls, but they must be addressed during design.

(OCFA Guideline B-09 "Fire Access Roadways - A minimum of two vehicle access points is required for a development containing 150 or more residential units.")

(CFC 503.1.2 "Additional Access - The fire code official is authorized to require more than one fire apparatus access road... if a single access could limit access based upon several factors.")

- **Emergency Response**

Part of OCFA's operational design is to establish a "standards of cover," which provides a timely response for medical and structure fire responses. A wildland fire under high wind situations causes extreme rates of fire spread, thereby dictating that new developments be designed to withstand a fire in the advent no first responders resources are available. The speed with which wildfires can reach the site needs to be carefully evaluated in this context as fire spread arrival times in a wildland area can easily be shorter than evacuation time requirements.

(OCFA's "Standards of Cover plan")

[www.ocfa.org/Uploads/Orange%20County%20Fire%20Authority%20SOC\\_FINAL.pdf](http://www.ocfa.org/Uploads/Orange%20County%20Fire%20Authority%20SOC_FINAL.pdf))

("BEHAVE" fire modeling program can display various fire spread/speed models in relation to time periods that affect evacuation needs)

- **Emergency Notification**

Due to the rapid spread of wildland fires, some type of localized emergency notification system should be designed to quickly prompt residents about an emerging fire. Wildland fire case studies show most fatalities occur as people are trying to escape fast moving fires.

(Reverse 911 capability - <http://bos.ocgov.com/alertoc/overview.asp>)

- **Water Supply**

A water supply system must be designed to meet hillside elevation demands for volume and pressure. If a local elevated gravity fed supply system is not possible, then backup electrical power must be incorporated into the pump-pressurized system.

(Backup pressure systems -

[https://www.epa.gov/sites/production/files/201503/documents/planning\\_for\\_an\\_emergency\\_drinking\\_water\\_supply.pdf](https://www.epa.gov/sites/production/files/201503/documents/planning_for_an_emergency_drinking_water_supply.pdf)

& <https://www.awwa.org/portals/0/files/publications/documents/m31lookinside.pdf>)

- **Evacuation Plans**

Given the fire history of this geographical area, a detailed evacuation plan template should be developed before the actual emergency as well as a re-entry plan. These plans are great tools in educating the residents about preparation and of course helpful to local fire authorities. As a general rule, the higher the density of a proposed project, the higher the evacuation risks.

(Orange County Hazard Mitigation Plan -

[http://cams.ocgov.com/Web\\_Publisher/Agenda03\\_15\\_2011\\_files/images/O01409-001806E.PDF](http://cams.ocgov.com/Web_Publisher/Agenda03_15_2011_files/images/O01409-001806E.PDF)  
Section 3.2 "Wildfires")

- **Safe Refuge Areas**

Depending upon the resident's willingness and ability to evacuate early, a community should have designated Safe Refuge areas in case evacuation routes become blocked. These areas can be large "park" settings with non-combustible landscaping and/or be large public assembly structures that are fire safe. The number and size of Safe Refuge areas are dependent upon the project's size, surrounding fuel loads and evacuation template logistics needs.

(Reference to subject in principle - [www.fireadapted.org](http://www.fireadapted.org))

- **Public Education**

Every resident living in this development must be made aware of the serious wildland fire threat and fire history. They need to receive and understand the tenets of the Ready, Set, GO! (RSG) program. This program teaches residents about wildland fire basics, how to harden your home, situational awareness, what to do when a fire starts, evacuation and what to do if you cannot escape. Residents must learn and accept their personal responsibility for living in a dangerous wildland environment. Residents must perform annual home maintenance to ensure a safe “ember zone” around their structures. This is a program that OCFA has adopted and it must be taught annually as residents often relocate in/out of hazard areas.

(OCFA’s Ready, Set, GO! Program - [www.ocfa.org/RSG](http://www.ocfa.org/RSG))

- **Fire Safe Council (FSC)**

I understand this project will create a Home Owner’s Association (HOA), which should be tasked to address the wildland fire public education needs and to hold annual evacuation practices. A Fire Safe Council should be formally established and reliably funded. The FSC can then, among other things, apply for State and Federal grants to mitigate the wildland fire threat.

(CA Fire Safe Councils - [www.cafiresafecouncil.org](http://www.cafiresafecouncil.org))

- **Building Codes**

The use of modern building/fire codes and local ordinances are a requirement of any new development designed to “harden” structures and reduce life loss.

(OCFA uses the CBC as adopted by the City of Yorba Linda, which is consistent with other Orange County unincorporated areas and cities -

[www.ocfa.org/Uploads/CommunityRiskReduction?Fire%20Code-%20Yorba%20Linda.pdf](http://www.ocfa.org/Uploads/CommunityRiskReduction?Fire%20Code-%20Yorba%20Linda.pdf))

- **HOA Common Areas or “Buffer Zones”**

This project will be putting a population into the wildland fuel zone; therefore a “defensible space zone” must be created and maintained by the HOA. These zones may be irrigated landscapes, natural landscape that uses native fire resistance vegetation and/or use of selected clearing. The size and scope of the Buffer Zone/s will depend upon the slope of the land surrounding residences. The minimum zone should be 100 feet wide between structures and native fuels and may be greater if slope dictates. The buffer zone is an “absolute” condition and must be maintained even during drought conditions.

(Buffer zones fall into the minimum 100-foot or more defensible space criteria like single-family structures - <http://www.ocfa.org/RSG/VegetationManagement>)

*(Note: The annotations to each bullet point may be contained within OCFA's adopted codes, ordinances or be recognized as an industry "best practice." Wildland fire planning aspects are not wholly contained in one specific code or ordinance, but must be interpreted to each project in the design phase.)*

Growth within these wildland fire prone areas must be addressed as a holistic, systematic approach. Each component listed above must be addressed in its entirety; failure to do so may compromise public safety success. The primary responsibility public officials have is life safety, therefore egress issues as they pertain to evacuations are the #1 priority. If egress decisions are altered, then secondary factors are even more important in the planning phase.

The challenge before us is how to allow safe and responsible growth when public safety revenue tax dollar growth is not keeping up with increasing first responder demands. Growth in these wildland fire prone areas can normally be done safely, but it takes a good planning and public/private partnerships for success.

Sincerely,

A handwritten signature in black ink, appearing to read 'Bob Roper', with a long horizontal flourish extending to the right.

Bob Roper  
Roper Consulting