



To: Bonsall Unified School District
Facilities, Maintenance and Transportation
Attn: David Medcalf
31505 Old River Road
Bonsall, CA 92003

Date: March 20, 2018

Subject: Bonsall High School Project

Dear Mr. Medcalf and Members of the Board of Trustees,

I have been asked by "Save Gird Valley" citizen's group to review and evaluate the planning conditions for the Bonsall High School project. I have reviewed aerial photography of the site and surrounding areas on Google Maps and reviewed the proposed site plan.

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 should be 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 large, and wind driven, 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 Cal Fire "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 (Cedar Fire, 2003), thus causing public anxiety and safety concerns.

The proposed project site is located approximately 0.3 miles north of Hwy. 76 on Gird Road. It is currently a rolling hill site with native grasses, brush and assorted trees. It is bordered by the Golf Club of California on the west, urban housing tracts on the north and undisturbed native vegetation on the south/east. It must be noted that until the south/east border areas are developed, this project site is especially impacted by destructive Santa Ana wind conditions

Below are bullet points that must be addressed for this project in addition to the general public safety topics:

- **Access** (ingress & egress – public & FD/Law access)

The project's use and daily population numbers 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 for a project of this type/size. Multiple ingress and egress points are also becoming more important beyond the requirements for fire evacuation as school districts and law enforcement are addressing "active shooter" practices.

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 fire department 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.

The proposed project currently has only one access point off Gird Road, which causes a choke point. Consideration should be given to a secondary Gird Road connection or at least a road design to eliminate a single choke point.

(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 North County Fire’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 development projects 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.

The proposed project will be served primarily by the two nearest fire stations, North County Fire Protection District #4 & 5. Both fire station response times will be impacted by Hwy. 76 traffic flows during peak traffic periods. Fire Station #2 will be the third-in resource via remote residential access to Gird Road. North County Fire is a full service fire department with excellent performance and relationships with partner agencies.

(“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 students, faculty and parents about an emerging fire. Wildland fire case studies show most fatalities occur as people are trying to escape fast moving fires.

(<http://www.readysandiego.org/alertsandiego/>)

- **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.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. North County Fire has such a plan on their website and it needs to be incorporated into the school's emergency readiness plans. These plans are great tools in educating the occupants 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.

(www.northcountyfireprotectiondistrict.org/pdf/bureau/Evacuation_Map_Fallbrook.pdf)

- **Temporary Safe Refuge Areas**

North County Fire has developed a "Temporary Shelter" plan/map and displays it on their website. These shelters are temporary in nature and this project should be considered part of this plan once construction is completed. These areas can be large "park" settings with non-combustible landscaping and/or be large public assembly structures that are fire safe. The school district should also train their bus drivers about evacuation plans and the location of these temporary shelters.

(www.northcountyfireprotectiondistrict.org/pdf/bureau/Evacuation_Map_Fallbrook.pdf)

(Reference to subject in principle – www.fireadapted.org)

- **Public Education**

Every student, faculty and parent 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 occupants 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. Students, faculty and parents must learn and accept their personal responsibility for living in a dangerous wildland environment. RSG needs to be taught as an integral part of the school's emergency readiness plan. North County Fire has adopted RSG and should be a key partner with this new school.

(<http://www.readyforwildfire.org/Ready-for-Wildfire-App/>)

(<http://wildlandfirersg.org/Resident>)

- **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. North County Fire has adopted the latest edition of the State Building/Fire Code. The Office of the State Architect should also govern design of the school, so Building/Fire code compliance should be granted.

- **“Buffer Zones”**

This project will be putting occupants into the wildland fuel zone; therefore a “defensible space zone” must be created and maintained by the school district. 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 school structures and neighboring fuel type. 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.

(<http://www.readyforwildfire.org/Defensible-Space/>)

(Note: The annotations to each bullet point may be contained within NCFPD’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.)

Population growth and associated functions (i.e. schools) 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 in fire prone areas, especially schools. 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,

B. Roper

Bob Roper
Roper Consulting