

## Blom, Erica

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**From:** Elizabeth Reid-Wainscoat <ereidwainscoat@biologicaldiversity.org>  
**Sent:** Friday, July 29, 2022 12:36 PM  
**To:** Blom, Erica; Mumpower, Priscilla  
**Subject:** [External] Comment on LAFCO Agenda item 7a- Request amendment to Staff Adendum, removal of recommendation 9b.

Dear Commissioners,

Since 2015 almost 200 people in California have been killed in wildfires, more than 50,000 structures have burned down, hundreds of thousands have had to evacuate their homes and endure power outages, and millions have been exposed to unhealthy levels of smoke and air pollution.

Policymakers must reckon with California's wildfire history and acknowledge that reckless land-use policies are increasing wildfire risk and putting more people in harm's way. We need to invest in land-use practices that reduce our risk to wildfires. This includes the prohibition of new homes in highly fire-prone wildlands and retrofit existing homes with high fire risk.

Harvest Hills is one of located in one of the most dangerous areas in the San Diego region. For this reason, it is opposed by over 50 organizations.

We recognize the need for the Escondido MSR and, in general, we support the recommendations in the LAFCO staff addendum with one exception. While Recommendation 9(a) is sound and we support it, **we recommend elimination of 9b.** A major change in municipal services, such as for the Harvest Hills project, should be part of a comprehensive services and sphere review rather than considered in a piecemeal fashion.

The proposed Harvest Hills project [goes against the best available science](#) and presents a significant wildfire risk to the future residents as well as the region as a whole. It should not be fast-tracked in any way and only considered as part of a comprehensive review.

Thank you for your time and consideration.

Sincerely,

Elizabeth

Elizabeth Reid-Wainscoat (she/her)  
Urban Wildlands Campaigner  
CENTER for BIOLOGICAL DIVERSITY  
660 S. Figueroa Street #1000  
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Cell: (831) 428-3312  
[ereidwainscoat@biologicaldiversity.org](mailto:ereidwainscoat@biologicaldiversity.org)

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## Blom, Erica

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**From:** Frank Landis <franklandis03@yahoo.com>  
**Sent:** Friday, July 29, 2022 1:01 PM  
**To:** Blom, Erica; Mumpower, Priscilla; Simonds,Keene; Laura Hunter  
**Cc:** Adam Finestone; afirestine@escondido.org; Paul McNamara; Rvogt  
**Subject:** [External] CNPSSD Comment on LAFCO Agenda item 7a- Request amendment to Staff Adendum, removal of recommendation 9b.  
**Attachments:** CNPSSD comment on Fanita Ranch RFEIR 20220721.pdf

Please distribute to all LAFCO Commissioners and Alternates, Thank you.

Dear Commissioners,

Harvest Hills is one of the worst and most dangerously located development projects in the region. It is opposed by over 50 organizations, including the California Native Plant Society.

Although we have not fully reviewed all of the documentation, we recognize the need for the Escondido MSR and, in general, we support the recommendations in the LAFCO staff addendum with one exception.

While Recommendation 9(a) is sound and we support it, **we recommend elimination of 9b.**

A major change in municipal services, such as for the Harvest Hills project, should be part of a comprehensive services and sphere review rather than considered in a piecemeal fashion.

This project has failed to advance over a multi-decade period. The reasons for this include recent information on the project's insurmountable fire and evacuation issues. There is even more evidence of the severe threat that this project would pose to existing neighbors and neighboring communities, including the San Diego Zoo Safari Park.

Please find attached a letter submitted last Monday to the City of Santee, over the latest Fanita Ranch EIR. The problems are similar between Harvest Hills and Fanita Ranch.

To extrapolate from the letter, the fire analysis on Harvest Hills is incomplete, because the area gets hit by two types of fires (small and big). Small fires can be successfully fought. Big fires have an energy release on par with a medium-sized hurricane, and they are disasters to be managed through evacuating people and building fire resistant buildings. However, the California Building Code was never meant to create fireproof buildings, as it says in the purpose of Chapter 7A itself. Recent analysis (quoted in the letter) shows, when hit by giant fires like the Witch and Guejito fires, on average 20% of single family homes built to code will burn. Once they burn, it will cost ca. \$150,000 per home to clean up the site, displace the homeowners for years while their homes are rebuilt, and probably cost over a million dollars to rebuild each home.

In Harvest Hills, with 550 single family homes, that's an estimated loss of 110 homes and \$110,000,000 for every major fire that hits the site, and major fires will hit every decade or two. Everyone bears that loss, including those of us for whom fire insurance is becoming unaffordable for fairly obvious reasons.

Worse, Harvest Hills really only has one road out, so preventing people from getting trapped is going to be difficult. Couple predictable human endangerment with predictable huge costs to rebuild after each fire, and the project becomes increasingly problematic with each fire.

The problems with Harvest Hills are insurmountable and the project is dangerous. It should not be fast-tracked in any way and only considered as part of a comprehensive review.

Thank you for considering this input.

Frank Landis, PhD

Conservation Chair

California Native Plant Society, San Diego Chapter.

# California Native Plant Society

San Diego Chapter of the California Native Plant Society  
P O Box 121390  
San Diego CA 92112-1390  
conservation@cnpsd.org | www.cnpsd.org

July 25, 2022

Chris Jacobs, Principal Planner  
Department of Development Services  
City Hall, Building 4  
10601 Magnolia Avenue  
Santee, California 92071  
Telephone: (619) 258-4100, extension 182  
By email to: cjacobs@cityofsanteeca.gov

## **RE: Recirculated Sections of the Final Revised EIR for Fanita Ranch**

Dear Mr. Jacobs,

Thank you for the opportunity to comment on the draft of the Final Revised EIR (“FREIR”) for Fanita Ranch (“Project”). CNPS promotes sound plant science as the backbone of effective natural areas protection. We work closely with decision-makers, scientists, and local planners to advocate for well informed and environmentally friendly policies, regulations, and land management practices. Our focus is on California's native plants, the vegetation they form, and climate change as it affects both.

This letter is divided into two sections. The first is the CNPS response to the analysis and mitigation of fire threats, both of which are lacking and which need to incorporate information and analysis that was available when the FREIR was written.

The second section is new information on the sensitive Crotch’s Bumblebee (*Bombus c...i*), which, due to a recent appeals court ruling, is a candidate for listing under the California Endangered Species Act. It is documented to occur on Mission Trails and on Miramar within three miles of the Project site, but it was never surveyed for, although suitable habitat and food plants exist on site. Since CNPS does not officially advocate for insects, this comment is made by the writer of this letter (Frank Landis) as a member of the public.

### **Fire Impacts and Incomplete Analysis**

One basic fire impact question is whether the project would “expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?” Per the FREIR (p. 4.18-35) “The wildland fire risk and features prescribed in the FPP (Appendix P1) have been analyzed and developed to reduce risk to acceptable levels at Fanita Ranch by applying comprehensive guidelines developed by a technical panel of 17 professional fire prevention officers and fire protection specialists and planners” and (p. 4.18-37) “The project’s redundant fire protection features, quick emergency response, evacuation routes and plans, and the contingency option of sheltering on site in protected spaces would ensure that people and



*Dedicated to the preservation of California native flora*

structures would not be exposed to a significant risk of loss, injury or death involving wildland fires.”

This is misleading. If there is no risk to significant risk to structures, why the elaborate evacuation plan? The analysis tries to have it both ways: that people will be efficiently evacuated, so they’re safe. and even if they can’t be evacuated, they’ll be perfectly safe in their homes, because their homes will not burn. Will any firefighter or consultant actually stand up and promise this? Of course not. **The Project is proposed for a dangerous site that is mapped as “very high fire hazard” because it has burned multiple times. That danger needs to be understood, the risk needs to be quantified, and the people and legal entities who are impacted by a fire on the Project site need to have a real voice in the deciding whether the Project is approved, and with what binding conditions.**

In the FREIR, the risk was incorrectly analyzed. The Project site faces two types of wildfires, not one. While mitigation measures to both types of fires were discussed, the analysis mixes and confuses them, making the incorrect conclusion that the risks for both types were adequately mitigated, when in fact only the risks of the lesser wildfire type was. Below we will start to disentangle the mess.

The FREIR risk analysis is also incomplete, in that it did not include financial impacts of fire. These appear to be substantial, over nine times the City of Santee’s current annual budget.

A variety of people and legal entities will be impacted by a fire on the Project site, not just the residents. Their input and concurrence is needed to help mitigate these impacts. It is unclear whether all of them were identified in the FREIR and notified of their potential vulnerability, so that they could comment on the process. These concerns are detailed below.

### ***Two Types of Fires and Mitigating For Each***

As background, not all fires are equal. Every year, California experiences many tiny fires and a few extreme monsters, a “fire ants and Godzilla” distribution. Between 2008 and 2021, California dealt with between 4,923 and 9,917 fires every year. Of these fires, only between 17 and 95 grew to burn more than 1,000 acres. This is illustrated in Wikipedia’s list of fires that were over 1,000 acres, called “Big Fires” in Table 1 on the next page.

As noted, there were only 17 to 95 “Big Fires” every year, or less than 2% of the total number of fires. Unfortunately, these 1,000 acre-plus fires burned between 75 and 99% of the total acres burned every year.

Worse, the biggest 2 to 8 fires each year (The “Godzillas”) burned over 50% of the total acreage burned in California that year. These monsters are inevitably wind-driven catastrophes that burn for days to months, whose total energy release (around  $10^{17}$  joules) is on the same scale as the winds in a medium-sized hurricane. There’s a scaling problem with assuming that humans can stop this kind of energy release, even if they’re trained wildland firefighters.

This is why the metaphor of “fire ants and Godzilla” is apt. If all of the fires California firefighters deal with every year are tiny “fire ants,” the firefighting strategic equivalent of applying insecticide (building fire breaks, putting out small fires) is the best answer, and California’s firefighters are extremely good at this. At least 98% of all fires in any given year are kept to under two square miles (1,280 acres).

The problem is that “fire ant” measures don’t work on big wind-driven fires, the Godzillas, where embers can fly for miles past fire breaks to ignite spot fires. Techniques that are effective in extinguishing small fires are ineffective in dealing with wind-blown wildfires. In a majority of cases, weather changes eventually halt the biggest fires.

**Table 1.** Summary fire data from 2008 to 2021, per Wikipedia, as scraped from Cal Fire official documents. Total acres burned per year and number of fires/year are self explanatory. Wikipedia broke out fires >1000 acres, which here are labeled “Big Fires.” Invariably, only a few big fires (2-8) accounted for over 50% of the total acres burned that year in each state. The Big Fires accounted for 75-99% of all acres burned, even though they are always less than 2 percent of the number of fires in the state.

Year	Total Acres Burned/Yr	#Fires/Yr	Number of “Big Fires” (>1,000 Acres)	Number of Big Fires that burned >50% of total acres/yr	Percent of Total Acreage Burned by Big Fires
2008	1,593,690	4,923	95	8	92.36%
2009	422,147	9,159	38	2	96.49%
2010	109,529	6,554	17	6	63.68%
2011	168,545	7,989	24	4	87.70%
2012	869,599	7,950	43	4	82.34%
2013	601,625	9,907	28	3	87.86%
2014	625,540	7,865	37	4	84.13%
2015	893,362	8,745	23	5	77.61%
2016	669,534	7,349	33	6	75.37%
2017	1,381,405	9,133	61	7	92.97%
2018	1,893,913	8,527	58	5	83.17%
2019	259,823	7,860	36	2	99.40%
2020	4,397,809	9,917	74	5	94.70%
2021	2,569,009	8,527	39	3	97.00%

Thus there are two sets of necessary fire mitigation measures. For small-scale fires, having defensible space around structures, building fire breaks, clearing annual weeds away from road edges and houses, and directly fighting fires work quite well.

For big fires, the major tactics are evacuating people out of harm’s way, and using fire-resistant landscaping and building techniques to minimize ignition from flying embers. As a desperation defense or in purpose-designed systems, sheltering in place can work. Unfortunately, none of these are foolproof, especially sheltering in place in a building built to code.

Building to code helps reduce the chance of a building burning down, but it is not intended to make buildings fireproof. Chapter 7A of the California Building Code states that “[t]he purpose of this chapter is to establish minimum standards for the protection of life and property by increasing the ability of a building located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland-Urban Interface Fire Area to resist the intrusion of flames or burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses.”

Chapter 7A *does not warranty* that a building built to code is fireproof or even suitable for shelter in place. While we agree that sheltering in a new home might be somewhat safer than

getting stuck in a car as in the tragic Paradise fire, it is a far cry from designed for true shelter in place. **Why was it labeled as such?**

In summary, the Project's fire protection plan has to protect against two kinds of fires, and it does have some mitigation features to protect against both. Furthermore, we agree that small fires, a category which includes the majority of the fires that have occurred on the site, are unlikely to cause damage to humans or buildings. **Resistance to small fires is necessary, not sufficient, to reduce fire risk on the site, because the majority of the risk comes from Big Fires and especially from Godzilla-scale fires like the Cedar or Witch fires of years past.**

We disagree that the measures taken are sufficient to protect humans and property from harm by large, wind-driven fires. Since two of these monsters have burned the site, any project built on it is vulnerable. As the data from California show, almost all losses of buildings and lives happen in the big fires. The FREIR recognizes this in its evacuation plan, but it mistakenly asserts that the measures it proposes will reduce the risk during extreme, wind-driven fires, to "below significance." This is a mistake, because there are no quantitative measures of safety provided, only assertions by people who have worn uniforms. **What substantial, quantitative evidence exists to demonstrate what the threshold for non-significant fire impacts to people and structures is? What evidence and analysis demonstrates that the Project's measures lower risks from big fires below this threshold?**

#### *What Working Shelter-In-Place Looks Like*

The Project proposes that buildings built to code can be used for safe shelter in place. The code makes no such assertion. To illustrate the difference between "built to code" and "safe for shelter in place," we need an example.

The best-known local example of a true shelter-in-place system for three thousand people is Pepperdine University,<sup>1</sup> which has deployed their continually-updated system successfully in a number of big fires. The differences between their current version and the Proposed Project are instructive, because they demonstrate why shelter-in-place on the Project site is a last resort in a growing disaster.

Pepperdine's sits at the mouth of fire-prone Malibu Canyon. Even when the campus was designed in the 1970s, the site was known to burn, and in fact it did burn while the buildings were under construction. Pepperdine's problem is that many of its students don't have cars, so they can't easily evacuate down Pacific Coast Highway, even if the normal evacuation gridlock would let them leave. Because of its large and vulnerable population, the campus was designed to be fire resistant with its distinctive "Modernist Mediterranean" style, and the huge lawn surrounding it is supposed to be a fire defense. Nevertheless, the real defense is that everyone on campus shelters in the library and administration during big fires, while ten fire engines from the nearby Malibu Fire Department stand guard around those buildings. Campus staff stock emergency supplies in the shelter buildings and regularly conduct full fire drills for everyone. The backbone of the system are the staff, not the residents, and the staff work regularly to update their safety program in concert with the City of Malibu.

This is the only large-scale shelter-in-place system we know of in Southern California. **What additional planning, staffing, resources, and structures, and coordination with the City of Santee and firefighting agencies would the Project have to add to provide safety comparable to what Pepperdine has demonstrated? This is what is needed for shelter in place.**

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<sup>111</sup> <https://la.curbed.com/2018/11/20/18097889/wildfire-pepperdine-malibu-shelter-in-place>

### ***Financial Impacts of Fire on the Project Site***

The *financial costs* implicit in “acceptable levels of risk” were not analyzed. **Why not?** Here is an estimate of such costs. It is based on working paper 29621 published in December 2021, by two researchers from the National Bureau of Economic Research, Patrick Baylis and Judson Boomhower.<sup>2</sup> Their work is not focused on Fanita Ranch, but rather on the benefits and costs of California’s building code with respect to wildfire losses. California’s 2007 building code is the strictest in the nation. They wanted to determine whether it actually reduced the number of homes lost to wildfires, what the costs for rebuilding a burned home in California are, whether it is cost-effective to build to the 2007 code, and cost-effective to retrofit other homes to meet modern standards. In doing this work, they compiled a detailed database of over 46,000 single-family homes in California that were damaged or destroyed by wildfires. Their analysis is useful in this case because it is impartial with respect to the FREIR, and importantly because it puts quantitative estimates on the Project’s fire risk, something largely missing from the FREIR.

Briefly, what Baylis and Boomhower discovered was that about 35% of California homes built before 1989 burned when hit by a wildfire, while homes built after 2007 burned about 20% of the time. Thus they conclude that the current building code does reduce fire risk substantially. By their estimate, if a single-family home burns in California, it costs around \$150,000 to haul away debris and clean up the site, \$61,696 for the displaced family to rent a dwelling for two years while their home is rebuilt, and \$766,725 to rebuild the home, for a total cost per home burned of \$978,421.

**How much would a wildfire hitting the proposed Fanita Ranch project cost? If we assume that 2,514 single-family homes would be built on Fanita Ranch and that 20 percent of these homes burn, we estimate that 503 homes will burn every time a major wildfire burns the Project. It would cost an estimated \$75,450,000 to haul away the remnants of those homes and clean the site, an estimated \$31,033,088 to house the 503 displaced families while their homes are being rebuilt, and an estimated \$385,662,675 to rebuild the 503 single-family homes, for a total estimated cost of \$492,145,763 per large fire.**

**Note that \$492,145,763 is a gross underestimate of the Project’s total “acceptable risk.” It includes losses only to single-family homes, not to townhomes, condominiums, businesses, or other structures. It makes the optimistic assumption that the cost model is accurate for Santee, although San Diego County has one of the most expensive housing markets in the nation. It also does not account for the impacted rental market, long permitting times, possible litigation delays, or inflation. Among other things.**

**Why is this at such sharp odds from the FREIR’s conclusion?** As noted in the previous section, the FREIR analysis is largely qualitative. It is predicated on the notion that the site has to prepare only for generic wildfires when the evidence strongly suggests that little fires and wind-driven infernos are radically different and require radically different strategies. Small fires can be fought, but in wind-driven infernos, evacuation and structure design are what cause the 20% losses.

While we present quantitative evidence that 20 percent of built-to-code homes are lost in wildfires, this shouldn’t have been news, because similar losses were reported in the Paradise, Woolsey, and other fires years ago. **Why did the FREIR not contain an analysis of the**

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<sup>2</sup> Baylis, PW and J Boomhower. 2021. Mandated vs. Voluntary Adaptation to Natural Disasters: The Case of U.S. Wildfires. <http://www.nber.org/papers/w29621>

**limitations of the building code?** It is the best in the US, but it does not make for fireproof homes.

In this section, we point out that the CEQA question--would the project “expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?”—**does not specify that the people impacted are only the site residents. Someone has to pay for the damage, and they are impacted by this project. The impacts from even 20% of Fanita Ranch burning dwarf the City of Santee’s annual budget.**

***Who is impacted by Project wildfire losses?***

- Residents
- The owners of homes and buildings
- Workers in the businesses and other employees and contractors
- Companies insuring homes, buildings, and businesses
- The City of Santee, for lost property taxes, damage and cleanup expenses, firefighting, etc.
- Those who plan to minimize the amount of organic debris going into landfills (County and State)
- The area rental market (for displaced Project residents)
- Stormwater facilities downstream
- State of California, who will likely be asked to make good on uninsured losses. The California Attorney General’s office has intervened in multiple fire-related CEQA cases. Were they notified?
- Federal government, who will also likely be asked to make good on uninsured losses.

**Were the proper representatives of all of these groups notified that this Project could impact them or their interests? Which ones were left out? What is the plan to notify the ones left out? Will comments be reopened?**

**The widespread and unmitigated financial impacts of this Project strongly suggest that the Project needs to go before the voters. Will it? If the Santee City Council decides that a half-billion dollar financial risk is insignificant, perhaps it is worth asking the voters if they agree?**

In sum, the impacts to wildfire have not been mitigated below the level of significance by the FREIR. More work needs to be done before this document is complete. If quantitative estimates of the impacts cannot be estimated, and if the Projects impacts cannot be lowered below the level of significance, given the enormous financial risks the Project holds, it is probably more prudent to avoid the risks entirely by not building it.

**NEW INFORMATION: Crotch’s bumblebee (*Bombus crotchii*)**

The following section is attached with permission of CNPS by Frank Landis, who is writing as a member of the public in this section, not representing CNPS. This happens when a review of a document turns up an omission that other groups are not advocating for. CNPS does not advocate for insects, although pollinators are critically important to the continued survival of native plants.

The issue here is Crotch’s Bumblebee (*Bombus crotchii*). This rare bumblebee is currently a candidate for listing under the California Endangered Species Act, and as such, it is entitled to the protection it would receive as if it were listed, until CDFW makes a final determination of its status.

In April, 2019, the Fish and Game Commission voted to give Crotch's Bumblebee candidate status. That decision was legally challenged in September 2019, and overruled in November 2020. On May 31, 2022, before the FREIR was sent out for public comment, the appellate court overturned the lower court's ruling and reinstated Crotch's bumblebee as a candidate species.

This matters because, according to the CNDDDB, Crotch's bumblebee has been collected five times in Mission Trails and East Elliott between May 2011 and late July 2020. It was also captured in June 2010 on Miramar just south of Poway. All these collections are within about three miles of the Project site. All its known food plants are documented as occurring on the site in the May 2020 Biological Technical report for the previous DREIR on the Project. The vegetation communities described for the Project site in that document are also consistent with known Crotch's bumblebee habitat.

**Why was Crotch's Bumblebee not surveyed for in the previous iteration of the Project EIR?** This question should be answered in the response, but it is quite evident that no effort was made to survey for bees or flies for the EIR. Butterflies were the only pollinators systematically surveyed for, and the only wasp recorded was the large, obvious Tarantula Hawk that even botanists readily notice. There is no mention even of honeybees being observed in the field, let alone bumblebees. Had any attempt been made to search for bees, surely the ubiquitous presence of honeybees would have been noted!

**Thus, the Project has a high likelihood of a candidate listed species on the site, and no attempt was made to survey for that species. The species' legal condition changed before the DFEIR was issued in June, so it should have been the subject of focused surveys, and those surveys should have been performed in the last few months. This was not done, even though it is a straightforward effort.**

The solution is simple: conduct focused surveys for Crotch's bumblebee on the Project site during the appropriate season (spring and summer). If the species is present, determine if it will be impacted by the Project or not. If it will be impacted, create suitable mitigations. If existing mitigation plans already protect it, present substantial evidence that this is the case. If it is not present on the site, present evidence of a suitable search.

**This species was not covered by previous litigation, nor by previous EIRs. Here I present substantial evidence to warrant a survey to determine its status on the Project site, whether the Project impacts a population, and how to avoid or mitigate any impacts as required.**

Thank you for taking these comments. Please keep CNPSSD informed of all developments with this project and associated documents and meetings, through email to [conservation@cnpssd.org](mailto:conservation@cnpssd.org) and [franklandis03@yahoo.com](mailto:franklandis03@yahoo.com).

Sincerely,



Frank Landis, PhD  
Conservation Chair

California Native Plant Society, San Diego Chapter

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## Blom, Erica

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**From:** Friends of Rose Creek <info@saverosecreek.org>  
**Sent:** Friday, July 29, 2022 1:18 PM  
**To:** Blom, Erica; Mumpower, Priscilla  
**Subject:** [External] Comment on LAFCO Agenda item 7a- Request amendment to Staff Addendum, removal of recommendation 9b

On behalf of the Friends of Rose Creek, I am providing the following comments,

Dear Commissioners,

Harvest Hills is one of the worst and most dangerously located development projects in the region. It is opposed by over 50 organizations including the Friends of Rose Creek.

While Recommendation 9(a) is sound and we support it, **we recommend elimination of 9b.**

A major change in municipal services, such as for the Harvest Hills project, should be part of a comprehensive services and sphere review rather than considered in a piecemeal fashion.

This project has failed to advance over a multi-decade period. The reasons for this include recent information on the project's insurmountable fire and evacuation issues. There is even more evidence of the severe threat that this project would pose to existing neighbors and neighboring communities, including the San Diego Zoo Safari Park – a world class research institution that is preserving biodiversity for many species on the brink of extinction.

We fully support the comments of the following organizations previously submitted:

- Sierra Club North County Group
- Endangered Habitats League
- San Pasqual Valley Preservation Alliance

Thank you for taking the time to review our comments.

Warmly,

Karin Zirk, Ph.D. (she/her/hers)  
Executive Director  
Friends of Rose Creek  
\*\*\* Connecting Our Communities \*\*\*  
<https://www.saverosecreek.org>

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## Blom, Erica

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**From:** Pam Heatherington San Diego <contactecosd@gmail.com>  
**Sent:** Friday, July 29, 2022 1:28 PM  
**To:** Blom, Erica; Mumpower, Priscilla  
**Subject:** [External] Comment on LAFCO Agenda item 7a- Request removal of recommendation 9b.

Dear Commissioners,

The Environmental Center of San Diego works to protect and enhance the natural environment throughout San Diego. We support the letter from the Sierra Club North County Group, Endangered Habitats League, and San Pasqual Valley Preservation Alliance requesting the removal of 9b in Agenda item 7a.

Thank you,  
Pamela Heatherington  
Board of Directors  
Environmental Center of San Diego

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**Blom, Erica**

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**From:** Joanne Tenney <joannetenney@hotmail.com>  
**Sent:** Friday, July 29, 2022 2:02 PM  
**To:** Blom, Erica  
**Subject:** [External] Fire Risk Assessment

Support removing Recommendation 9B.

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## Blom, Erica

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**From:** Susan Baldwin <susanbaldwin@aol.com>  
**Sent:** Friday, July 29, 2022 3:58 PM  
**To:** Blom, Erica; Mumpower, Priscilla  
**Cc:** laurahunter744@gmail.com; dsilverla@me.com  
**Subject:** [External] Comment on LAFCO Agenda Item 7a: Request elimination of Recommendation 9b in the MSR Report Summary

Dear LAFCO Commissioners,

I am writing to support the recommendation in the letter you received from Laura Hunter, Dan Silver, and NeySa Ely regarding Agenda Item 7a to eliminate Recommendation 9b in the Municipal Service Review REPORT SUMMARY | July 2022.

A major change in municipal services, such as for the Harvest Hills project, should be part of a comprehensive services and sphere review rather than considered in a piecemeal fashion.

Thank you for your consideration.

Sincerely,

Susan B. Baldwin, AICP  
San Diegans for Managed Growth  
susanbaldwin@aol.com  
619-867-5028

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## Blom, Erica

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**From:** Laura Hunter <laurahunter744@gmail.com>  
**Sent:** Friday, July 29, 2022 11:36 AM  
**To:** Blom, Erica; Mumpower, Priscilla; Simonds,Keene  
**Cc:** Adam Finestone; afirestine@escondido.org; Paul McNamara; Rvogt  
**Subject:** [External] Comment on LAFCO Agenda item 7a- Request amendment to Staff Adendum, removal of recommendation 9b.  
**Attachments:** FireRisk Assessment 24AUGUST2021.pdf; GCTC Harvest Hills Evacuation Memo - 2-17-22.pdf; Vogt\_Rhode Memo 21Sept2021.pdf

Please distribute to all LAFCO Commissioners and Alternates,

Thank you

Dear Commissioners,

The wildfire this week, in the Witch Creek area again, is an on-going reminder that development in high-risk fire areas is unacceptable and unsafe.

Harvest Hills is one of the worst and most dangerously located development projects in the region. It is opposed by over 50 organizations.

Although we have not fully reviewed all of the documentation, we recognize the need for the Escondido MSR and, in general, we support the recommendations in the LAFCO staff addendum with one exception.

While Recommendation 9(a) is sound and we support it, **we recommend elimination of 9b.**

A major change in municipal services, such as for the Harvest Hills project, should be part of a comprehensive services and sphere review rather than considered in a piecemeal fashion.

This project has failed to advance over a multi-decade period. The reasons for this include recent information on the project's insurmountable fire and evacuation issues. There is even more evidence of the severe threat that this project would pose to existing neighbors and neighboring communities, including the San Diego Zoo Safari Park.

Please find three attached reports highly relevant to the fire situation of Harvest Hills,

1. Fire Risk Assessment of Harvest Hills, August 26, 2021. Rohde and Associates was commissioned by the city of Escondido for a Fire Risk Assessment of the project and to review Harvest Hills' Fire Protection Plan. They found it grossly deficient. The findings are devastating and the 'fixes' and highly expensive and have not been evaluated in any of the environmental review. Fire Risk Assessment, August 26, 2021.
2. We also attach a review of the Rohde report by expert firm Griffin Cove Transportation Consulting, February 17, 2022. This analysis looked at several scenarios and found gridlock, stranding, and failures of evacuation. It demonstrates that, even **with** the Rohde recommendations, *...none of the evacuation scenarios provide sufficient road capacity to allow for safe evacuation of Harvest Hills or the neighboring communities.*

3. A Memorandum from Chief Rick Vogt in response to the Rohde Report listing nine major areas of concern. September 21, 2021

The problems with Harvest Hills are insurmountable and the project is dangerous. It should not be fast-tracked in any way and only considered as part of a comprehensive review.

Thank you for considering our input

Laura Hunter, Sierra Club North County Group

Dan Silver, Endangered Habitats League

NeySa Ely, San Pasqual Valley Preservation Alliance

## Blom, Erica

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**From:** Bob Glaser <bobglaser@aol.com>  
**Sent:** Friday, July 29, 2022 1:16 PM  
**To:** Blom, Erica  
**Subject:** [External] Harvest Hills Item

Dear Commissioners,

The wildfire this week, in the Witch Creek area again, is an on-going reminder that development in high-risk fire areas is unacceptable and unsafe.

Harvest Hills is one of the worst and most dangerously located development projects in the region. It is opposed by over 50 organizations.

Although we have not fully reviewed all of the documentation, we recognize the need for the Escondido MSR and, in general, we support the recommendations in the LAFCO staff addendum with one exception.

While Recommendation 9(a) is sound and we support it, **we recommend elimination of 9b.**

A major change in municipal services, such as for the Harvest Hills project, should be part of a comprehensive services and sphere review rather than considered in a piecemeal fashion.

This project has failed to advance over a multi-decade period. The reasons for this include recent information on the project's insurmountable fire and evacuation issues. There is even more evidence of the severe threat that this project would pose to existing neighbors and neighboring communities, including the San Diego Zoo Safari Park.

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Thank you for considering my input.

[Sent from the all new AOL app for Android](#)

# HARVEST HILLS

Planned Community Development

## ***FIRE RISK ASSESSMENT***



*Prepared for the City of Escondido by:  
Rohde & Associates*



**August 24, 2021**

# **HARVEST HILLS**

## **FIRE RISK ASSESSMENT**

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**The Project**

Harvest Hills is a proposed planned community development in the western San Pasqual Valley, an unincorporated area of San Diego County, California. The proposed development would be incorporated into the City of Escondido, if approved for development. Collectively, this development is referred to in this study as the “Project”. The proposed planned community includes 550 single family dwellings, for approximately 1,716 residents on a 1,098-acre project site. Lot sizes within the project will range from 8,000-200,000 square feet. Seven project development phases are proposed in the project scope (Dudek, 2020). The Harvest Hills village core will include a 2-acre community center with a clubhouse (“The Farm House”), pool, and tennis facilities and an adjacent 2.3-acre fire station site. No other public facilities are currently planned for inclusion in the development

A development plan has been under discussion with the City of Escondido for over six years. Previously, the project was referred to under the name “Safari Highlands Ranch”. The development is currently engaged in governmental review and the preparation of an Environmental Impact Report pursuant to CEQA and has submitted a Fire Protection Plan (v.2, Dec. 2020). Rohde & Associates LLC, fire safety consultants, have been retained by the City of Escondido to conduct a fire risk assessment of the project, including specifically those aspects that deal with wildfire and structural fire and life safety.

The project would be located west of the San Diego Zoo Safari Park, east of the residential neighborhood of Cloverdale, and north of State Highway 78/San Pasqual Valley Road. The development site is located generally along ridgelines rising above rugged terrain and steep slopes.

Project aerial view looking west to east



## **The Project Site**

The greater project area is located in the Santa Ysabel creek watershed area of North San Diego County, in an area also known as San Pasqual Valley. The creek drainage is a predominantly east-west oriented significant canyon located immediately east of the City of Escondido. The canyon is traversed by State Route 78, which is a primary route between coastal communities and inland areas including the Community of Ramona to the east. The site currently consists of private agricultural/rural lands along the canyon floor and undeveloped lands along slopes and ridges. The project has adjacency to the 1,800-acre San Diego Zoo Safari Park on its east flank. The 50-acre San Pasqual Battlefield State Historic Park is located immediately east of the zoo. The San Diego County San Pasqual Academy, a large foster youth group home is located east of the State Park. Both the State Park and Academy are located along the valley floor. Upland and ridge areas north of SR78 and east of the project are currently occupied by large animal pens near the zoo, some abandoned orchard facilities, and is dotted with a few rural homes. The project proposes siting of larger homes ranging to estate size, prominently located along ridgelines to the north of SR78 and immediately west of the zoo properties. West of the proposed development and along a valley floor is an existing community of Cloverdale within the City of Escondido. A steep, undeveloped slope separates the project from Cloverdale, although an access road to the project is expected to traverse from the valley floor into the project.

The project site is currently covered by grass and shrub vegetation, including both sage and heavier chaparral shrubs. Some riparian and oak areas are present within the project site. The majority of proposed development will be constructed along ridgelines where slopes of up to 50% rise from the valley floor to a maximum elevation of 1,820 feet. The valley elevation at the lower end of the project is 420 feet. The entire project area is within State designated Very High Fire Hazard Severity Zone.

## Analysis Approach

Rohde and Associates has assigned four staff members to this project with over 130 years of collective fire service experience in Southern California, including a nationally recognized wildfire behavior analyst. This team conducted a fire risk assessment both of the proposed Harvest Hills project and for the greater planning area. On-site reviews were performed by the team during the period June-July, 2021.

Since wildfire has been determined by agencies to be the predominant fire risk to the development site, the consultants have been tasked to conduct a wildland fire-centric study. The analysis of related data has included:

- a. Fire Protection Plan (and appendices), prepared on behalf of the project proponent Concordia Homes, by Dudek of Encinitas, CA. (v.2) December, 2020.

- b. An Emergency Evacuation Analysis within the project's Fire Protection Plan (Dudek 2020)
- c. Harvest Hills Specific Plan, related maps, water services reports, and plan appendices, prepared by the project proponent for the City of Escondido, November, 2019.
- d. Traffic Technical Memorandum, prepared by the project proponent for the City of Escondido, November, 2019
- e. County of San Diego High/Very High Fire Severity Zone data.
- f. San Diego County fuels and topographic mapping.
- g. State of California Forest Resource and Protection Program (FRAP) data.
- h. Fire history map data for the San Pasqual Valley region
- i. Potential Fire behavior data produced by BehavePlus, FlamMap, and LANDFIRE applications.
- j. Wildland-Urban Interface Fire Emergency Response Plans, San Diego County Fire Chiefs Association, 2015- 2021 (Cloverdale, San Pasqual-Safari Park, and Community of Ramona area: Ramona North, Ramona West Plans).
- k. Wildland Fire Evacuation Plans, City of Ramona area, and San Diego Zoo Safari Park.

## **Site Characterization and Fire Behavior**

### Climate

The site is subject to a Mediterranean Climate with dry, warm summers, and brief, wet winters. This historically results in summer and fall critical fire weather on the project site. Critical fire weather periods have occurred in every month of the year, although a fall through winter foehn wind condition, the Santa Ana winds, historically leads to the most critical fire-weather episodes. Climate change has caused uncertainty with historical fire weather patterns, and periods of prolonged drought has increased fire severity, total burned acreage, and extended a seasonal fire condition to a "year-round" risk.

### Fire History

The proposed project lies within an active historical fire corridor subject to repeated occurrence of large, Santa Ana (east-northeast) wind-driven wildfires. Additionally, smaller fires affected by daily onshore (west-southwest) wind

conditions are not uncommon within the area. Large fires have repeatedly swept the Santa Ysabel creek drainage and wildfire rates of spread have been documented averaging 3+ MPH for most fires and up to 6 MPH during peak runs. Large fires have been recorded in the region since 1910 including 1910, 1911, 1912, 1913, 1914, 1919, 1927, 1938, 1943, 1945, 1946, 1949, 1950, 1951, 1952, 1955, 1956, 1962, 1965, 1967, 1970, 1972, 1974, 1975, 1978, 1979, 1980, 1981, 1984, 1985, 1987, 1988, 1989, 1991, 1993, 1995, 1997, 2003, 2004, 2007, and 2013, all burning within 5 miles of the project site. The site was burned completely in the 1910s, 1950s, 1993 (Guejito Fire), and 2007 (Witch Fire) and was partially burned in the 1930s. This information excludes fires less than 10 acres. (FRAP, Dudek 2020). This fire history presents one of the most frequent fire-return-interval rates in Southern California.

### Witch Creek Fire

Of the largest and most recent fires, the October 22, 2007 Witch Creek Fire (a.k.a. “Witch”) burned 1,265 homes and 587 outbuildings, and caused the evacuation of 500,000, burning 240,207 acres and contributing to two civilian deaths. Wind gusts in the San Pasqual Valley during the fire were recorded over 100 MPH. While the Witch Creek and Poomacha wildfires burned together, the Witch Creek fire alone burned 197,990 acres. The California Highway Patrol was forced to close both State Route 78 and Interstate 15 to civilian vehicle traffic during the height of the fire, complicating evacuations. Insured loss for the fire exceeded \$1.142 Billion, and suppression costs exceeded \$1.3 Billion. This was one of the largest and most damaging fires in San Diego County history. While the entire Harvest Hills project site was burned during the fire, no developed properties were lost here at that time, as the property was undeveloped.

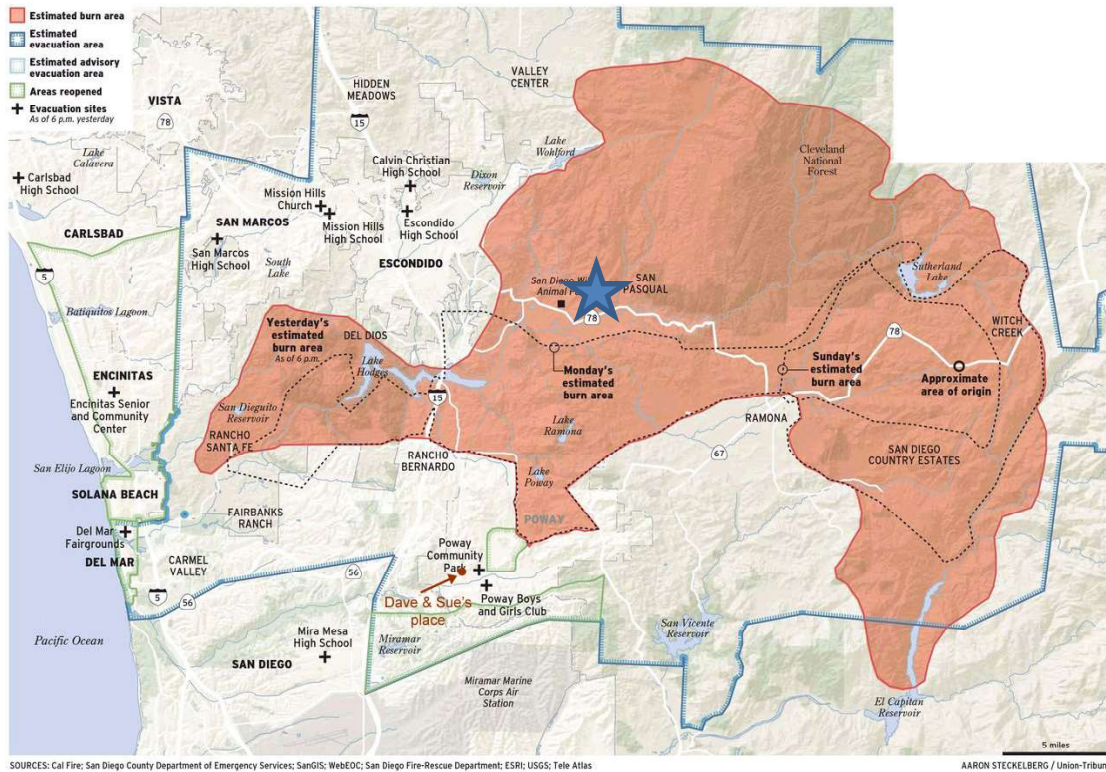
This fire offers a perspective common of many San Diego County wildfire occurrences in that large area was affected, multiple large fires occurred simultaneously, and the large scale of the emergency drove a need firefighting and evacuation on a regional rather than local basis. This concept underscores the importance of consideration of developmental impacts on the broader community-at-risk. Since many of these fires repeat historical spread patterns, it is likely that future wildfires will affect this entire historical wildfire corridor in similar ways to past wildfire occurrence. Project evacuation planning must be in scope and concurrent with those of the broader region.

Witch Creek Fire in Rancho Bernardo



While the proposed project development footprint and manner of development may aid in developing new ignition and spread resistance to fires and buffer some existing development from direct fire assault, the community's proposed position within the historic fire corridor will ensure its exposure over time to large and high intensity wildfires, as wildfire historically will reburn over past fire footprints.

Witch Creek Fire Map- Project location indicated by blue star



## Fire Weather and Behavior

### Offshore winds

Santa Ana winds are an offshore foehn wind condition which characteristically critically dries vegetation, develops high wind speeds and low relative humidity, and spawns wildfires throughout the region. Santa Ana winds typically flow in an offshore, east or northeast pattern and have occurred in every month of the year, but are characteristic of the September through April period. Peak burning conditions occurring with Santa Anas often include high thermal outputs, long-range spotting in excess of 1-mile, "fire whirl" tornadic like activity, high rates of spread, and other extreme fire behavior. The offshore gradient of these winds may continue day or night until casual atmospheric pressure gradients relax.

Average Santa Ana wind speeds within the project may range from 25 to 35 MPH, with gusts to 60 MPH+ on exposed sites. Gusts have been recorded in excess of 100 MPH adjacent to the project area, San Pasqual Valley frequently is

topographically aligned with Santa Ana wind patterns with a north-east or east wind vector, accentuating fire or wind effects in the project area. Peak windspeeds may be expected at planned development sites along ridgelines where winds are unobstructed.

When a north-easterly or east pattern is present, San Pasqual Valley feels the full effects of Santa Ana wind. In the case of wind obstructed sites such as the lee sides of ridges, winds may be expected to be variable in direction and turbulent. The physical alignment of the Santa Ysabel creek drainage with Santa Ana winds has the potential to produce maximum fire intensity and cause fire trajectory to be channeled to exposed home sites. As such, additional mitigations are necessary for these sites for fire safety. Fire behavior and weather review has indicated historical trends, reflected in the chart below:

*Harvest Hills Project Site - Santa Ana fire conditions- 50-year average*

<b>Max. Temp.- offshore winds</b>	<b>Min. Relative Humidity (RH)- offshore winds</b>	<b>Average offshore wind speed</b>	<b>Average offshore gusts</b>	<b>Flame Lengths</b>	<b>Spotting Distance</b>	<b>Rate of Spread</b>
100-108 degrees F.	3-5%	25-35 MPH	50 MPH	45-65 ft.	¾ mile	2.5-3.5 MPH

Onshore Winds

During normal diurnal conditions, onshore winds of low to moderate intensity will likely affect the project site daily, beginning with solar heating early in the day, with onshore/up-canyon winds diminishing after sunset. Light, down-canyon winds will be the routine condition after dark. Summertime critical fire weather events can occur and are frequently associated with prolonged periods of hot temperatures, low relative humidity, low fuel moistures associated with seasonal drought, strong/dominant high pressure and moderate diurnal/ onshore winds. While fire behavior can be critical under these conditions, wind speeds are typically less severe than during Santa Ana wind events. Fire behavior and weather review has indicated historical trends, reflected in the chart below:

*Harvest Hills Project Site - peak summer diurnal fire conditions- 50-year average*

<b>Max. Temp.- Onshore winds</b>	<b>Min. Relative Humidity (RH)- onshore</b>	<b>Average onshore wind speed</b>	<b>Average onshore gusts</b>	<b>Flame Lengths</b>	<b>Spotting Distance</b>	<b>Rate of Spread</b>
90-100 degrees F.	<15%	7 MPH	20-30 MPH	20-25 ft.	¼ mile	1-2 MPH

### Fuel Conditions

The project area is largely composed of vegetation typical of Southern California coastal and interior chaparral communities. In addition to Southern Mixed Chaparral and Diegan Coastal Sage Scrub, small areas of riparian vegetation, coast live oak woodland, eucalyptus, and both native and non-native grasslands exist on and near the site. Grazing and agricultural use has been common on lower elevation sites. The spatial area of each habitat type is adequately reflected in maps included within the project proponent's Fire Protection Plan (Dudek, 2020). Grass and sage scrub dominate the lower elevations, and mixed chaparral dominate higher elevation sites. Vegetative cover within the project area was burned in 2007 and is recovering. Fuel loading for the project site is estimated to be .4 to .5 tons per acre for grass, 6 tons per acre for sage scrub, and 8-10 tons per acre for mixed chaparral.

Typical wildland fuels in the project area



### Effect of fuels

Current fuel conditions are of moderate to old age class, recovering from the effects of the 2007 Witch Creek Fire in many locations. Some project locations were spared by the Witch Creek Fire and currently support higher density "islands" of fuels. The overall condition may support high intensity or large wildfires under wind-driven or extreme burning conditions. As fuel conditions continue to age and mature, large fire energy release potential and spotting fire behavior may be expected to increase. These fuel beds should achieve climax conditions within 25 to 30 years post-fire.

A principal effect in fire behavior is demonstrated by flame length production. This is an important factor which relates to difficulty to control, potential for direct flame impingement upon structures, demands for fuel modification width, or for fire obstruction of roadways used for evacuations. Given the fuels condition present, flame lengths may be reduced by up to 1/3 that of climax fuels potential in this area. We forecast that near-climax shrub fuels may generate flame lengths of

40-60 feet. This generally agrees with the proponent's initial Fire Protection Plan (Dudek, 2020) findings. Much of the development proposed by the project is located above steep slopes ranging to 50%. These slopes will accentuate fuels driven fire behavior by a factor of 2-3x, especially when slopes are in alignment with wind. This condition drives the need for enhanced fuel modification distances, structural setbacks, and construction aspects which may resist these enhanced fire intensities.

Rates of spread are likely to be higher in the sub-climax fuel condition due to the higher percentiles of small woody and grass-like fuel structure present. Rates of spread for the current fuel condition was calculated using area historical averages for Santa Ana winds. This calculation resulted in an average wildfire rate of spread for shrub fuels of 2.5 to 3.5 MPH, although peak rates of spread have been observed on area fires at near twice that rate, especially in locations where wind, topography, and fuels were in alignment, or where a heavier grass component were present. The Dudek report (2020) generally concurs with these calculations.

As shrub fuel conditions reach post fire climax, under critical burning conditions the risk for spotting will increase and fire intensities may increase with the availability of heavier fuels. Spotting may become particularly problematic near ridgelines where fires may loft burning materials up and over. This issue suggests that ember cast from Santa Ana wind driven fires into the project will become an increasing risk as fuels continue to recover from the 2007 burn condition. Spotting may become particularly problematic downwind from heavier fuel beds as they mature.

National fire research by Cohen (2008) and Manzello (2014) have identified that fire brand casting is a principal factor in ignition of structures in the Wildland-Urban Interface. This consideration should cause planners to consider extensive protection from fire branding for the proposed development in structural design, use and placement of ornamental vegetation, placement and design of structural features such as decks, gazebos and external structures, structural setbacks from vegetation, modification of native fuels in internal community islands, and related actions to reduce ignition by fire branding. These conditions should include focus on attic vents, eaves, roofing materials, exterior fencing materials, and ornamental vegetation restrictions. Such actions are all required by fire and building codes for the area and are recognized in the project Fire Protection Plan (Dudek, 2020).

### Ember Production

The principal means of structural ignition (Cohen) is ember cast from fires burning in adjacent wildland fuels. Embers may cross significant distances to land in receptive fuels or locations, spreading spot fires considerable distances from fire fronts. Ember cast has occurred historically at long range in this area due to its frequent and high Santa Ana winds and adjacency of native fuels. Ember ignition resistance is chiefly developed within the project through compliance with local and State building and fire codes, the use of fire resistive materials and methods, and the restriction of yard structures and combustible features.

Ember cast and spotting will be a significant feature in most large wildfires, with distant spotting ahead of the fire becoming problematic in both onshore and offshore wind driven fire behavior. The effects of slope on fire behavior will be significant contributors to increased spotting, especially where wind direction, slope, and heavier fuel beds are aligned to maximize potential fire behavior.



Ember cast during Wildland-Urban Interface Fire

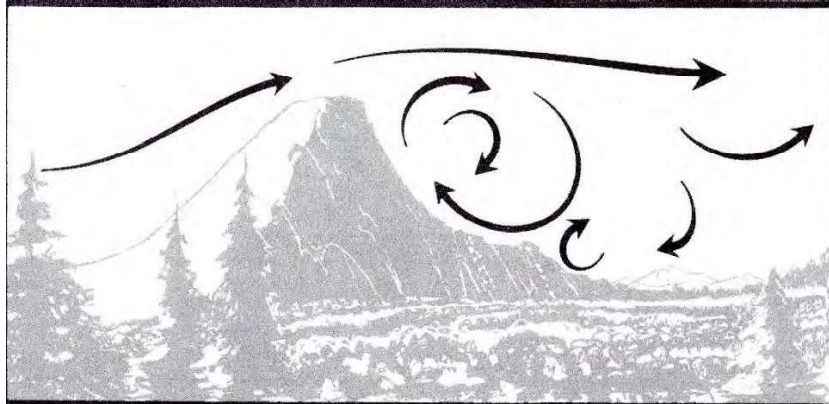
### Topography

Elevations range within the Project from near 420 feet on the San Pasqual Valley floor near SR 78 to 1,820 feet along ridgelines north of SR 78. The area includes rugged topography of steep mountains interspersed among inland valleys. Rugged canyons with slopes ranging from 16% to 50% are common. The San Pasqual Valley rises from west to east into the Community of Ramona on the east. Many wildfires originating near or east of Ramona have run the valley into the City of Escondido. The potential for soil instability post-fire is well understood but not addressed in the Fire Protection Plan. This issue should be addressed by project geologic studies as part of its CEQA compliance.

Terrain has the potential to accentuate fire behavior potential within the project area. Homes are proposed for placement on ridgelines above canyons that will offer wind and slope aligned exposure for wildfires approaching from either onshore or offshore wind conditions. This will accentuate all fire behavior effects, particularly flame lengths and spotting. Ridgelines are also a fire whirl favored location, which offers tornadic like wind influences during wildfire passage.

Ridgeline roll-eddy effects on spotting may also be significant in the upper portions of the project. (Schroeder & Buck, 1970). As ridge top winds along the ridgelines may form horizontal roll vortices on the lee side of ridges. Spot fires which occur in this region may be driven by eddy winds, causing fires to threaten ridgeline homes with force from both the wind facing side of the slope, as well as the lee side. This dynamic has potential to negate the benefit of alternate means of ember control such as ember resistant fencing when installed alone as a structural defense. Such fences themselves may be subject to smaller roll vortices affecting ember movement and

overcoming such barriers. Careful consideration for placement of such structures and consideration of fuels adjacent to fencing is important to the success of such a defense. In the case of this project, 200 feet of fuel modification is proposed in conjunction with these walls which, in the opinion of this study, will reduce fire behavior and ember production effectively, allowing for the likely success of the proposed installation.



*Large roll eddies are typical on the lee side of ridges perpendicular to winds*

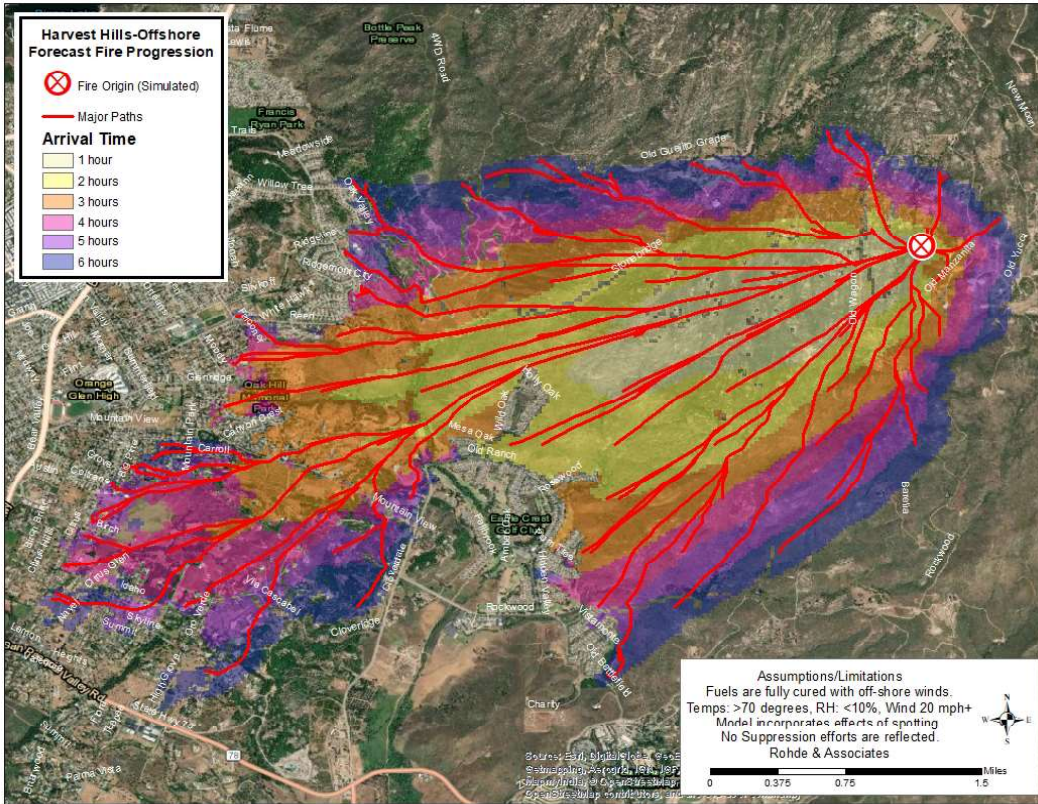
#### Fire Behavior Studies

Wildfire behavior was calculated during this study by a Certified Fire Behavior Analyst using BehavePlus, LandFire, FARSITE, and FlamMap applications. Fifty years of recorded weather data from nearby National Weather Service recording locations was utilized to determine trends in project area fire conditions. Outputs from these studies indicated potential for extreme fire behavior and rates of spread for both onshore and offshore wind driven fires at the project site. These results are consistent with observed fire behavior in and near the project site by a number of interviewed experienced wildfire professionals when dealing with area wildfires. The attached fire behavior maps depict a six-hour rate of spread from a modeled wildfire ignition.

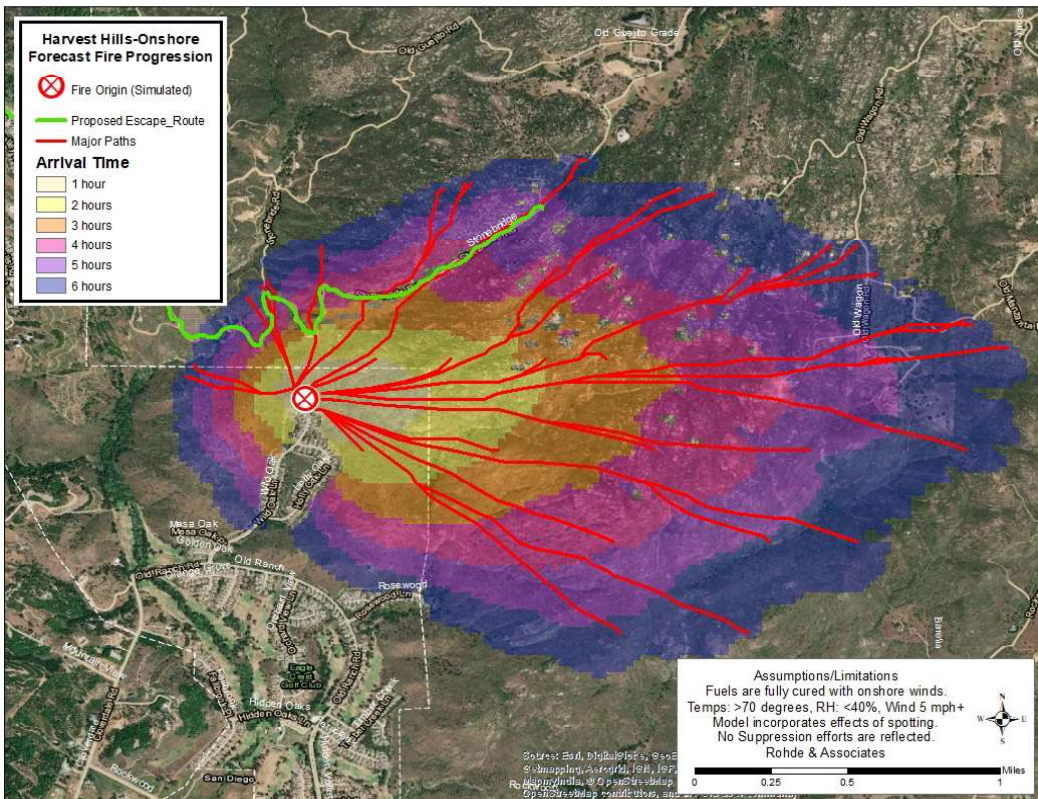
Chief implications from these studies indicate a likelihood of rapid to extreme fire growth for fires escaping initial attack in the project area during average-peak wildfire conditions. Rapid rates of spread will only offer limited time for evacuation under these circumstances, and temporary shelter in place may be necessary and prudent rather than movement during short-notice or proximal wildfire onset.

Modeling outputs verified that average Santa Ana winds in the area may be expected to develop wildfire rates of spread in shrub fuels in the 3 to 4 MPH range, including Coastal Sage Scrub and mixed chaparral. CAL FIRE has identified that any rate of spread exceeding 3 MPH is extreme. Higher rates of spread may be expected in grass fuels, and in locations where fuel, topography and winds are in alignment. This rate of spread may also be accentuated 2x to 3x on slopes. Additionally, spread will be enhanced by spotting and fire branding ahead of the main fire front, which can be significant, especially when fires burn heavy, old-age class fuel beds.

Offshore wind six-hour fire projection with average Santa Ana wind condition



Onshore wind six-hour fire projection during average on-shore wind conditions



Potential wildfire trajectories were calculated for rates of spread and timed trajectory from the eastern San Pasqual Valley to the project site. Outputs ranged from 2 to 3 hours under average Santa Ana winds. Under peak observed fire conditions during the 2007 Witch Creek fire it was reported by observers to have spread that distance at a rate of 3.5 MPH. During onshore winds, trajectory outputs from Cloverdale to the project site ranged from less than 1 hour during peak fire weather to 2 hours.

Development of the Harvest Hills community will likely shield surrounding areas of Cloverdale and the Safari Park from some, but not all wildfire effects, but may introduce new sources of human ignition.

### Fire Ignition Sources

Numerous studies have identified that human wildfire ignition is directly tied to population growth (CAL FIRE, Keeley, et. al.) and is an inescapable result of any development in the Wildland-Urban Interface. Additional studies have determined that major transportation corridors, such as State Route 78, are a significant source of wildland fire ignitions. This factor is of concern, given the position of the SR 78 to the project, in a valley where wildfire ignitions have historically driven fires toward the Project area.

### **Evacuations**

A separate evacuation plan has not yet been prepared by the project; however, the subject is covered within the project's Fire Protection Plan (Dudek, 2020). A strategy is proposed by the proponent allowing for a primary route of access to the project site, and two emergency roads leading north or east of the project. Portions of the eastern emergency road will also serve as a temporary residential access during early construction phases.

Estimates for travel capacity of roads are stated within the Fire Protection Plan (Dudek, 2020) but it is unclear if these estimations are the result of a certified professional traffic study. The project needs to clarify the origin of these findings and confirm the certified results. If a certified study has not been undertaken, this study recommends assumptions be verified by this method. Certified studies are needed for all project roads, including emergency routes, and for SR78 between Zoo road and the Escondido urban fringe, and should be evaluated by City staff for meeting needed capacity.

The project proposes that the primary, two-lane project access road consist of 21 to 24-foot paved lane width, accessing State Route 78 within  $\frac{3}{4}$  mile of the development. The road would be developed to City of Escondido standards and equipped with 50 feet of fuel modification on either side. This is a proposed permanent road feature and would be a primary evacuation route for the project in perpetuity. Other secondary roads within the project leading to this road are proposed to include 20 feet of fuel modification on each side when exposed to wildlands. This report recommends all project roads be upgraded to 50 feet of fuel modification where there is a wildland fuels abutment.

Project proposed emergency access roads would be more phased and transitional. The first emergency access road would be a 1-mile-long, temporary, two-lane paved access from the community center to Zoo Road on the south-east. This road would have two 12-foot paved traffic lanes with 10 feet of fuel modification on each side, and provide temporary access under an initial configuration until the completion of the second escape route later in project phasing. At the phase-in of the Northern evacuation road the Zoo Road access would be modified, eliminating initial connectors with the main entrance roadways near the community center, leaving the access as a gated road below its former connection with community streets. The project proposes to leave the road in this final condition for emergency access.

The second, Northern emergency road would be constructed later in project phasing and would be an emergency evacuation route only, connecting with Stonebridge Road in the City of Escondido via a remote route through 2.4 miles of difficult topography through open wildlands. This evacuation road would consist of two paved lanes of 12 feet each with 10 feet of fuel modification on either side. This road would be gated and locked and augment Zoo Road upon completion as a second emergency access, best serving the northern development of the community. Cistern supplied fire hydrants are proposed and some turnouts along the Northern Road.

Significant areas of concern exist for both proposed emergency evacuation routes. Both routes travel through and across steep terrain with moderate to heavy fuels. Neither route is developed to municipal road standards and travel safety, especially during presence of fire or smoke, will likely be hazardous. Proposed road widths may be inadequate for simultaneous movement of evacuees and responding fire equipment. Public gate access and unlocking methods during emergencies are not stated in the Fire Protection Plan and clarification is needed how the gates will be opened during emergencies. The project should not rely on Police or Fire personnel availability during fire emergencies for this purpose.

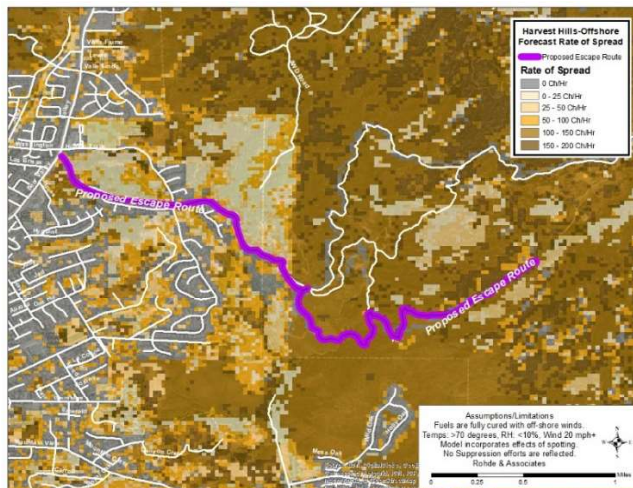
Potential fire behavior was modeled by this study for landscapes near the emergency roads. Flame length potential adjacent to the roads from 40 feet to 60 feet was determined. Such an occurrence would completely overwhelm road and fuel modification widths and could be fatal to persons in vehicles trapped on these roads. A similar road width and fuel condition led to entrapment of two vehicles with 4 fatalities during the Cedar Fire in 2003 near Lakeside, CA. Similarly, fatalities occurred on Skyline Drive near Paradise, CA in 2018 due to similar conditions. It is the opinion of this study that residents may more rapidly achieve safety by descending via the primary route to SR78 then into Escondido, or by sheltering in place and a designated facility within the community.



The project, looking east from Escondido, and Northern Escape Route alignment

The summary opinion of this report is that an adequate secondary access road to the Harvest Hills planned community has not been proposed by the project in compliance with City/County Wildland-Urban Interface standards or best practice. Significant hazards for public use during wildfire have been identified with the proposed route in this study. It is recommended that evacuation routes be upgraded with the following features to potentially meet these standards:

- a. Addition of a third access lane (center divider lane) and development to City/County road standards
- b. Addition of fuel modification to 50 feet on both sides of all community roads with wildland abutment
- c. Creation of large turnouts every ¼ to ½ mile for gathering if fire trajectory blocks movement or for relocation of disabled vehicles
- d. Addition of road safety barriers along slopes and lighting
- e. Development of gate access during emergencies not dependent on emergency services for activation
- f. Maintenance of cistern water supplies during fire hazard periods has not been addressed. The project needs to define how water availability will be maintained.



Fire rate of spread challenges safe drive times along much of Northern Escape Route. Fire ROS 10,000 to 13,200 ft/hr. (2.5 MPH), even without significant winds.

### Emergency Route Alternatives

This study recommends development of alternate emergency access other than the Northern Escape Route, and enhancement of the Zoo Road escape route. This is due to findings of potential extreme fire behavior and severe entrapment potential along both routes, and estimated extensive travel time. This report recommends that best alternatives for population protection likely involve rapid movement of civilians into safety in the City of Escondido via higher capacity/speed access routes, or temporary safe refuge within the community when evacuation cannot be accomplished safely due to time constraints and fire movement.

A preferred road travel alternative is already offered by the project as an emergency use only route. The Zoo Road emergency access has potential for development as a more permanent and safer alternative, and is recommended by this study in lieu of both emergency roads proposed by the project. The Zoo Road accesses SR78, and although it would funnel evacuees to a location 1.5 miles different from the primary road, it would move evacuees with better efficiency and speed than the Northern Access Road and avoid dangerous terrain and fire behavior.

The following improvements are recommended for the emergency access to Zoo Road, with the intent to convert its use to full time-secondary access:

- a. Improvement of the Zoo Road access to City/County road standards
- b. Addition of fuel modification to 50 feet on both sides of the road
- c. Creation of large turnouts every  $\frac{1}{4}$  to  $\frac{1}{2}$  mile for gathering if fire trajectory blocks movement or for relocation of disabled vehicles
- d. Addition of road safety barriers along slopes and lighting
- e. Removal of gate-controlled emergency only access, transition to full time road
- e. Placement of fire hydrants with municipal supplies.
- f. Improvement of SR78 from Zoo drive into the City of Escondido (possible addition of median or third lane or other alternatives, to be determined by certified traffic study)

Considerable daily and evacuation traffic is currently experienced on SR78, and past emergency evacuations have been cumbersome when evacuating the community of Ramona and the San Diego Zoo Safari Park along this route. It is recommended that a traffic study consider SR78 daily and evacuation demand. Currently, SR78 is proposed for signaling and turning improvements but no additional lane capacity. Additional improvements may be required in order to accommodate project loads along SR78, to be determined by certified traffic study.

Any traffic study should not include the use of “contra-flow” as a means of evacuation. Contra flow considers transition of all vehicle lanes outbound to a single direction of travel. Configuration of such travel is law enforcement intensive and generally exceeds the capacity of law enforcement during early critical hours of a wildfire emergency. Contra flow was utilized in the evacuation of Paradise, CA from the Camp Fire in 2018 with poor outcomes. Lack of law enforcement to actively control the activity led to an 8-mile gridlock on the principal evacuation

route with burn-over fatalities occurring in trapped vehicles, and blockage of emergency responder access.

### Temporary Shelter-in-Place

The project's Fire Protection Plan (Dudek, 2020) has identified the use of the Community Center ("The Farm House") facility and fire station as emergency temporary safe refuge for the community population during wildfire. The Community Center will have an assigned occupancy rating for 500. The report has also discussed the availability of temporary safe refuge among some community streets during wildfire passage.

Harvest Hills Community Center ("The Farm House")



This report cites several issues with these findings by Dudek:

- a. Parking capacity at Community Center appears inadequate for the intended occupancy and may only accommodate 1/3 of the Community Center occupancy. Parking should be expanded to better meet facility occupancy limits.
- b. While the Dudek plan identifies emergency public parking at the fire station, the facility will be gated and inaccessible to the public for security measures. The Fire Station may also be used by public safety as a command post. In either case it will likely be inaccessible for this public use, and as such should be eliminated in planning for public safe refuge.
- c. Proposed overflow parking is designated in the Dudek plan as the ball field, but lack of all-weather access is problematic for vehicle access here.
- d. Potential roadside parking or abandonment of vehicles nearby may lead to congestion and blocked access for responding emergency equipment or evacuation. Roadside parking should not be considered as an emergency use option.

In order to meet temporary safe refuge needs, paved parking area needs to be expanded at the Community Center to better accommodate expected occupancy. Parking areas should be configured to provide a buffer to wildlands for the Community Center facilities. The facility itself has been identified for code compliant fire resistive construction. This facility should also be equipped with temporary

emergency power supply and lighting.

“Temporary Safe Refuge Areas” are also discussed in the Fire Protection Plan (Dudek, 2020) among residential streets within the project. This concept is a tactic identified in California Statewide fire training as an emergency action by firefighters for temporary retreat from an aggressive fire front. It is dependent on trained firefighter knowledge to select an appropriate location, to conduct effective analysis for when conditions change to become hazardous, and requires recognition when and where to move in alternate actions. The “in-street” refuge discussed in the Fire Protection Plan (Dudek, 2020) is only relevant and safe for professional firefighters and should not be considered safe or temporary refuge for civilian populations who lack such training. Such a distinction needs to be made in the Dudek plan.

#### Additional Safe Refuge Needed

Distances from later development phases in the north end of the project to emergency temporary safe refuge at the Community Center are considerable and require travel over exposed ridgeline roads. Additional development is needed in later phases of open, park like facilities that residents may access quickly to provide for proximal temporary safe refuge. The minimum size of such a facility should be 2.5 acres of open space.

Historical evacuation experience during past San Diego County wildfires has found limited participation by large percentiles of affected populations to evacuation warnings until late in evacuation periods, leading to traffic congestion during peak threat times. It will be important to stress the dangers associated with delay of evacuation in emergency messaging and public outreach. A wildfire prevention and Ready-Set-Go public education outreach has been proposed by the project proponent for the community.

#### Evacuation triggers

Best evacuation involves rapid movement of civilians into developed areas of the City of Escondido as the principal objective. Our analysis highlights that early notice and evacuation will be essential to the success of such a tactic. In a meeting of local fire professionals to review site risks, consensus was developed for “trigger points” (aka: “Management Action Points”) as indicators for initiation of evacuation of the project. These Management Action Points include:

##### *Evacuation Initiation:*

- a. Santa Ana (north-east) wind driven fire: Fire escaping initial attack or major fire spreading south and west of Ramona, Lake Sutherland, or Black Canyon. and developing trajectory towards Harvest Hills.
- b. Onshore wind-driven fire: Significant fire approaching Harvest Hills from the west from the community of Cloverdale or Escondido.

##### *Discontinue evacuation and seek temporary shelter in place:*

Fire is threatening principal evacuation roads, or Santa Ana wind driven

fire is at the east side of San Diego Zoo Safari Park.

These Management Action Points have been recommended to provide sufficient time necessary to evacuate Harvest Hills prior to wildfire arrival within the community, estimated to be around 1 to 1.5 hour. Fires occurring closer than the noted locations, or moving very fast may offer less evacuation time.

### Emergency Messaging

Detailed but succinct evacuation information should be broadcast to the media and via the Alert SD reverse 911 system and the County's Wireless Emergency Alert (WEA) network. Evacuations should be directed to facilities distant enough from the fire area to ensure complete removal of threat, as well as promote freedom of access by emergency responders. Evacuation information should include both human and large animal evacuation guidance. This information is slated to be developed by the Community Association per the project Fire Protection Plan (Dudek, 2020).

### **Fire Protection Services**

Regional fire protection services are provided by a number of agencies since the site is an area of jurisdictional convergence. With the proposed annexation, structural and wildland fire and emergency medical services to the project would be provided by the City of Escondido Fire Department. Adjacent unincorporated areas receive municipal fire services from the San Diego County Fire Protection District (SDCFPD) and wildland fire protection by the California Department of Forestry and Fire Protection (CAL FIRE). CAL FIRE also contracts as the operational service provider for the SDCFPD. The San Diego Zoo Safari Park and areas along and south of SR78 are within the City of San Diego and are the responsibility of the San Diego Fire Department. Given automatic aid agreements within San Diego County which call for the response of the closest available unit, the City of Escondido already provides initial response in the area as the closest provider.



Escondido Fire  
Department  
equipment

The proponent has considered fire service emergency response times and services in its report (Dudek, 2020). Response time analysis has been conducted and the project will be within a 5-minute response time of the proposed community fire station facility. Fire sprinklers have been proposed for all occupied structural development.

*Project Area Fire Stations and response time to Harvest Hills entrance:*

New Escondido FS Harvest Hills	Village Core-To be built <5 minutes	-Type 1 Paramedic Engine, - Possibly co-staffed type 3 engine (3 ff's/shift)
Escondido FS 4 3301 Bear Valley Rd. Escondido	6.1 miles/ 10 min.	-Type 1 or Type 3 Paramedic Engine Rescue Ambulance
Escondido FS 2 421 N. Midway, Escondido	6.2 miles/12 min.	-Type 1 or Type 3 Paramedic Engine -Rescue Ambulance
Escondido FS 1 310 N. Quince St. Escondido	7.3 miles/15 min.	Type 1 Paramedic Engine Truck Rescue Ambulance Battalion Chief
SDCo. FPD FS 84 17701 San Pasqual Valley Rd., Escondido (San Pasqual Academy)	7 miles/12 min.	Type 6 Patrol Engine
San Diego FD FS 33 16966 Bernardo Center San Diego (Rancho Bernardo)	10.5 miles/ 18 min.	Type 1 Engine

Response Times

Fire services response times have been studied in the project proponent's Fire Protection Plan (Dudek, 2020) and determined that with the addition of a new fire station facility within the project, that 100% of the project will meet the City of Escondido standard of 7.5-minute travel time 90% of the time, as defined from the time fire services departs the station enroute to a reported incident. Other fire stations within the region will provide for augmented response to multi-company calls but will not achieve response within the response standard for the first-due company. The project will also achieve compliance for multi-unit response times (structure fires, etc.) for the entire first alarm/augmented response.

The project proposes to construct a fire station facility within the project, providing for the facility construction, its outfitting, a fire apparatus, and staffing. The improvement is proposed to be financed ultimately by Community Facilities District bonds. The

design, timing, and financing of this facility and staffing is the subject of separate negotiations between the project proponent and the City. Response time analysis, however, clearly indicates the station is needed to provide adequate response times. Siting of a fire station in this area will also address long-term coverage issues in a multi-jurisdictional service area. The project's Fire Protection Plan (Dudek, 2020) has calculated a call demand of 172 calls annually from the proposed project, well within the response capacity for the new fire station.

The new fire station is proposed for occupancy with the 275<sup>th</sup> dwelling unit for the project. Experience of the consultant team identifies that this may be late with regard to the need for service. In a similar situation in the City of Lake Forest Foothill Ranch Planned Community development in Orange County, CA, a structure fire occurred early in a project's phasing that resulted in a fire fatality. Although this new community had planned to add a fire station, it had not yet occurred and a delay of response time was cited as a significant factor in life loss. It should be noted that many other jurisdictions require full fire station siting prior to completion of the 100 to 150<sup>th</sup> occupancy. As a mitigation, the project has proposed possible staffing of a two-person crew in a temporary facility from the 1<sup>st</sup> occupancy permit through dwelling #274. In this study's finding, no fire agency is positioned to provide timely response to this site and fire protection services will be needed from the onset of the project.

For EMS response, life-saving standards, especially those associated with cardiac care require the onsite arrival of paramedics within 5 minutes. This standard is also met by the development of a new fire station within the project.

For wildland fire response, the City of Escondido maintains wildland fire apparatus (Type 3 engines) at stations close to the project. CAL FIRE/San Diego County Fire Protection District maintains a robust inventory of wildland fire resources within San Diego County that would serve the project during wildfire occurrence. This additional resource includes specialized equipment including 3 dozers, 6 hand crews from 4 fire camps, two air tankers, 2 medium helicopters, and air-attack command aircraft. The nearest Air Attack base in Ramona, the base location for all State aircraft, maintains a flight response time to the area of under 10 minutes to the project site.

### Water Systems

The proponent's Fire Protection Plan (Dudek, 2020) and developer supplemental notes discuss fire hydrant distribution, water delivery systems, pump stations, and elevated reservoir capacity will be planned to meet suburban development standards, as recommended by the California Fire and Building Code. At the time of the study, insufficient detail was available regarding the physical siting of reservoirs, planned lift stations, or hardening of water systems infrastructure against wildfire. This will be an area of continuing review by the City of Escondido. Hydrants have been proposed in the Fire Protection Plan as located on average every 500 feet

within the project and would be equipped with one 4” and two 2.5” connections.

It is recommended that all water system infrastructure be hardened for fire resistance and resiliency during wildfire. Minimum water storage for duration of flow in the system should be maintained at all times with at least 2 hours capacity, and reservoirs should be filled to maximum capacity prior to any predicted Red Flag weather events. Areas supported by lift stations alone should be avoided, with gravity fed supply being the principal source, whenever possible. Water system critical infrastructure such as pump stations should be supplied with uninterruptable backup power sources.

### **Development Mitigation Measures**

Fire risk mitigations have been proposed by the project proponent that are compliant with the current City of Escondido Fire and Building Code, including Chapter 7-A (which includes the amended 2016 California Building Code). Chapter 7-A addresses ember and flame impingement resistance from wildfire in high fire hazard areas. The City of Escondido code has recently been enhanced in Wildland-Urban Interface specific areas of concern and is currently one of the most stringent in the State of California.

Proposed development mitigations include:

- Annually maintained defensible space/fuel modification of 150 to 200 feet surrounding development (200 ft. on north and east sides)
- Automatic fire sprinkler systems in all structures (NFPA 13 compliant systems)
- Heat deflecting walls for up to 14 lots at the top of slopes were noted
- Ignition and ember resistant structural roofs and attic vents
- Construction setback limitations
- Limited building zones on lot perimeters controlling positions of ignitable yard features and landscape
- 50 feet of fuel modification on each side of major roads have been proposed by the project. This should be enhanced to 50 feet for all roads with wildland-abutment project wide, including emergency roads
- Non-combustible roofs and exterior walls
- Multi-pane tempered glass windows
- 20-foot fuel management zones for connector roads
- 10 feet of fuel modification in each side of emergency access roads
- Wildfire Evacuation Plan using Ready-Set-Go model and public outreach
- Ornamental plants to be consistent with County approved fire resistive plant lists and planting specifications.
- Overhanging decks, turbine roof ventilators, and other construction features of concern are prohibited.

- Yard structures must meet fire safe code restrictions and setback requirements

### Fuel Modification

Fuel modification dimensions, vegetation clearance, and construction aspects were reviewed in the project's Fire Protection Plan (Dudek, 2020) and found to be consistent with best practice for protection of homes. The study will make additional recommendations regarding protection of roadways.

The project has proposed fuel modification from 150-200 feet adjacent to structures throughout the project. (200 feet on the north and east sides that are exposed to Santa Ana winds). This is consistent with findings in both the Dudek Fire Protection Plan and this study regarding potential flame lengths and fire line intensity risk on the project boundaries, and is appropriate for mitigation of the presence of up to 50% slope onsite. All structures developed within the project will be provided with this fuel modification to a combination of an accepted fire resistive plant pallet of irrigated landscape, and at least 50% reduction of native fuels. Irrigated areas will be maintained in perpetuity for fuel modification. Emergency access to fuel modification and open space will be provided on average every 650 feet, and in no case greater than 1,300 feet. This study concludes that fuel modification proposed by the project to be adequate.

The project has proposed that primary roads will be treated with 50 feet of fuels clearance on each side, and secondary roads will be treated with 20 feet. Evacuation roads are proposed for 10 feet of clearance on each side. Given potential flame lengths and fire behavior from fuels adjacent to roads, this study recommends 50-feet of clearance on each side of all roads with a wildland abutment, including emergency access roads in order to protect against direct flame exposure from adjacent fuels on passing vehicles and allows conditions potentially hazardous to human life.

Since it is the intent to offer the Community Center as a temporary safe refuge location, it is recommended that at least 200 feet of fuel modification be provided for this site. Parking areas may be calculated into the fuel modification requirement.

### Building Construction & Access

All structures will be constructed using current State and local building and fire standards, including wildland urban interface standards. Building materials and methods would be fire resistive, and placement of structural components within yards adjacent to homes would be regulated. The project will comply with County of San Diego, City of Escondido, and State of California standards, including Chapter 7A of the Uniform Building Code. Road access and parking controls consistent with current requirements for fire apparatus access will be met. Traffic calming features such as speed bumps and roadway vertical height clearance that

may hinder the response of emergency apparatus shall be prohibited within the project. All security property gates will be equipped with a Knox automatic gate opening feature or lock, and maximum grades for drive ways shall not exceed 15%.

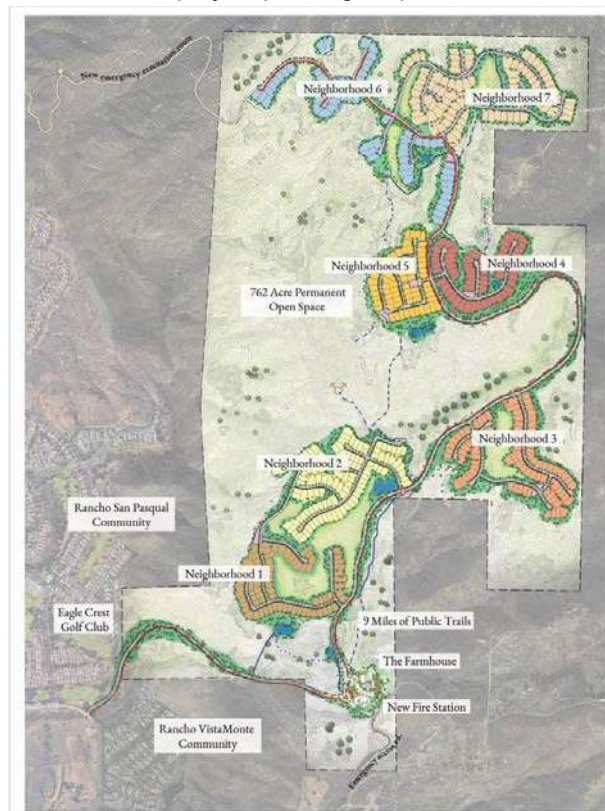
### Utilities

Public utilities for the Harvest Hills community are proposed for underground placement, eliminating concern for many electrical and transmission related hazards and wildfire ignition sources.

### Alternative Means

Additional mitigation is proposed in the Fire Protection Plan (Dudek, 2019) for 14 lots. These lots currently possess at least 15 feet of top-of-ridge setback, allowing for single story construction. The project has suggested that 2-story construction may be requested, and that alternate means for compliance with the two-story 30 feet requirement may be desired. The Dudek plan (2020) suggests use of a 1 to 2-foot masonry block base with 4 to 5 feet of dual plane tempered glass combination as an ember resistant wall to reduce fire ignition potential along the lot edge. The 14 potential lots are identified in mapping within the project's fire protection plan, and all of these lots would also be subject to 200 feet of fuel modification. This study has reviewed this potential application and is in agreement this is an adequate means of mitigating the risk and recommends approval of the condition.

Harvest Hills project phasing map



## **Implications for Wildfire Response**

Structural defense and evacuation of the Harvest Hills community from wildfire will be a dynamic and significant challenge for emergency services, but typical of challenges faced by many modern communities within San Diego County. Community fire resistive features including building construction style, fuel modification, fire sprinklers and water systems, and related improvements will significantly reduce the potential risk to both civilians and public safety responders.

Along perimeter streets and homes, active structural defense will be necessary. Where adequate defensible space is provided and maintained, the chief risk will be from flying embers and spot fires developing among combustible yard improvements or ornamental vegetation. Left unchecked, such sources can contribute to significant structural loss. Chief concern will be for homes at the head of the fire, and for homes on the community perimeter above canyons or drainages. Firefighters should expect strong uphill runs on slopes, especially when in alignment with winds. Fire fronts should be greatly abated by fuel modification, however ember cast may be heavy in some cases.

It is anticipated that residential streets will generally offer Temporary Safe Refuge for firefighters involved in structural defense, and that withdrawal to these streets during assault by heat pulses from wildfire will be a successful alternative for responder safety. Following safety withdrawal, rapid reengagement or fire-front-following as heat pulses subside would be a critical tactic to keep structural loss to a minimum.

Civilian populations will be planned for complete evacuation into urban areas of the City of Escondido. Late departing evacuees or evacuations under high rate of spread conditions may require civilians to congregate in temporary safe refuge in the Community Center area as an evacuation alternative. This will require responders to deploy protective measures on the community center to protect these populations.

### Estimated Potential Fire Loss

Worst-case wildfire conditions for the Project include severe Santa Ana winds, critical fire weather, and extreme fire behavior. The estimated structural loss from a short notice, worst case wildfire condition, affecting fire resistive, modern construction can be extrapolated from loss experience during the 2007 Witch and Guejito Fires (Maranghides & Mell, 2009), and 2014 Poinsettia Fire (San Diego Co. OES, 2014) and range from 3% to 7%. Structural loss would likely be concentrated on the community perimeters due to proximity to fire and fuels or fire branding. Sites with compromised or diminished defensible space may be at higher risk for fire ignition.

Community interior spot fires may develop in ornamental vegetation, yard storage,

or within structures. Once structures become involved, extension of fire to surrounding and exposed structures often results in a group loss in this community type.

In this worst-case scenario, fire resources may not achieve desired deployment levels due to reflex time or due to regional resource drawdowns due to multiple fires. Lesser fire conditions, or availability of adequate emergency mass resources may alleviate worst case potential loss, especially where defensible space is robust.

*Estimated Potential Structural Loss*

Total number of homes = 550

Total number of perimeter homes: Approximately 200

- a. Witch/Guejito Fire comparison: Loss of 3% to 7% of perimeter homes (worst case fire condition) = 6-14 homes
- b. Dudek/County average comparison for similar fire-resistive community loss during catastrophic wildfire = 2% to 4% (Dudek, 2015) = 4-8 homes

*Modern, fire resistive home burning, Witch Fire, Rancho Bernardo, CA 2007*



## Summary of Findings

1. **ASSESSMENT OF PROPONENT'S REPORT:** The project Fire Protection Plan (Dudek, 2020) has accurately portrayed the physical characteristics of the project site, its fire behavior potential, past fire history, and likely fire trajectories and intensity. The plan has correspondingly incorporated a number of proposals that are enhancements to code requirements and are appropriate given the project's recognition of fire risk.

a. Significant wildfire risk mitigations have been proposed for the Project including Wildland-Urban Interface code compliant building construction, structural setbacks, enhanced fuel modification, utility undergrounding, and related features that meet state-of-the-art for community development resistance to wildfire. These mitigations should serve to significantly reduce the potential for life or structural loss during wildfire.

b. Structural risk mitigations and fuel modification should be extended to all critical facilities whenever possible, including water pump/lift stations, cell phone facilities, and related assets.

c. Restrictions and limitations of yard construction and the limitation of combustible homeowner improvements as a fire safety measure needs to be better emphasized and stated in the report as a means of prevention of ember cast ignition.

2. **ALTERNATE MITIGATIONS:** Special, alternate mitigations are provided for up to 14 lots with limited clearance for construction setbacks along ridgelines. These lots have effective setbacks for single story construction (15 feet), but lack enough clearance for two-story construction (30 feet). As a proposed mitigation, the plan calls for addition of a minimum 6-foot ember resistant wall to be placed across the developed property line of these 14 lots, in addition to 200 feet of fuel modification. This alternate mitigation has been reviewed by this study and determined to be effective mitigation. The proposal is recommended for approval by the City of Escondido.

3. **ROADS:** Requirements for development include two means of road access to the proposed development. The project proposes to achieve this through the provision of a principal roadway constructed to City/County road standards, and two emergency access routes that are not full-time accessible and are locked and gated. Both emergency routes are paved with two 12-foot lanes, but otherwise are not proposed to meet City/County road standards. Both emergency roads are proposed for fitting with an unstated number of emergency turnouts, but are not provided with lighting. Fuel modification is proposed for all primary, secondary, and emergency roads but is very limited for emergency roads, only 10 feet on either side which does not provide adequate clearance given fire behavior studies.

a. In the opinion of this study, the provision of a locked gate and part time status road does not meet road standards for Wildland-Urban Interface development and does not provide an effective secondary project access. The gated access is problematic during emergencies, and no provision has been stated for how the gate will be unlocked for public emergency use. This report assumes the project intends for public safety personnel to unlock the gate, but this is likely unreasonable given the demands for emergency services during such periods. The project proponent needs to define how this gate may be operated without impacting emergency services, or eliminate gate closure.

b. Both proposed emergency roads traverse terrain that is subject to fire movement, is steeply sloped, and among moderate to heavy wildland fuels. The Zoo Road access traverses a distance of one mile. The Northern Emergency Route covers a distance of 2.4 miles. Both roads are proposed for fuel modification of 10 feet on either side. In this study, fire behavior assessment was conducted for these emergency roads and potential for flame lengths of 40 to 60 feet and slope guidance of fire onto roadways was identified. This indicates that these roadways have significant potential for blockage or entrapment during fire passage and present high risk to the safety of users as currently proposed. As such, these emergency road proposals, as currently configured, are identified by this study as hazardous and unsafe for public use.

c. This study has identified that critical rates of spread are common to Santa Ana wind driven wildfires in the area of the project. In the opinion of this study, best options for public safety are rapid evacuation into the City of Escondido urban area or effective temporary safe refuge within the community as fires close evacuation options and movement becomes unsafe. As such, development of road options that expedite travel to Escondido are highly desirable. As a recommendation, this report suggests review of State Route 78 for potential lane addition or improvement between Safari Park and the City of Escondido urban boundary in lieu of the Northern Emergency Road, and upgrade of the Zoo Road emergency access to City/County road standards and retaining of this road as a full time, drivable, ungated option as the community's second means of access. Use of the Zoo Road access alternative also could resolve ongoing discussions on emergency road phasing due to its early availability in project construction.

d. Fuel modification has been proposed for 50 feet on both sides of the community primary access road, 20 feet on secondary roads, and 10 feet on emergency roads. Since much of the project development is along ridgelines above heavily fueled and steep slopes, flame lengths affecting these roads were calculated at 40 to 60 feet. It is the opinion of this study that fuel modification less than 50 feet presents unsafe conditions for project roads where there is a wildland abutment. This report recommends that all project primary, secondary, and emergency roads maintain at

least 50 feet of fuel modification on both sides with a minimum lane width of 12 feet where there is wildland abutment. Emergency roads should be situated with turnouts at least every ½ mile to facilitate movement of broken-down vehicles and for safe gathering of entrapped users, if required. Emergency roads are also recommended to be configured with a third median lane when possible to ensure fire apparatus access and to defer blockage by broken or stranded vehicles.

e. While assumptions have been presented within the Fire Protection Plan regarding traffic engineering and road capacity assessment, it is unclear whether these calculations were certified or conducted by a professional traffic engineer. It is recommended that the project be required to provide professional/certified traffic engineering studies regarding road travel capacities to provide valid confirmation of assumptions. All primary, secondary, and emergency routes proposed by the project should be included in such study, and the impacts for State Route 78 should be better determined between the Safari Park and the Escondido urban boundary. Study criteria should include consideration that SR 78 is an emergency evacuation route for the Community of Ramona, Cloverdale, and the Safari Park, in addition to the project. Calculations should not include an assumption for “contra-flow”, or conversion of major routes to all one direction of travel, as this is a law enforcement intensive method with a history of wildfire fatality occurrences in both San Diego and Butte Counties.

The traffic study should determine in particular what improvements may be necessary to State Route 78, which serves as a major transportation route and serves the greater region as a primary evacuation corridor. The study should determine how SR78 may be improved to not further degrade its capacity to manage peak load or evacuation traffic generated from the San Pasqual Valley, Safari Park, and upper Ramona region. This highway currently experiences backup traffic during peak times as traffic approaches the City of Escondido west-bound, primarily due to narrowing road width. During such conditions, traffic frequently backs-up from the urban boundary into wildland areas. Should this occur during wildfire, evacuees stranded in back-up may be exposed to dangerous conditions. Roadways may need improvement to ensure such backup conditions do not occur before evacuation traffic would be safe inside urban areas. The urban area boundary is currently found near SR 78 and Bear Valley Parkway. It is reasonable to expect that all project residents should be able to obtain safety within 1.5 hours of evacuation initiation.

f. The proposed Northern Emergency Route is not recommended for development by this study in that it is exposed to slope and potential fire behavior that significantly questions the safety of this route, and presents travel speed restrictions and limitations. Smoke is also likely to obscure limited visibility on this mountainous route. To make this route safe, road improvements to City/County standards including guard rails, additional fuel modification, and potentially road lighting and road widening with a third, median lane would be needed. Costs associated with

such improvement may be better applied to other road alternatives that would achieve a faster evacuation of residents to safety, such as improvements to existing SR78. It is noted that land ownership and access restrictions along the proposed route may also prohibit development of some of these recommended enhancements, particularly for road and fuel modification width.

**4. TEMPORARY SAFE REFUGE:** The project Fire Protection Plan (Dudek, 2020) identifies the Community Center (“The Farm House”) as a temporary safe refuge location for the community. The Community Center is located near the project’s main, southern entrance, has dedicated off street parking, and an occupancy limit of 500. This facility offers good opportunities for use for this purpose.

a. It is recommended that fuel modification around this structure be a minimum of 200 feet. Parking lots may be counted in this distance.

b. It is recommended that parking for this facility be improved to include parking availability closer to the facility’s occupancy limit. Currently stated plans that the ball fields may be used for overflow parking are unreasonable, given that all weather access by vehicles is not offered here. Nearby on-street parking is insufficient given potential for blockage of evacuation and emergency vehicle access.

c. It is recommended that the Community Center be outfitted with emergency power sources, and conditions be established for rapid access to the facility during off-hour emergencies.

d. The Fire Protection Plan has identified the fire station site for use for civilian emergency parking. This condition should be removed as the fire station will be secured from public access as a homeland security measure, may be used as a fire command post, and civilian use may block fire apparatus Station access/egress.

e. The final phases of northern project development do not have an independent safe refuge area and are located distant from the Community Center. Travel to the Community Center will require vehicle travel over ridgeline roads which may be exposed to fire and smoke conditions. For these reasons, development of an alternate “park-like”, or otherwise non-combustible, open space of at least 2.5 acres (minimum size to withstand expected fire effects) is recommended in the northern area of the project to provide an alternate temporary safe refuge site. The site should be reasonably level and handicap accessible.

f. The Fire Protection Plan (Dudek, 2020) references “Temporary Safe Refuge” among streets in developed portions of the community, citing California state fire training literature for such designation. Such sites require firefighter-trained judgement, the availability of protective equipment, and fire behavior knowledge for safe usage. This report recommends such sites not be used by the general public

for these purposes and this recommendation be struck from the Fire Protection Plan.

5. **EMERGENCY RESPONSE TIMES:** Both the project Fire Protection Report (Dudek, 2020) and this study concur that the project will reside outside of current emergency response time standards for the City of Escondido. Both reports conclude that the addition of a fire station facility within the project is needed to provide timely emergency services response.

6. **FIRE STATION TIMING:** The project has proposed construction and operation of a fire station facility within the project starting with the 250<sup>th</sup> home, and temporary service by a smaller crew from development of the first home. This study recommends earlier opening of the fire station facility to match risk development.

7. **WATER SYSTEMS:** Detailed information was not provided for review of water system features for the project. Information is needed regarding reservoir and lift station placement, distribution pressures, critical facility wildfire hardening, and related topics. These are important issues that will require full consideration by the City of Escondido. Lift stations as the principal means of distribution should be avoided whenever possible, and only be used for redundancy. Gravity flow systems are preferred. Any critical facility for water systems should receive structural and fuel modification to prevent loss. Critical water systems should also be equipped with secondary power sources.

8. **UTILITIES:** Any critical facility should receive structural and fuel modification to prevent loss. Critical systems should also be equipped with secondary power sources. This includes cell phone sites, telecommunications facilities, key electrical and natural gas facilities, and other critical community infrastructure.

## References

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# **Griffin Cove Transportation Consulting, PLLC**

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## **M E M O R A N D U M**

**TO:** Dan Silver, Endangered Habitats League

**COPY:** Laura Hunter, Sierra Club North County Group  
NeySa Ely, San Pasqual Valley Preservation Alliance

**FROM:** Neal K. Liddicoat, P.E., Principal

**DATE:** February 17, 2022

**SUBJECT:** *Harvest Hills Evacuation Plan Review - Escondido, California*

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Griffin Cove Transportation Consulting, PLLC (GCTC) has completed a review of a number of documents related to the proposed Harvest Hills project in Escondido, California (“Project”). Of particular interest in our review was the ability to evacuate the proposed Project safely in the event of a wildfire. This memorandum presents the results of our review.

### **PROJECT DESCRIPTION**

The Harvest Hills project (previously known as Safari Highlands Ranch) is proposed to be developed on a 1,098-acre site in unincorporated San Diego County. The Project would consist of 550 single-family residential homes, as well as a community center/clubhouse and a fire station. Approval of the Project would also include annexation into the City of Escondido.

### **SUMMARY**

The documents that we reviewed are described in the following section. Those documents concluded that the proposed Project could be safely evacuated within an acceptable period of time in the event of a wildfire. However, our review revealed that this conclusion is based on flawed assumptions and analysis procedures. In particular, we determined that:

- The roadway capacity assumptions are substantially flawed and, specifically, they overstate the capacity of the evacuation roadways.
- The travel speeds assumed in the analysis are unsupported by facts or analysis.
- The methodology used to derive travel times was flawed and represents a failure to understand the basic characteristics of traffic flow, particularly under conditions when traffic demand exceeds the capacity of a road. The methodology further fails to represent an understanding of traffic flow when drivers are under extreme duress, as during a wildfire evacuation.
- The analysis includes traffic only from the proposed Project and nearby communities; it ignores ambient traffic that is already on the area road system at the time an evacuation is ordered, as well as other evacuating traffic, such as vehicles departing Ramona along State Route 78 (SR 78).
- The evacuation times presented are incomplete and misleading, as they ignore pre-evacuation notification and preparation time.

- Insufficient consideration has been given to the potential for the northern segment of the Project to be cut off from safety by a fire encroaching on the middle segment of Safari Highlands Ranch Road. Topography in the area would seem to favor rapid fire spread, increasing the chances of the road being cut off.

In addition, we have provided a revised analysis that we believe provides a more accurate depiction of traffic conditions during a wildfire evacuation. The results of that analysis include the following points:

- Based on well-documented adjustment factors, the capacities of the roads on the evacuation routes are as much as 29 percent lower than the values employed in the Project's Fire Protection Plan.
- Under all of the "with Project" scenarios addressed in the Fire Protection Plan, as well as additional scenarios reflecting recommendations presented in a Fire Risk Assessment prepared for the City of Escondido, the traffic demand associated with an evacuation will be substantially greater than the capacities of key evacuation routes (as much as 54 percent greater).
- If ambient traffic on SR 78 is considered, it is possible that evacuating traffic demand will exceed capacity on that highway by as much as 64 percent.
- The simultaneous evacuation of Ramona could potentially overwhelm SR 78, consuming all of the available capacity on that highway.
- Given the anticipated high westbound traffic volumes on SR 78, drivers evacuating via Zoo Road or the Safari Park exit are likely to have extreme difficulty in entering the SR 78 traffic flow.
- In all cases, traffic flow on the evacuation routes will be unstable and susceptible to major disruptions, including significant levels of congestion and stop-and-go operation resulting in increased frustration, anxiety, and stress for evacuees.
- None of the evacuation scenarios provide sufficient road capacity to allow for safe evacuation of Harvest Hills or the neighboring communities.
- A significant risk exists that residents in the northern portion of the Project could be stranded with no means of escape if fire encroaches upon the middle segment of Safari Highlands Ranch Road. That road passes through an area with challenging topography, potentially increasing the odds of the road being cut off by fire. This is a particular concern given that a fire risk assessment commissioned by the City of Escondido specifically recommended that the proposed north evacuation route not be included in the evacuation road system.

The documents that we reviewed and our specific concerns are described in detail below.

## **DOCUMENTS REVIEWED**

The key document included in our review was the Project's *Fire Protection Plan – Harvest Hills* (Dudek, Revised December 2020). In addition to this most recent version of the FPP, we reviewed a previous version dated July 2017.

Appendix I to the FPP contains an "Updated Evacuation Analysis Responding to City Requests." The memorandum presented in this appendix is intended to provide evacuation travel times for the proposed Project (Dudek, January 16, 2020, with previous versions dated January 9, 2020 and November 23, 2019).

Attachment A to the Dudek evacuation analysis memorandum is an additional memorandum report prepared by Linscott, Law & Greenspan Engineers (LLG) and dated October 10, 2019, which provides a “roadway capacity assessment” for the various potential evacuation routes serving Harvest Hills. Specifically, this document provides roadway capacity estimates for those roads based on a series of assumptions.

In addition, we reviewed a *Fire Risk Assessment* completed for the City of Escondido by Rohde & Associates. That document, which is described in greater detail later, provided a detailed critique of the Dudek FPP, including a number of comments and recommendations regarding the proposed evacuation road system.

## **FIRE PROTECTION PLAN REVIEW**

### ***Roadway Capacity Assumptions***

The December 2020 Dudek Fire Protection Plan (p. 75) lists road capacities for the anticipated evacuation routes, as follows:

- Rockwood Road – 2,600 vehicles per hour,
- Zoo Road – 1,900 vehicles per hour,
- Cloverdale Road – minimum 2,600 vehicles per hour, and
- Northerly emergency evacuation route – 500 vehicles per hour.

However, as noted above, the roadway capacity assumptions employed in the Dudek evacuation travel time analysis memorandum were provided by LLG. Presumably, those values supersede the numbers listed above. The LLG capacity assumptions were based initially on the results of research documented in an October 2017 Federal Highway Administration (FHWA) report entitled, *Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System*.

As noted in the LLG memo, that document addresses “two lane highways with no traffic control,” a situation that they state would likely exist during an evacuation, as one of the basic evacuation plan assumptions is that intersections and other critical points on the road system would be controlled by law enforcement officers, rather than the typical traffic control devices (e.g., traffic signals or stop signs). According to the FHWA report, the one-way capacity of such a roadway is 1,490 vehicles per hour per lane (VPHPL) under base conditions. LLG also notes that this value is subject to adjustment to reflect the physical characteristics of the road as well as the nature of the traffic using the road (e.g., the number of trucks).

Based on this, LLG applied various assumed adjustment factors to the base condition value of 1,490 VPHPL in an attempt to reflect the characteristics of the evacuation routes. Table 1 summarizes the specific adjustment factors applied to each of the key roadways and the resulting estimated capacity values.

As shown, the assumed capacity reductions range from 10 percent to 50 percent. Based on these assumptions, the adjusted capacity values range from as low as 745 VPHPL for the proposed North Evacuation Route and Stonebridge Road to a maximum of 1,340 VPHPL for several other roads, including SR 78.

However, no rational basis is provided for any of these assumed adjustment factors. Presumably, they represent the judgement of the LLG analyst but, absent any delineation of the thought process involved and the specific reasons for each of the adjustments, the factors are simply not credible.

We also note that the LLG memo addresses the additional capacity provided in connection with the provision of dual left-turn lanes on the westbound approach to the intersection of Rockwood Road/Cloverdale Road, as well as a second southbound right-turn lane at the Cloverdale Road/SR 78 intersection. In both cases, LLG concludes that these additional lanes would enhance the intersection capacity by 1,500 VPHPL. This is, of course, highly questionable, as it seems extremely unlikely that an intersection turn lane would have a higher capacity value than the corresponding value for a through lane along a straight segment of roadway, given the obvious need for drivers to slow down prior to entering a turn lane.

<b>Table 1</b>		
<b>Estimated Roadway Capacity Adjustments<sup>1</sup></b>		
Road	Adjustment Factor	Estimated Capacity
Rockwood Road	10% Reduction	1,340 VPHPL <sup>2</sup>
Cloverdale Road	10% Reduction	1,340 VPHPL
State Route 78	10% Reduction	1,340 VPHPL
San Pasqual Road	15% Reduction	1,260 VPHPL
Safari Highlands Ranch Road	20% Reduction	1,190 VPHPL
Zoo Road	40% Reduction	890 VPHPL
North Evacuation Route (Stonebridge Road)	50% Reduction	745 VPHPL
Notes:		
<sup>1</sup> Source: Linscott, Law & Greenspan Engineers, "Safari Highlands Ranch – Roadway Capacity Assessment, Evacuation Event," October 10, 2019.		
<sup>2</sup> Vehicles per hour per lane.		

In short, the assumed roadway capacity values employed in developing evacuation-related travel times are not credible and need to be evaluated further.

***Revised Roadway Capacity Estimates***

More realistic and credible road capacity values can be derived using historical information published in the *Highway Capacity Manual (HCM)*. Although recent editions of that document base the capacity of two-lane roads on somewhat esoteric parameters such as "percent time spent following," the 1985 version of the HCM provides a methodology to determine capacity directly based on traffic volumes with application of appropriate adjustment factors. Key to the 1985 HCM procedure is the ability to adjust the basic capacity of a two-lane road to reflect terrain (e.g., level or rolling), the directional distribution of traffic (i.e., how much is traveling in each direction), the characteristics of vehicles in the traffic stream

(e.g., trucks and recreational vehicles), and the physical nature of the road (specifically, lane width and shoulder width).

We have undertaken a process to adjust the basic capacity value of 1,490 VPHPL using factors provided in the 1985 HCM. Specific adjustments were made to reflect the following characteristics of the roads and the evacuating traffic stream:

- Directional distribution: 100% / 0% (All traffic flowing in one direction, away from a wildfire)
- Heavy vehicles: Trucks 1% (Including all vehicles with more than four wheels on the ground, such as garbage trucks, delivery vehicles, service vehicles, etc.) / Recreational vehicles 4% (Including motor homes, towed travel trailers, and towed boats)
- Rolling terrain adjustment applied to Safari Highlands Ranch Road, Zoo Road, and the North Evacuation Route; others considered level
- Lane and shoulder width: Adjustment applied to Zoo Road and North Evacuation Route due to reduced shoulder width (Shoulders three-feet wide on one side only)

Table 2 summarizes the results of this adjustment process.

<b>Table 2</b>		
<b>Modified Roadway Capacity Adjustments<sup>1</sup></b>		
Road	Estimated Capacity	Compared to LLG Estimate
Rockwood Road	1,020 VPHPL <sup>2</sup>	-24%
Cloverdale Road	1,020 VPHPL	-24%
State Route 78	1,020 VPHPL	-24%
San Pasqual Road	1,020 VPHPL	-19%
Safari Highlands Ranch Road	840 VPHPL	-29%
Zoo Road	770 VPHPL	-13%
North Evacuation Route (Stonebridge Road)	770 VPHPL	+3%
Notes:		
<sup>1</sup> Reference: Transportation Research Board, <i>Highway Capacity Manual</i> , Special Report 209, 1985.		
<sup>2</sup> Vehicles per hour per lane.		

As shown, application of the 1985 HCM adjustment factors to the basic capacity value of 1,490 VPHPL generally results in lower roadway capacities, with the exception of the North Evacuation Route/Stonebridge Road where the estimated capacity is slightly higher.

### ***Travel Speed Assumptions***

It appears that the evacuation travel time estimates were derived using two approaches, the first of which employed assumptions regarding travel speeds. According to the January 16, 2020 Dudek memorandum included in Appendix I to the FPP, “. . . speeds range between 6 and 9 mph in this study . . .” (p. 2) Later, that same memorandum (p. 4) states that, “. . . the analysis considers an average 8 mph travel speed . . .” Other similar statements occur elsewhere in the document.

Although, on the surface, these assumed speeds might seem reasonable, the document provides no rational basis for their use. No documentation is provided as to the validity of these speeds and no analysis or evaluation is provided to demonstrate their legitimacy. We note also that the derived travel times using these speeds were uniformly substantially shorter than the times estimated using the second methodology, which reinforces the likelihood that the assumed speeds are invalid.

### ***Travel Time Derivation Methodology***

As noted above, two methods were apparently used to derive the evacuation travel times. The speed-related method described above consistently provided travel time estimates that were simply not credible; in approximately two-thirds of the cases evaluated, the estimated travel time was in the range of 9.01 – 15.18 minutes. (We should note that this information is not readily apparent to the casual reader, as the travel time estimates we reference here are located in Attachment E to Attachment A to Appendix I of the FPP.)

The second method, which generally served as the basis for the evacuation travel times reported in the FPP, directly employed the road capacity estimates discussed above. We have already described why those estimates are not valid, but a further discussion of this method is warranted, as there are additional deficiencies in the analysis. In general, the analysis reflects a failure to understand certain basic characteristics of traffic flow, particularly when traffic demand exceeds roadway capacity.

Dudek’s January 16, 2020 evacuation travel time memorandum states (p. 2):

*Using these [roadway capacity] averages, it is possible to approximate the length of time it will take for the number of vehicles within a community to be moved past a given point. This is accomplished by dividing the number of vehicles that need to evacuate by the total hourly roadway capacity.*

Unfortunately, the results of this calculation were inappropriately translated into a travel time value. For example, if the result of the calculation was 1.00, the conclusion was that the travel time was exactly 1.00 hour (i.e., 60 minutes). A calculation result of 0.75 was interpreted to mean a travel time of 0.75 hour, or 45 minutes, and a result of 1.50 was believed to indicate a travel time of 1.50 hours or 90 minutes.

The problem is that this calculation does not provide a measure of evacuation time. In order to provide an indication of time (and, in particular, the travel time associated with an evacuation), there must be a distance component in the calculation. In other words, the calculation must answer the question, “How long will it take me to get from Point A (e.g., my home in the proposed Project) to Point B (e.g., a safe location some distance from the wildfire)?” That distance component is lacking from the calculation.

In reality, the calculation described in the evacuation plan provides a volume/capacity (V/C) ratio for a given point on a given road. Attachment A to the Dudek memo provides the LLG “Road Evacuation Capacity Analysis” referenced above, and Attachment E to the LLG memo provides the “Travel Time Calculation Assumptions,” which lays out how the travel times were estimated. As an example, the

second page of that attachment shows the “Scenario 1 – Existing” analysis for “Safari Park Evacuation to South of San Pasqual/SR-78 Intersection.” Specifically, it evaluates “1866 vehicles at 1350 v/h capacity” and concludes that the travel time will be 83.55 minutes.

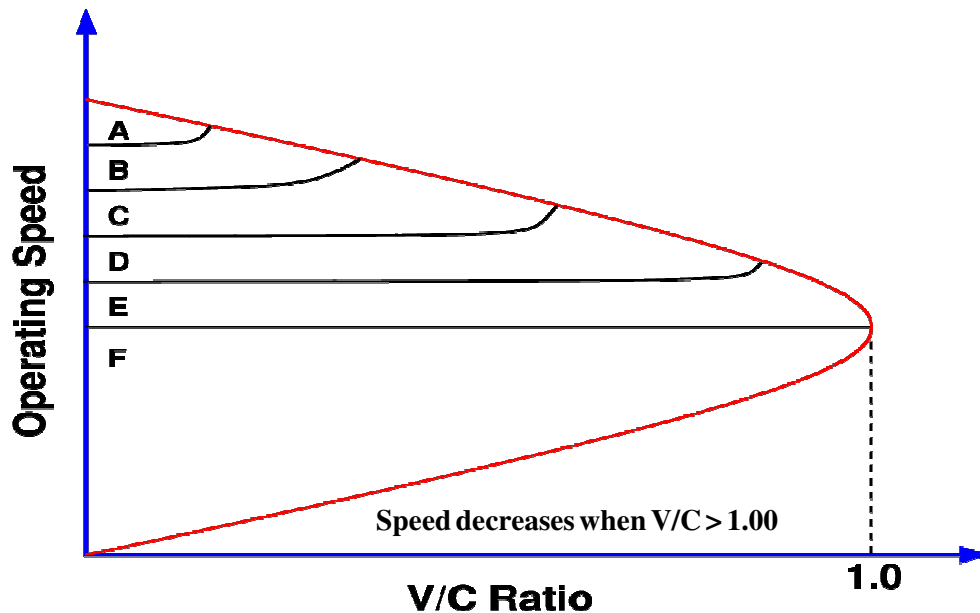
First, we note that the calculation misstates the assumed capacity of SR 78 – the actual assumption is 1,340 VPH, not 1,350. (The calculation reflects the correct capacity, but this error might be misleading.) As suggested above, the 83.55 minute value is derived by dividing 1,866 by 1,340 ( $1,866 / 1,340 = 1.39$ ) and multiplying that result by 60 minutes/hour ( $1.39 \times 60 = 83.55$ ).

However, as we pointed out above, the actual result of this calculation is a V/C ratio not a time value, so when the analysis divides 1,866 vehicles by a capacity of 1,340 vehicles per hour, what it is really finding is that the traffic demand is equivalent to 1.39 times the capacity of the road (i.e., it has a V/C ratio of 1.39). In other words, the traffic demand is 39 percent greater than the capacity of the road.

To provide additional perspective regarding traffic operations, the quality of flow on a road is described in terms of “level of service” (LOS), which ranges from LOS A (free-flowing conditions) to LOS F (highly congested;  $V/C > 1.00$ ). A V/C ratio of 1.39 indicates operation substantially in excess of the road’s capacity and, by definition, represents LOS F. According to the *Highway Capacity Manual* (Transportation Research Board, Sixth Edition, 2016, p. 12-18):

*Oversaturated conditions are represented by LOS F. LOS F describes unstable flow. . . . breakdown occurs when the ratio of existing demand to actual capacity, or of forecast demand to estimated capacity, exceeds 1.00.*

Unstable flow will be manifested in high levels of congestion and stop-and-go traffic, which will increase not only the time needed to evacuate, but also the levels of stress and anxiety for evacuees. The following graphic illustrates the relationship between LOS and travel speed. As shown, when a roadway reaches LOS F (i.e.,  $V/C > 1.00$ ), the operating speed rapidly declines.



The speed reduction illustrated here will directly translate into increased travel time. The Dudek/LLG analysis has incorrectly suggested that travel speed is linearly related to V/C ratio, which is not the case when traffic demand is near or beyond the road's capacity. Instead, the higher the V/C ratio, the greater the level of traffic flow instability and congestion, with stop-and-go operation and increasing levels of driver frustration and stress.

In addition, the analysis has inherently assumed that traffic will enter the evacuation in a uniform manner, so that the added traffic will be spread out relatively evenly over time. However, vehicles do not flow smoothly and uniformly, especially in the course of evacuating during an emergency. Instead, sudden surges in traffic would occur during an evacuation; it is extremely unlikely that traffic would be evenly distributed over time. That is, there will be variable pulses in traffic demand, just as there are in everyday traffic flows. These surges in demand will further contribute to the instability of the traffic stream.

In summary, the travel time analysis is fatally flawed, as it fails to represent a meaningful understanding of certain critical characteristics of traffic flow. Later in this memorandum we provide a revised analysis, which follows this basic approach, but more accurately reflects traffic operations during an evacuation.

### ***Traffic Volume Estimates***

The Dudek analysis includes evacuation traffic generated by the following locations:

- Proposed Harvest Hills Project (1,210 vehicles),
- Rancho San Pasqual (1,276 vehicles),
- Rancho Vistamonte (176 vehicles),
- San Pasqual Elementary School (200 vehicles), and
- San Diego Safari park (1,866 vehicles).

However, it ignores any ambient traffic that is already on the various evacuation routes when an emergency evacuation is ordered. Particularly noteworthy is the failure to consider ambient traffic on SR 78. For perspective, according to Caltrans 2019 traffic volume data, that state highway carries an average of 10,200 vehicles per day (VPD) east of Cloverdale Road and 13,300 VPD west of there. In the peak hour, SR 78 carries 1,300 VPH east of Cloverdale Road and 1,000 VPH to the west.

Looking at the directional distribution of the SR 78 peak hour traffic, about 75 percent of those vehicles are westbound, equivalent to almost 1,000 westbound vehicles on the SR 78 segment east of Cloverdale Road. Based on the revised road capacity value described above (1,020 VPHPL) and recognizing that westbound SR 78 has two lanes in that area (total capacity of 2,040 VPH), the existing peak hour traffic consumes about half of the total capacity of the road, thereby limiting the amount of evacuation traffic that can be accommodated. It is not unreasonable to expect that similar conditions apply to the other evacuation routes.

Further, the Dudek analysis ignores that other communities will also need to evacuate and, in some cases, will also be consuming the capacity of the routes addressed in the FPP. One obvious example is the community of Ramona, for which SR 78 is a primary evacuation route. The 2010 U.S. Census shows that Ramona has a population of 20,292. Using the SANDAG average household size of 3.12 occupants per dwelling employed in the Dudek FPP (p. 47) indicates the presence of about 6,500 households in Ramona. Those 6,500 households would generate evacuation traffic of 14,300 vehicles, based on the 2.2

vehicles per household average presented in the Dudek report (based on data from Cal Poly – San Luis Obispo, 2016).

In summary, the failure to account for the additional ambient and evacuation traffic on the area road system is a major deficiency in the Fire Protection Plan. In effect, the travel times documented in the FPP are rendered meaningless.

### ***Pre-evacuation Notification and Preparation Time***

The travel time estimates documented in the FPP only represent the time to travel from the specified communities (Harvest Hills, Rancho San Pasqual, etc.) to the vicinity of the intersection of SR 78/Cloverdale Road. First, we note that this destination is completely inadequate, as it is unlikely to represent safety for evacuees. Undoubtedly, residents fleeing a fire approaching from the east or northeast will want to be farther away than this relatively nearby location. A more realistic destination would be Interstate 15 (I-15), from which evacuees would have greater ability to depart the area safely.

Beyond this, however, we note that the evacuation time information presented in the FPP specifically and intentionally excludes the time needed for residents to receive notifications of the emergency and then to prepare to evacuate. The FPP (p. 76) provides a detailed listing of time requirements for various pre-evacuation activities totaling 125 minutes (i.e., just over two hours), plus an additional 30 minutes of “contingency time,” leading to a total of 155 minutes (2.6 hours) for pre-evacuation activities. The FPP goes on to say:

*Total minimum time that may be needed for a large-scale evacuation from the detection of a fire until the last person is out of harm’s way is 90 to 180 minutes.*

Again, this period of up to three hours is in addition to the travel time estimates presented in the Dudek FPP. We believe the failure to include this critical time period in the evacuation time estimates is misleading and provides an unwarranted sense of certainty that a safe evacuation can be accomplished in a reasonable amount of time.

### **REVISED EVACUATION TRAFFIC ANALYSIS**

As described above, the evacuation travel time analysis presented in the Dudek Fire Protection Plan is significantly flawed and, as a result, provides misleading information. To provide a more realistic and reasonable indication of traffic flow and operations in the course of an emergency evacuation, we developed a revised traffic analysis. Because we recognize the instability and uncertainty associated with traffic flow when demand exceeds road capacity, our analysis focuses on determining whether the evacuation routes can accommodate the number of vehicles that might be evacuating.

We have not attempted to provide travel time estimates, as we believe that meaningful estimates can only be derived through the conduct of a sophisticated traffic simulation analysis performed by an experienced traffic engineer who specializes in such analyses. Within such an analysis it will be particularly critical to carefully calibrate and validate the traffic simulation model to ensure that it adequately reflects traffic flow under extreme circumstances such as a wildfire evacuation.

Our analysis incorporates the following basic parameters:

- Traffic volume estimates as presented in the Dudek FPP,
- Modified roadway capacity values as presented in Table 2 above, and

- Analysis Scenarios 2 and 3 from the Dudek FPP, as well as two scenarios related to recommendations in the *Fire Risk Assessment* prepared for the City of Escondido by Rohde & Associates (Rohde) dated August 24, 2021. This document is briefly described below.

### ***Rohde Fire Risk Assessment***

Rohde was retained by the City to perform a fire risk assessment, particularly addressing issues related to wildfire, structural fire and life safety. Key recommendations presented in the report include:

- The north evacuation route should not be included in the Project's evacuation plan due to topographic considerations and potential fire behavior issues that might endanger users of that route.
- The two remaining evacuation routes (Safari Highlands Road and Zoo Road) should be improved to fully conform to City of Escondido standards and should be widened to provide three full-width lanes, two for evacuating traffic and one for inbound emergency vehicles. Neither of these roads should be gated.
- A detailed traffic study should be performed by a professional/certified traffic engineer. This suggests that the study should be performed by a professional civil or traffic engineer licensed by the State of California.
- The traffic study should evaluate the need for improvements to SR 78, including the potential need for one or more additional lanes. The study should also recognize that SR 78 is an evacuation route for Ramona and other communities.
- The Rohde study identifies the area near SR 78/Bear Valley Parkway as the Escondido urban area boundary, which it considers the immediate destination for evacuating traffic.

### ***Revised Evacuation Traffic Analysis***

Attachment 1 contains a table summarizing our revised evacuation traffic analysis incorporating the basic parameters listed above. Four "with Project" scenarios were considered:

- Dudek Scenario 2 – Evacuation via Cloverdale Road only. The North Evacuation Route and Zoo Road would be unavailable.
- Dudek Scenario 3 – All three evacuation routes would be available.
- With Rohde Recommendations – The North Evacuation Route would not be available, but Safari Highlands Road and Zoo Road would be improved to meet City standards and widened to provide three lanes, including two for outbound/evacuating traffic.
- Modified Rohde Recommendations – The North Evacuation Route would not be available, and Safari Highlands Road and Zoo Road would not be improved as recommended.

The Dudek scenarios evaluated here reflect the specific details included in the January 16, 2020 evacuation travel time memorandum; in some cases, those assumptions differ from earlier versions of the memo, particularly with regard to the geographic distribution of evacuating traffic. Note that we have not evaluated Dudek Scenario 1, which addresses existing conditions and excludes Project-related traffic.

We have also provided a limited analysis of the effects of ambient SR 78 traffic. As described above, Caltrans traffic volume data indicate that approximately 1,000 VPH travel westbound on SR 78 in the

peak hour. The two bottom rows of the table in Attachment 1 reflect inclusion of this traffic. Traffic on SR 78 that would arise from simultaneous evacuation of Ramona was not included, however.

In all cases, the analysis reflects the road improvements identified for Rockwood Road (a second westbound lane) and Cloverdale Road (a second southbound lane) as well as the corresponding intersection modifications (second turn lanes).

On the table, we have highlighted road segments projected to operate near or beyond capacity. Specifically, yellow highlights indicate segments that are expected to operate between 90 and 100 percent of capacity; traffic flow on those segments will be unstable and susceptible to major disruptions. Orange highlighted segments are projected to exceed capacity, with significant levels of congestion and stop-and-go operation.

#### *Dudek Scenario 2 – Cloverdale Road Only*

If only Cloverdale Road is available to accommodate evacuating traffic, major disruptions to traffic flow are projected. Road segments that are expected to exceed capacity include:

- Safari Highlands Road throughout much of the Project (V/C = 1.44),
- Rockwood Road, west of the elementary school (V/C = 1.09),
- Cloverdale Road (V/C = 1.40),
- SR 78, west of Cloverdale Road (V/C = 1.54), and
- San Pasqual Road, south of SR 78 (V/C = 1.55).

In addition, the segments of SR 78 east of Zoo Road and between Zoo Road and Cloverdale Road will operate at 91 percent of capacity (V/C = 0.91).

With consideration of ambient traffic on SR 78, the segments of that highway east and west of Zoo Road are expected to operate at 40 percent beyond capacity (V/C = 1.40), compared to V/C = 0.91 without considering that traffic.

We also note that, if Cloverdale Road is the only evacuation route available to Project residents, a significant risk exists that the northern sections of the Project could be cut off from the southern sections (and the sole evacuation route) if fire encroaches upon the roadway at this point. The slopes and overall topography in this area of the Project site would appear to be favorable to rapid fire spread, potentially increasing the chances of the road being cut off. In this event, the northern residents would be stranded, with no means of escape.

These results suggest that this scenario is untenable in the event of an emergency evacuation.

#### *Dudek Scenario 3 – All Three Evacuation Routes Available*

Provision of all three evacuation routes improves traffic operations within the Project site, but still results in major operational deficiencies. Three road segments will exceed capacity:

- SR 78, between Zoo Road and Cloverdale Road (V/C = 1.01),
- SR 78, west of Cloverdale Road (V/C = 1.29), and
- San Pasqual Road, south of SR 78 (V/C = 1.29).

Three additional routes will be at or near capacity:

- Cloverdale Road (V/C = 0.93),
- North Evacuation Route (V/C = 1.00), and
- SR 78, east of Zoo Road (V/C = 0.91).

Ambient traffic on SR 78 increases the V/C ratio on the segment east of Zoo Road from 0.91 to 1.40, and on the segment between Zoo Road and Cloverdale Road from 1.01 to 1.50.

Again, these results provide no certainty that Project residents will be able to evacuate safely.

*With Rohde Recommendations*

As described above, Rohde recommended that the North Evacuation Route not be used and that Safari Highlands Road and Zoo Road be improved to City standards plus the addition of a third lane to ensure two lanes are available for evacuating vehicles.

Even with full implementation of those recommendations, our analysis indicates that the following road segments will exceed capacity:

- Cloverdale Road (V/C = 1.20),
- SR 78, between Zoo Road and Cloverdale Road (V/C = 1.12),
- SR 78, west of Cloverdale Road (V/C = 1.54), and
- San Pasqual Road, south of SR 78 (V/C = 1.55).

Also, SR 78 east of Zoo Road is expected to operate at 91 percent of capacity (V/C = 0.91).

Ambient traffic on SR 78 will exacerbate conditions, resulting in operations 40 and 61 percent beyond capacity east and west of Zoo Road, respectively.

Thus, while the Rohde recommendations will result in acceptable traffic operations near the site (i.e., on Safari Highlands Road and Rockwood Road) and along Zoo Road, significant problems are anticipated on the other evacuation routes (i.e., Cloverdale Road, SR 78, and San Pasqual Road).

In addition, elimination of the North Evacuation Route again creates a substantial risk that residents in the northern portion of the Project will be stranded.

*Modified Rohde Recommendations*

This scenario addressed a condition under which the North Evacuation Route is not used and the Rohde-recommended improvements to Safari Highlands Ranch Road and Zoo Road are not implemented.

Traffic operations are again unacceptable. Road segments that would operate in excess of capacity include:

- Safari Highlands Road, north of the Zoo Road connection (V/C = 1.44),
- Cloverdale Road (V/C = 1.20),
- SR 78, between Zoo Road and Cloverdale Road (V/C = 1.12),

- SR 78, west of Cloverdale Road (V/C = 1.54), and
- San Pasqual Road, south of SR 78 (V/C = 1.55).

The segments of Safari Highlands Road south of the Zoo Road connection (V/C = 0.95) and SR 78 east of Zoo Road (V/C = 0.91) would be approaching capacity. As with the “With Rohde Recommendations” scenario, addition of ambient traffic on SR 78 causes the key segments of that highway to operate at 40 – 61 percent above capacity.

Similar to the other conditions evaluated here, traffic operations under this scenario will be unacceptable throughout much of the study area.

#### Ramona Evacuation Impacts

The revised evacuation analysis presented here does not include traffic associated with the simultaneous evacuation of the Ramona community, which is located east of the Project along SR 78. As described earlier, using parameters presented in the Dudek FPP, Ramona could be expected to generate evacuation traffic of up to 14,300 vehicles. If only 15 percent of those vehicles (i.e., about 2,150 vehicles) attempt to evacuate Ramona within a short timeframe, they will consume all of the available capacity on SR 78 in the vicinity of the Project. Further, given that SR 78 provides only one westbound lane between Ramona and the Safari Park, that section of highway would be completely overwhelmed by this traffic. In fact, as few as eight percent of the Ramona-related traffic (i.e., about 1,140 vehicles) would exceed the capacity of that two-lane segment of SR 78.

#### Conclusion – Revised Evacuation Traffic Analysis

None of the four evacuation scenarios addressed here provide sufficient road capacity to allow for safe evacuation of Harvest Hills or the neighboring communities. Consideration of the pre-existing traffic on SR 78 results in further exacerbation of traffic operations. Addition of vehicles evacuating from Ramona or other areas will cause traffic operations to deteriorate further. This will also be the case as evacuees travel to the west, toward safety; as they travel away from the emergency, they will become part of a larger traffic stream made up of other evacuees and traffic operations will continue to worsen.

Two other points are also apparent from this analysis:

- A significant risk exists that residents in the northern portion of the Project will be stranded if fire encroaches upon the middle segment of Safari Highlands Ranch Road. That segment of road passes through an area with challenging topography, including substantial slopes, which might increase the odds of the road being cut off by fire. This is a particular concern given that the experts at Rohde & Associates have specifically recommended that the north evacuation route not be considered as part of the evacuation road system.
- No consideration has been given to the difficulties likely to be experienced by drivers evacuating via Zoo Road or the Safari Park exit at the point where they need to enter SR 78. Given the anticipated high westbound traffic volumes on SR 78, those vehicles are likely to have extreme difficulty in entering the SR 78 traffic flow.

#### **CONCLUSION**

The evacuation travel time analysis presented in the Fire Protection Plan is substantially flawed. Critical inputs to the analysis including, in particular, the road capacity assumptions are not supported by facts or

analysis. Further, the travel time results are misleading and incomplete as they fail to include essential pre-evacuation notification and preparation times.

An analysis using modified road capacity values derived using well-documented adjustment factors found that under any of the previously-considered evacuation scenarios evacuating traffic demand will exceed the capacity of the roads. Consequently, significant congestion and stop-and-go traffic will prevail along the evacuation routes, resulting in increased travel times as well as high levels of frustration, anxiety, and stress for evacuees.

In summary, none of the evacuation scenarios provide sufficient road capacity to allow for safe evacuation of Harvest Hills or the neighboring communities.

**ATTACHMENT 1**

**HARVEST HILLS  
EVACUATION TRAFFIC ANALYSIS SUMMARY TABLE**

**ATTACHMENT 1  
HARVEST HILLS EVACUATION TRAFFIC ANALYSIS  
TRAFFIC VOLUMES, CAPACITIES & VOLUME/CAPACITY RATIOS**

ROAD	CAPACITY	ANALYSIS SCENARIO (1)									
		Dudek				Rohde					
		Scenario 2		Scenario 3		With Rohde Recommendations			Modified Rohde Recommendations		
		Cloverdale Rd. Only		All 3 Routes Available		No North Route / Improved Safari Highlands Rd. & Zoo Rd.			No North Route / Safari Highlands Rd. & Zoo Rd. Not Improved		
		VOLUME	V/C	VOLUME	V/C	CAPACITY	VOLUME	V/C	CAPACITY	VOLUME	V/C
Safari Highlands Rd. - North of Zoo Rd. Connection	840 VPH (2)	1,210	1.44	442	0.53	1,680 (8)	1,210	0.72	840	1,210	1.44
Safari Highlands Rd. - South of Zoo Rd. Connection	840 VPH (2)	1,210	1.44	242	0.29	1,680 (8)	800 (9)	0.48	840	800 (9)	0.95
Rockwood Rd. - East of Old Ranch Rd.	2,040 VPH (3)	1,386	0.68	418	0.20	2,040	976	0.48	2,040	976	0.48
Rockwood Rd. - Between Old Ranch Rd. & School	2,040 VPH (3)	2,024	0.99	1,056	0.52	2,040	1,614	0.79	2,040	1,614	0.79
Rockwood Rd. - West of School	2,040 VPH (3)	2,224	1.09	1,256	0.62	2,040	1,814	0.89	2,040	1,814	0.89
Cloverdale Rd.	2,040 VPH (4)	2,862	1.40	1,894	0.93	2,040	2,452	1.20	2,040	2,452	1.20
Zoo Rd.	770 VPH (5)	0	0.00	200	0.26	1,680 (8)	410 (9)	0.24	770	410 (9)	0.53
North Evacuation Route	770 VPH (5)	0	0.00	768	1.00	--	0	--	--	0	--
State Route 78 - East of Zoo Rd.	2,040 VPH (3)	1,866	0.91	1,866	0.91	2,040	1,866	0.91	2,040	1,866	0.91
State Route 78 - Between Zoo Rd. & Cloverdale Rd.	2,040 VPH (3)	1,866	0.91	2,066	1.01	2,040	2,276	1.12	2,040	2,276	1.12
State Route 78 - West of Cloverdale Rd.	2,040 VPH (3)	3,150 (6)	1.54	2,640	1.29	2,040	3,150	1.54	2,040	3,150	1.54
San Pasqual Rd. - South of SR 78	1,020 VPH (2)	1,578 (7)	1.55	1,320	1.29	1,020	1,578	1.55	1,020	1,578	1.55
<u>With SR 78 PM Peak Hour Traffic (1,000 VPH)</u>											
State Route 78 - East of Zoo Rd.	2,040 VPH (3)	2,866	1.40	2,866	1.40	2,040	2,866	1.40	2,040	2,866	1.40
State Route 78 - Between Zoo Rd. & Cloverdale Rd.	2,040 VPH (3)	2,866	1.40	3,066	1.50	2,040	3,276	1.61	2,040	3,276	1.61

**NOTES:**

- (1) Project & nearby communities only; Excludes background traffic + other evacuees (See below)
- (2) One southbound/outbound lane
- (3) Two westbound/outbound lanes (Use center turn lane, where necessary)
- (4) Two southbound/outbound lanes (Use center turn lane & traffic cones, where necessary)
- (5) One outbound lane; Limited shoulder width
- (6) Approx. 2/3 of evacuees
- (7) Approx. 1/3 of evacuees
- (8) Improved to three lanes; Two outbound lanes at City standards
- (9) Assumes approx. 2/3 use Safari Highlands Rd. & 1/3 use Zoo Rd.

**1.xx** Traffic demand exceeds capacity  
**0.9x** Traffic demand approaching capacity

September 10, 2021

TO: Adam Finestone, Interim Director of Community Development

FROM: Rick Vogt, Fire Chief 

SUBJECT: Harvest Hills Fire Risk Assessment Report (Rohde & Associates)

After reviewing the final draft of the Rohde & Associates Fire Risk Assessment Report (study) for the proposed Harvest Hills development, I believe that the report should now be provided to the proponents. The Summary of Findings on pages 28 through 32 provide a comprehensive list of the key wildfire and evacuation issues associated with the Harvest Hills development.

The following items need to be addressed:

- The study identifies that the Fire Protection Plan estimates for roadway travel capacity need to be verified in a traffic study prepared by a professional traffic engineer. The study must include project roads, emergency routes and transportation corridors from the project to the urban fringe identified as Highway 78 and Bear Valley Parkway. This traffic study must consider the effect of traffic from Ramona, Safari Park and the Cloverdale area.
- The study concludes that the evacuation routes and roads proposed are inadequate. The proponent must propose a modification that ensures adequate capacity and limits the potential danger to those who will have to use the routes, including civilians and emergency responders. The study indicates that:
  - Stonebridge Road (northern route) as proposed, regardless of its completion timeline, is inadequate due to the expected fire behavior that is likely to overwhelm the route.
  - Large turnouts every  $\frac{1}{4}$  to  $\frac{1}{2}$  mile are needed along all evacuation routes.
  - All access roads need to be used full time, meet city standards, and not have locked gates that restricts egress.
  - All roads along evacuation routes shall have 50' of fuel modification where adjacent to wildland fuels.
  - All roads along evacuation routes shall include lighting, and safety barriers when adjacent to slopes.

- All roads along evacuation routes must be a minimum of 24' wide. The study further indicates that the evacuation routes from the development to the urban fringe should have the capacity for at least three lanes (one of which can be a median) to ensure that egress is maintained while allowing ingress of emergency vehicles.
- The study recommends that the proponent propose an alternate to the Stonebridge Road evacuation route. The study suggests that, in addition to adding necessary emergency shelter in place locations, all proposed temporary roads be made permanent and that additional capacity be established from the development to the urban fringe, identified as Highway 78 and Bear Valley Parkway. This alternate proposal would need to be validated by a traffic study prepared by a licensed traffic engineer and reviewed by city staff and consultants.
- The study concludes that the “Temporary Shelter in Place” provisions of the Fire Protection Plan are inadequate. The proponents plan for the community center needs to address parking needs that includes an all-weather surface and does not include roadside parking. The plan must not include the fire station as a point of refuge for civilians. The plan must also not include “roadside refuge” for civilians.
- The study recommends that the Fire Protection Plan needs to better emphasize and state restrictions and limitation of yard construction and combustible home improvements.
- The study recommends that the Fire Protection Plan identify the viability of a water supply for firefighting for at least two hours. If water supply and pressure is dependent on anything other than gravity, adequate systems need to be in place such as backup generators.
- The study identifies the need for the proponent to develop additional safe refuge areas where residents can be reasonably safe during a fire impacting the community. Specifically, at least 2.5 acres of open land located in the later development phase areas are needed. The proposed areas and specifications would need to be reviewed and approved by City staff.
- Due to the effect that a wildfire may have in the areas surrounding Harvest Hills, the report recommends a geologic study to determine the potential for soil instability post-wildfire. The study should determine if there would be risks of land or mud slides that could affect the development and/or the areas nearby. The study suggests that this is a CEQA requirement.

- The study indicates that the required Fire Station be operational sooner than proposed. The timeline for a temporary station with apparatus and equipment and a permanent station needs to be developed that considers the cost and reflex time to construct facilities and acquire apparatus and equipment.

Although the funding for the start-up and ongoing operations of the proposed fire station was not a part of the study, I am still concerned that sustainable funding for staffing a fully functional municipal fire station has not been yet been identified.

Cc: Chris McKinney, Deputy City Manager  
Julie Procopio, Director of Engineering Services  
Ed Varso, Chief of Police  
Kurt Whitman, Senior Deputy City Attorney

## Blom, Erica

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**From:** rleiter9@cox.net  
**Sent:** Monday, August 01, 2022 9:26 AM  
**To:** Blom, Erica  
**Cc:** Mumpower, Priscilla  
**Subject:** [External] Public Comment on Agenda Item 7a on San Diego LAFCO Meeting Agenda for August 1, 2022

**Importance:** High

To: Honorable LAFCO Board

I am not able to attend today's hearing. However, I would like to support the recommendations of the Sierra Club North County Group, Endangered Habitats League, and San Pasqual Valley Preservation Alliance **to remove Recommendation 9b from the Staff Addendum for Agenda Item 7a.**

In addition to the reasons stated by other commenters for removing Recommendation 9a, I think it is important to consider the requirements of **California Senate Bill 379**, which states that all local governments must update the Safety Elements of their General Plans **no later than January 1, 2022**, to, among other things, address the impacts of climate change on the frequency and severity of wildfires, along with its impacts on other types of safety and health hazards. To my knowledge, the City of Escondido has not adopted an update to the Safety Element of its General Plan as required by SB 379. I think it would be prudent for the LAFCO Board to remove Recommendation 9b of the Staff Addendum until the City of Escondido has completed this update.

Best regards,

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